



County of San Mateo - Planning and Building Department

ATTACHMENT B





County of San Mateo - Planning and Building Department

ATTACHMENT C



Easement Map



County of San Mateo - Planning and Building Department

ATTACHMENT D

ARBOR RESIDENCE

199 ARBOR LANE MOSS BEACH, CA 94038

PROJECT TEAM	SHEET INDEX	BUILDING ANALYSIS	VICINITY MAP
OWNER: ZUBAR LLC 1309 MAIN STREET VENICE, CA 90291 ARCHITECT: CARLOS ZUBIETA ARCHITECTURE 1725-A ABBOT KINNEY BLVD. VENICE, CA 90291 310-827-8195 SURVEYOR: LEA & BRAZE ENGINEERING INC 26229 EDEN LANDING ROAD, SUITE 2 HAYWARD, CA 94545 510-887-4086 CIVIL ENGINEER: BERRY & ASSOCIATES 1733 WOODSIDE ROAD, SUITE 335 REDWOOD CITY, CA 94061 650-368-0750 GEOTECHNICAL ENGINEER: MICHELUCCI & ASSOCIATES 1801 MURCHISON DRIVE, SUITE 88 BURLINGAME, CA 94010 650-692-0163 BIOLOGICAL CONSULTANT: KOPITOV ENVIRONMENTAL LLC 220 ATLANTIC AVE, SUITE 312 SANTA CRUZ, CA 95060 206-456-4088 STRUCTURAL ENGINEER: --- --- ---	ARCHITECTURAL SHEETS: A-0.0 COVER SHEET - INDEX - ZONING - VICINITY MAP PR-1.0 PROJECT DESCRIPTION + MATERIALS PR-1.1 EXTERIOR ELEVATIONS + MATERIALS PR-1.2 EXTERIOR ELEVATIONS + MATERIALS PR-1.3 BUILDING SECTIONS + MATERIALS PR-1.4 SURROUNDING NEIGHBORHOOD + ROOF TYPES SU-1.0 TOPOGRAPHIC SURVEY A-1.0 SITE PLAN A-3.0 FIRST FLOOR PLAN A-3.1 SECOND FLOOR PLAN A-3.2 ROOF PLAN LT-1.0 LIGHTING PLAN L-1.0 LANDSCAPE PLAN	LEGAL DESCRIPTION: ADDRESS 199 ARBOR LANE MOSS BEACH, CA 94038 LOT: 12 TRACT: TR 864 BLOCK NONE ASSESSOR'S P.N.º 037-123-430 BUILDING CODE: 2017 EDITION OF CA BUILDING CODE PLANNING AND ZONING: OCCUPANCY TYPE: SINGLE FAMILY RESIDENTIAL ZONING: R-1/S-17/DR/CD EXISTING LAND USE : UNDEVELOPED PROPOSED BUILDING: SINGLE FAMILY RESIDENCE NUMBERS OF STORIES NEW BUILDING: 2 COASTAL DEVELOPMENT DISTRICT: YES DESIGN REVIEW DISTRICT: YES SCENIC VIEW CORRIDOR: YES BUILDING + LOT SUMMARY PARCEL AREA: 14,320 SF PROPOSED FLOOR AREA: FIRST FLOOR 2,510 SF SECOND FLOOR 688 SF TOTAL HABITABLE SF: 3,198 SF COVERED PORTION OF ENTRY PORCH 58 SF COVERED PORTION OF REAR PORCH 82 SF COVERAGE PORCHES 140 SF 2- CAR GARAGE 468 SF TOTAL BUILDING FLOOR AREA: 3,806 SF MAXIMUM BUILDING FLOOR AREA (PER SECTION 6300.2.5A): PARCEL SIZE OVER 11,698 SF = 6,200 SF PROPOSED BUILDING HEIGHT AT HIGHEST POINT: 24'-3 7/8" BUILDING TO BE PROTECTED BY AN AUTOMATED FIRE SPRINKLER SYSTEM. SAN MATEO COUNTY ZONING REGULATIONS PER CHAPTER 20 SECTION 6300.2 FOR DISTRICT S-17: MAX ALLOWABLE HEIGHT (PER SECTION 6300.2.6) = 28'-0" PARCEL COVERAGE FOR STRUCTURES > 16'-0" IN HEIGHT (PER SECTION 6300.2.4): 14,320 SF (LOT AREA) X .35 (35%) = 5,012 SF PROPOSED PARCEL COVERAGE = 3,994 SF REQUIRED BUILDING SETBACKS (PER SECTION 6300.2.3): FRONT = 20'-0" REAR = 20'-0" (MINIMUM) SIDE = 5'-0" (STRUCTURES OVER 16'-0" IN HEIGHT) SIDE = COMBINED TOTAL OF 15'-0" (MIN OF 5'-0" EACH SIDE) MAXIMUM IMPERVIOUS SURFACE AREA (PER SECTION 6300.2.7): MAX PARCEL AREA COVERED BY IMPERVIOUS STRUCTURES LESS THAN 18" IN HEIGHT IS LIMITED TO 10% OF THE PARCEL AREA, BUT IS NOT TO EXCEED 1,170 SF FOR RESIDENTIAL USES. 10% OF 14,320 SF = 1,432 SF THEREFORE THE MAX IMPERVIOUS SURFACE AREA = 1,170 SF PROPOSED IMPERVIOUS SURFACE AREA = 82 SF	



GOOGLE MAPS VIEW:

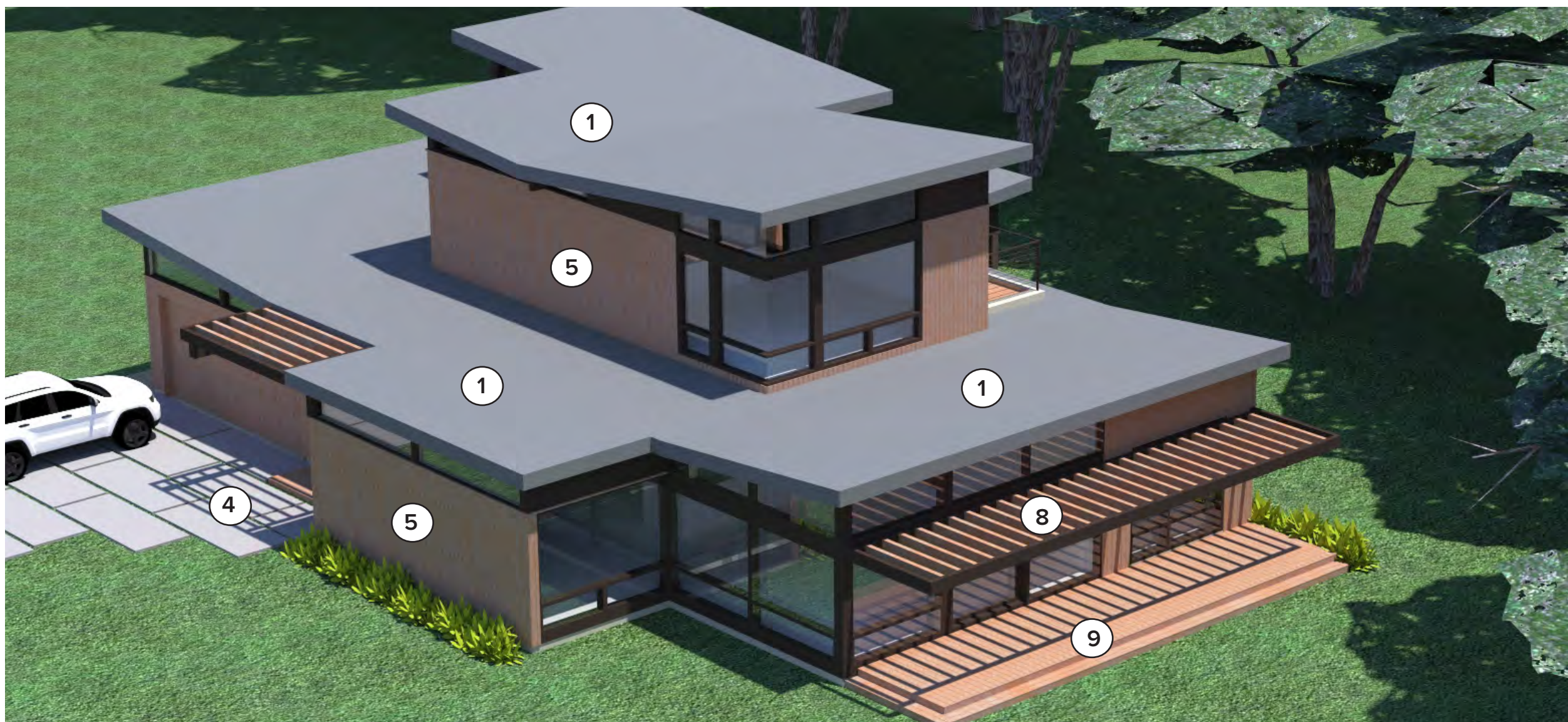
PROJECT LOCATION:

The project is located on a Cul-de sac approximately .17 miles West of Highway 1 in Moss Beach along the San Mateo County coastline. The coastal bluff is approximately 50 feet away from the property and overlooks the Fitzgerald Marine Reserve. The immediate surroundings of the project includes single family residences including one single family home to the immediate east and a vacant property owned by the home owners association to the North. The size of the site measures approximately 14,000 SF.

PROJECT DESCRIPTION:

The proposed project is of a new single family residence covering an estimated area of 3,200 square feet with an attached two car garage. The design and scale of the project was strategized to relate to the immediate neighborhood while the new structure uses contemporary strategies for incorporating passive solar, opening up the house to the outdoor spaces and retaining the native surrounding habitat as recommended by the biology report obtained. From the street the project scale is kept low to create visibility and reduce solid two-story wall surfaces.

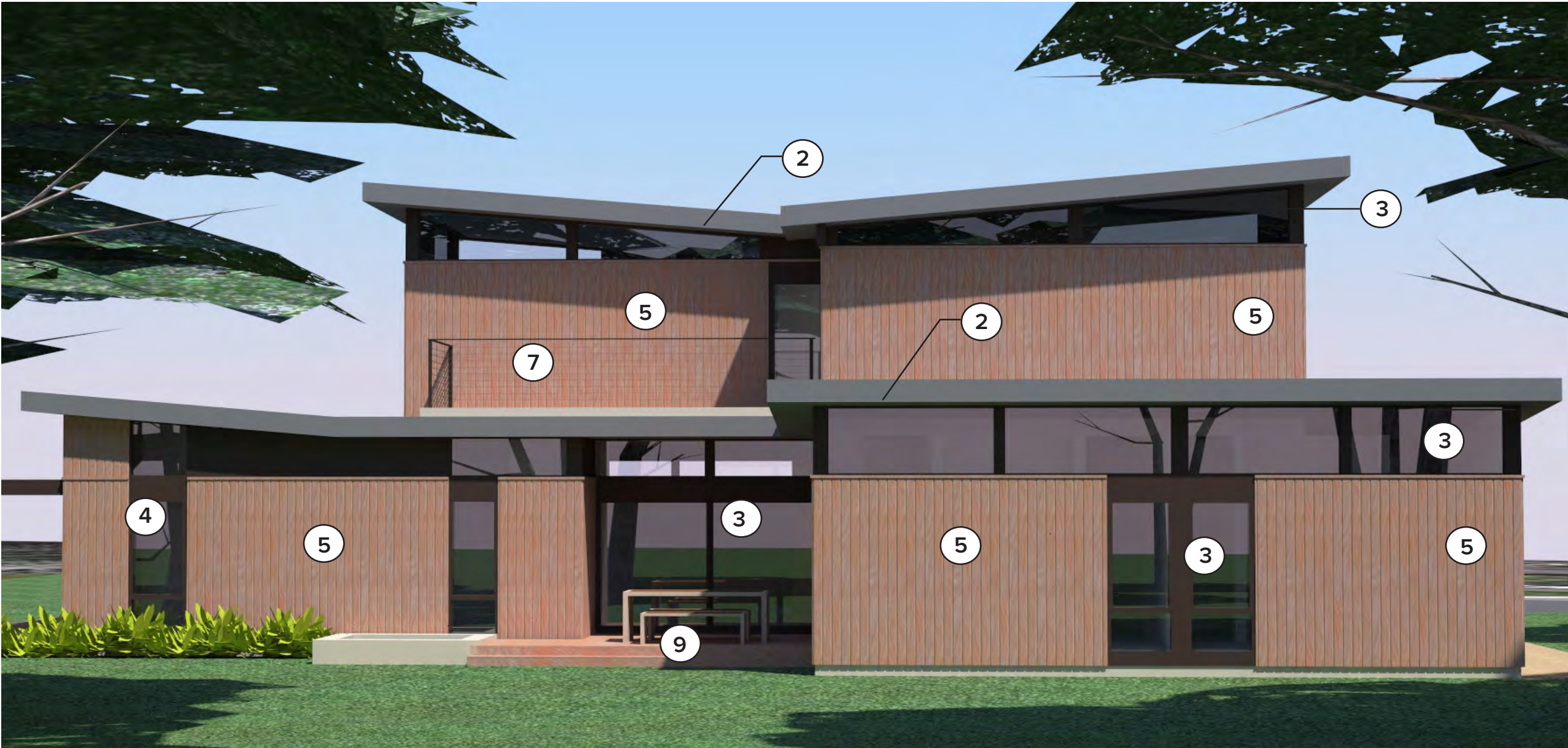
The use of environmentally conscious materials throughout the house helps to emphasize the warmth and character as well as blend with the natural surrounding landscape. Western red cedar exterior walls, are reminiscent of Sea Ranch and the the surrounding materials. Large South facing windows will open to the views of the surrounding landscape while also providing passive solar heating within the home. Varying roof slopes allow the house to be nested into the low-lying neighborhood, while the granite on the exterior roofing reflects the rocks along the cliff.



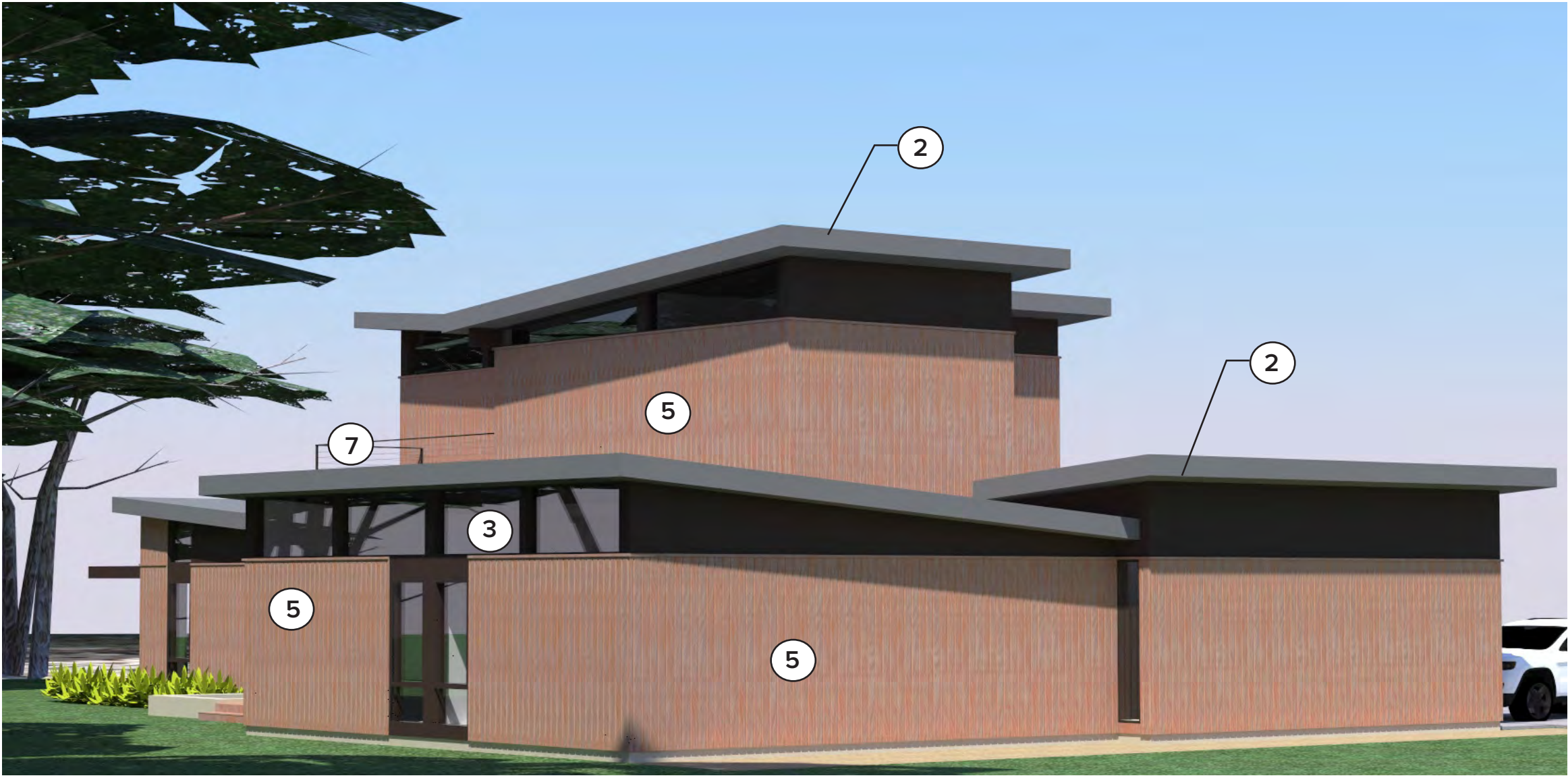
TOP VIEW:



NORTH ELEVATION VIEW: ARBOR LANE



SOUTH ELEVATION VIEW: OCEAN FACING



EAST ELEVATION VIEW:

MATERIALS AND FINISHES LEGEND:



1. ROOFING: Class A 4 Ply Built up roofing finished with a layer of rock - Granite No. 4 by A1 Grit Company



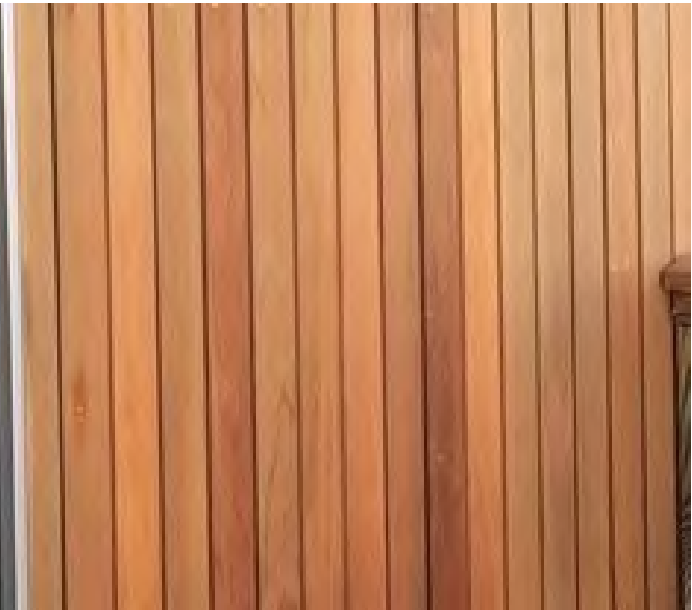
2.EXTERIOR TRIM: VM ZINC PIGMENTO zinc flat panels in "brown"



3. WINDOWS: Milgard Windows Aluminum Frame - color: dark bronze



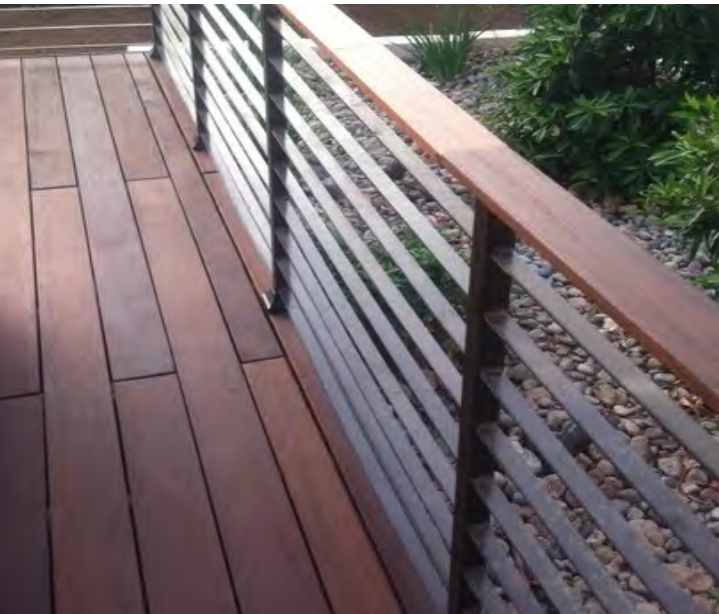
4. EXPOSED AGGREGATE CONCRETE: Site concrete at driveway and pavers for pathways



5. EXTERIOR WALLS: Natural wood siding in 4" wide -Western Red Cedar siding - Benjamin Moore ARBORCOAT waterborne exterior stain semi-solid 639



6. GARAGE DOORS: Natural wood Roll up doors - Western Red Cedar - Clr. polyurethane finish



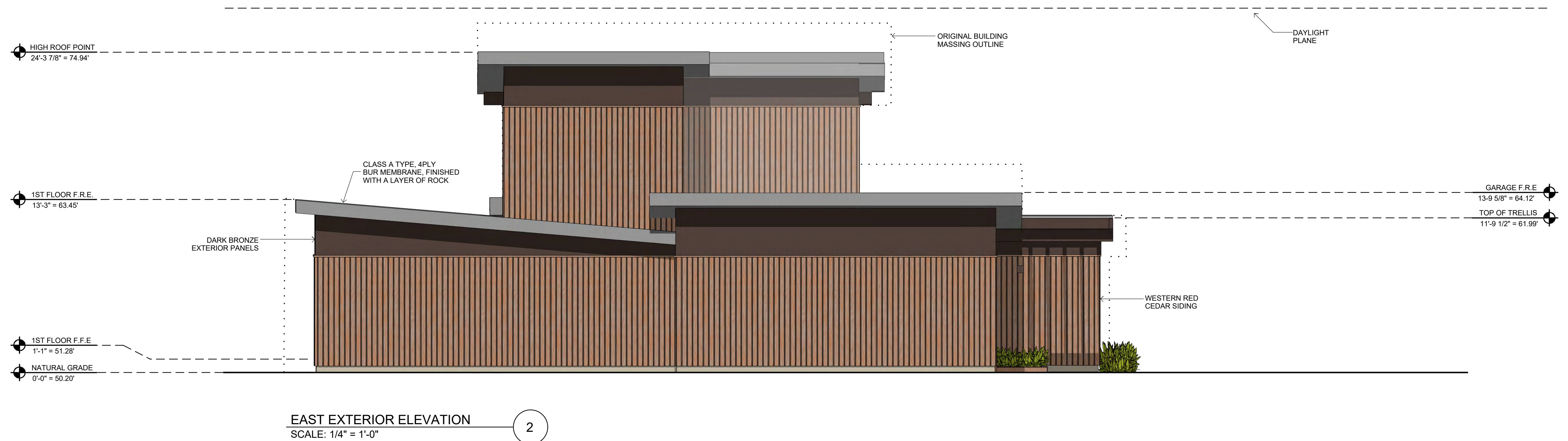
7. RAILINGS / BALCONY: Powder coated steel and natural wood top - bronze color to doors and windows and clr. polyurethane finish



8. OVERHANGS: Natural wood trellis- 4x12 douglas fir beams with clear polyurethane finish



9.HARDSCAPE / DECKS: poured concrete and natural wood decks - 2x6 teak clr. polyurethane finish



SEE CORRESPONDING MATERIALS AND FINISHES
LEGEND ON PAGE PR-1.0

ASSESSOR'S PARCEL NUMBER:
037-123-430

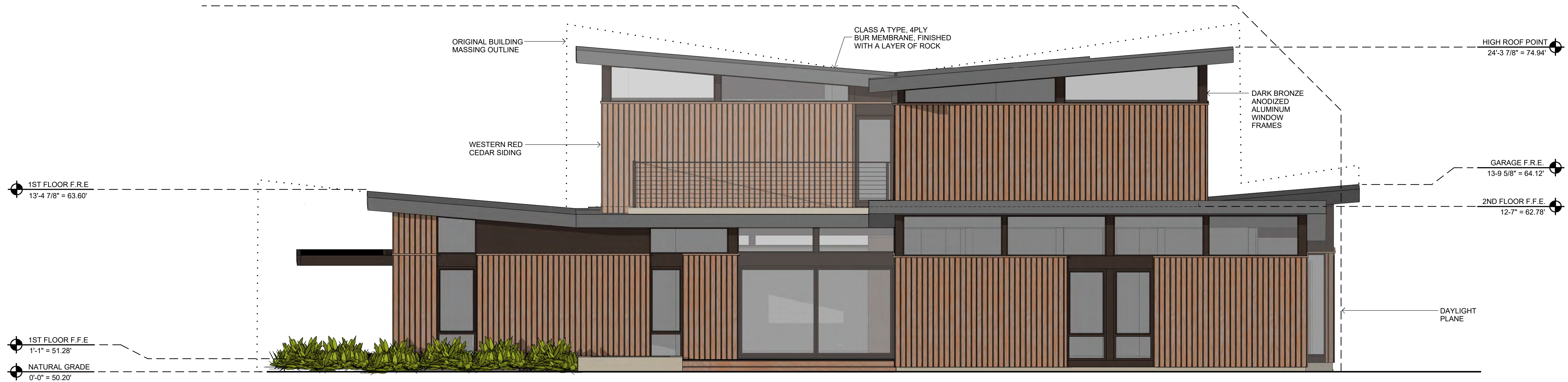
PROJECT ADDRESS:
199 ARBOR LANE, MOSS BEACH, SAN MATEO COUNTY, CA

PR-1.1



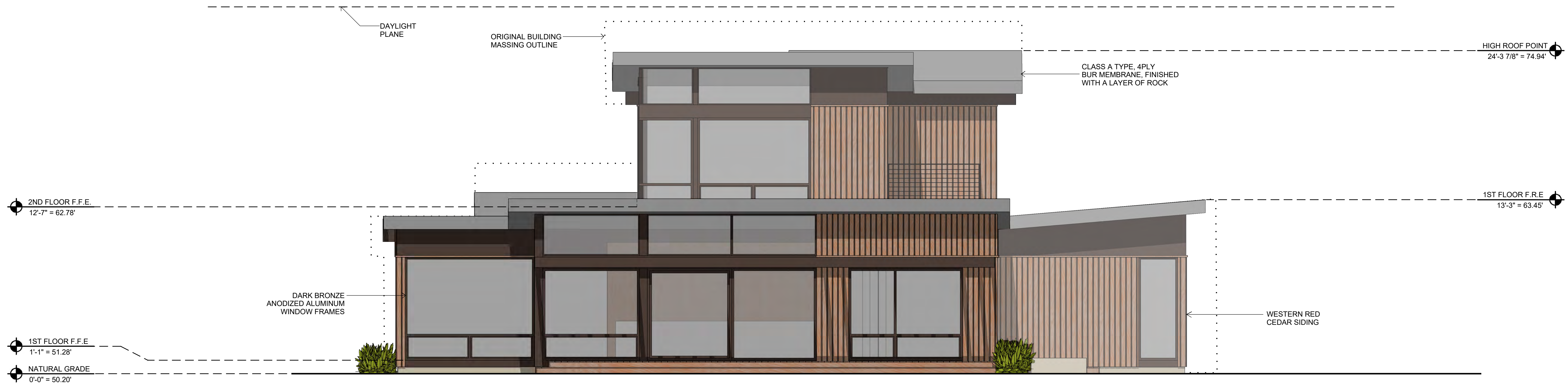
3 REVISIONS PER CDRC HEARING COMMENTS 07.24.17

EXTERIOR ELEVATIONS WITH MATERIALS



SOUTH EXTERIOR ELEVATION
SCALE: 1/4" = 1'-0"

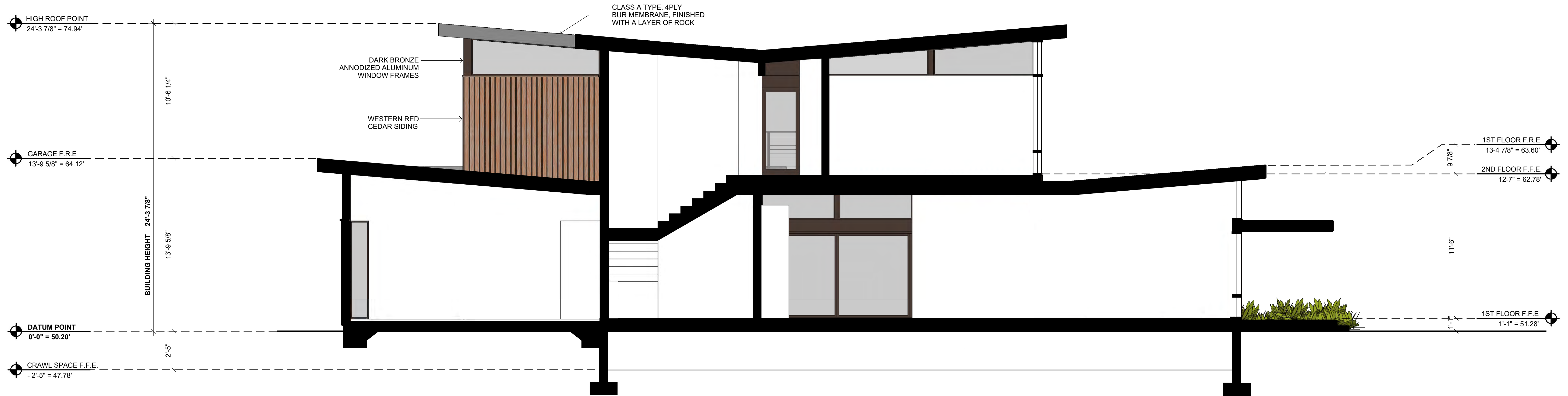
1



WEST EXTERIOR ELEVATION
SCALE: 1/4" = 1'-0"

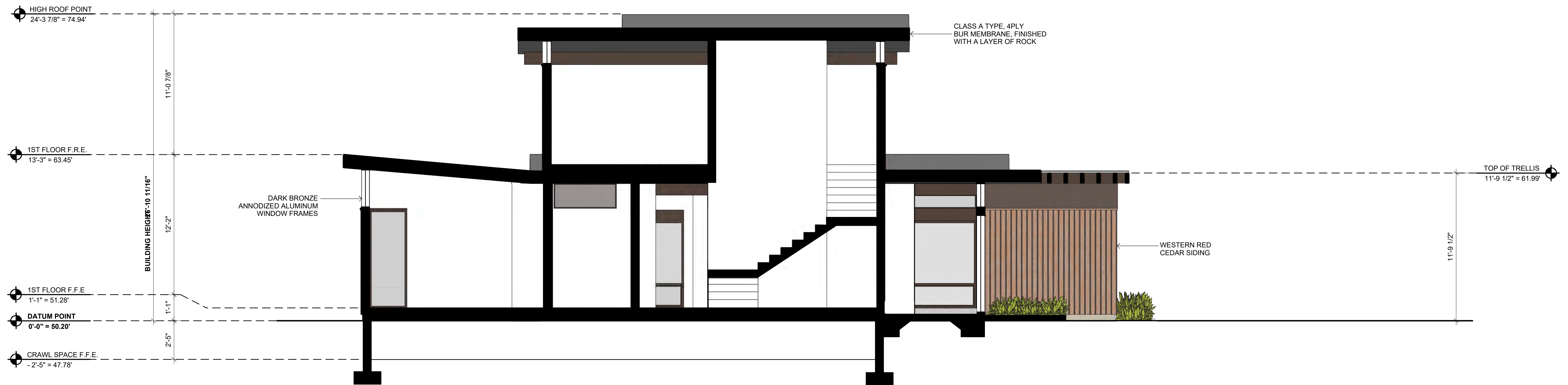
2

SEE CORRESPONDING MATERIALS AND FINISHES
LEGEND ON PAGE PR-1.0



LONG BUILDING SECTION
SCALE: 1/4" = 1'-0"

1



SHORT BUILDING SECTION
SCALE: 1/4" = 1'-0"

2

SEE CORRESPONDING MATERIALS AND FINISHES
LEGEND ON PAGE PR-1.0



199 ARBOR LANE - PROJECT SITE (VIEW TOWARDS ARBOR LANE)

NEIGHBORHOOD CONTEXT:

The homes on Arbor Lane, a cul-de-sac are one and two stories in height. The homes are a mix of similar style ranch homes built at the same time with newer second floor additions in a mix of colors and materials. All of the homes have the garages that face Arbor Lane. with varied roof lines that range from pitched to gabled. The proposed residence will be contemporary similar in materials and look and feel as some of the newer developments occurring in other neighborhoods in Moss Beach.



191 ARBOR LANE - EXISTING HOUSE (EAST SIDE) ONLY IMMEDIATE NEIGHBOR



191 ARBOR LANE - EXISTING LOT - NORTH SIDE OF PROPERTY



EXISTING ADJACENT HOUSE ON THE NORTH SIDE



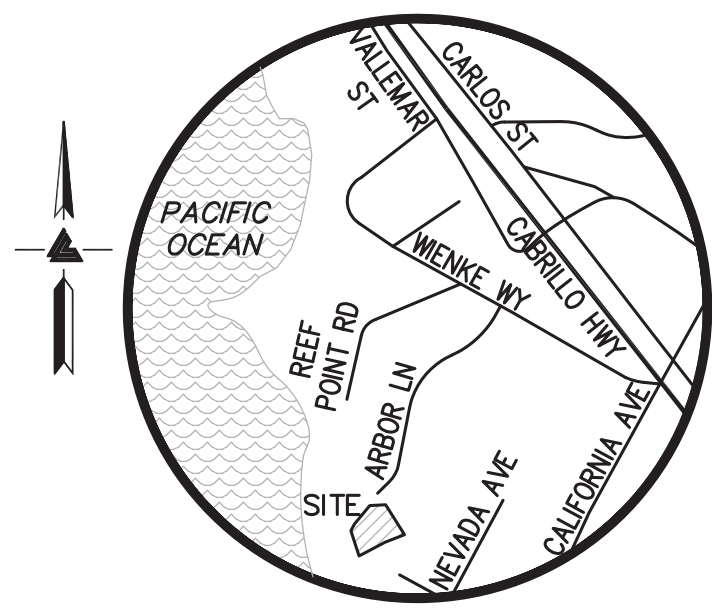
181 ARBOR LANE - EXISTING ADJACENT HOUSE ON THE SOUTH SIDE



CONTEMPORARY PROJECT IN MOSS BEACH

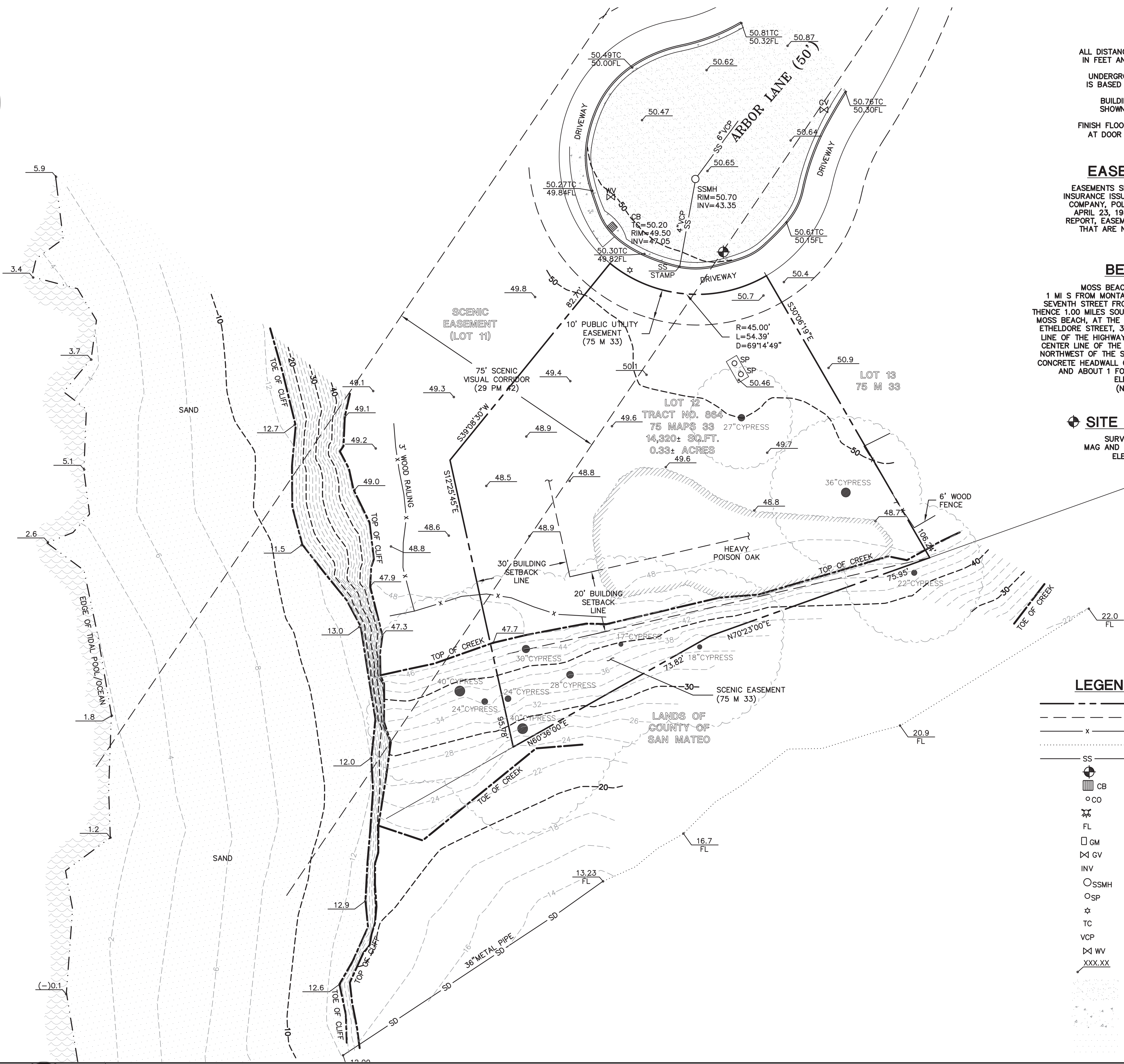
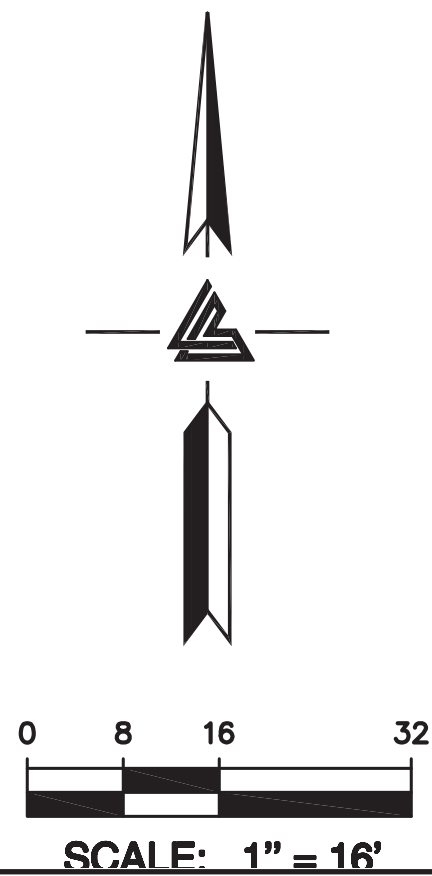


CONTEMPORARY PROJECT IN MOSS BEACH



VICINITY MAP
NO SCALE

PACIFIC
OCEAN



NOTES

ALL DISTANCES AND DIMENSIONS ARE IN FEET AND DECIMALS OF A FOOT.

UNDERGROUND UTILITY LOCATION IS BASED ON SURFACE EVIDENCE.

BUILDING FOOTPRINTS ARE SHOWN AT GROUND LEVEL.

FINISH FLOOR ELEVATIONS ARE TAKEN AT DOOR THRESHOLD (EXTERIOR)

EASEMENT NOTE

EASEMENTS SHOWN PER POLICY OF TITLE INSURANCE ISSUED BY FIRST AMERICAN TITLE COMPANY, POLICY NO. SM-327955, DATED APRIL 23, 1987. DUE TO DATE OF TITLE REPORT, EASEMENTS OF RECORD MAY EXIST THAT ARE NOT SHOWN ON THIS MAP.

BENCHMARK

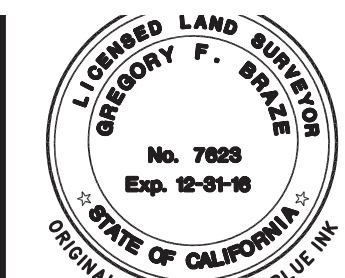
MOSS BEACH/NGS BENCHMARK 1812
1 MI S FROM MONTARA, 0.05 MILE NORTHWEST ALONG SEVENTH STREET FROM THE POST OFFICE AT MONTARA, THENCE 1.00 MILES SOUTHEAST ALONG STATE HIGHWAY 1, AT MOSS BEACH, AT THE JUNCTION OF STATE HIGHWAY 1 AND ETHELDORRE STREET, 35 FEET NORTHEAST OF THE CENTER LINE OF THE HIGHWAY, 47 1/2 FEET SOUTHEAST OF THE CENTER LINE OF THE STREET, IN THE TOP AND 1.2 FEET NORTHWEST OF THE SOUTHEAST END OF THE NORTHEAST CONCRETE HEADWALL OF A 24 INCH PIPE CULVERT 35/29, AND ABOUT 1 FOOT LOWER THAN THE HIGHWAY.
ELEVATION = 60.91
(NAVD 88 DATUM)

SITE BENCHMARK

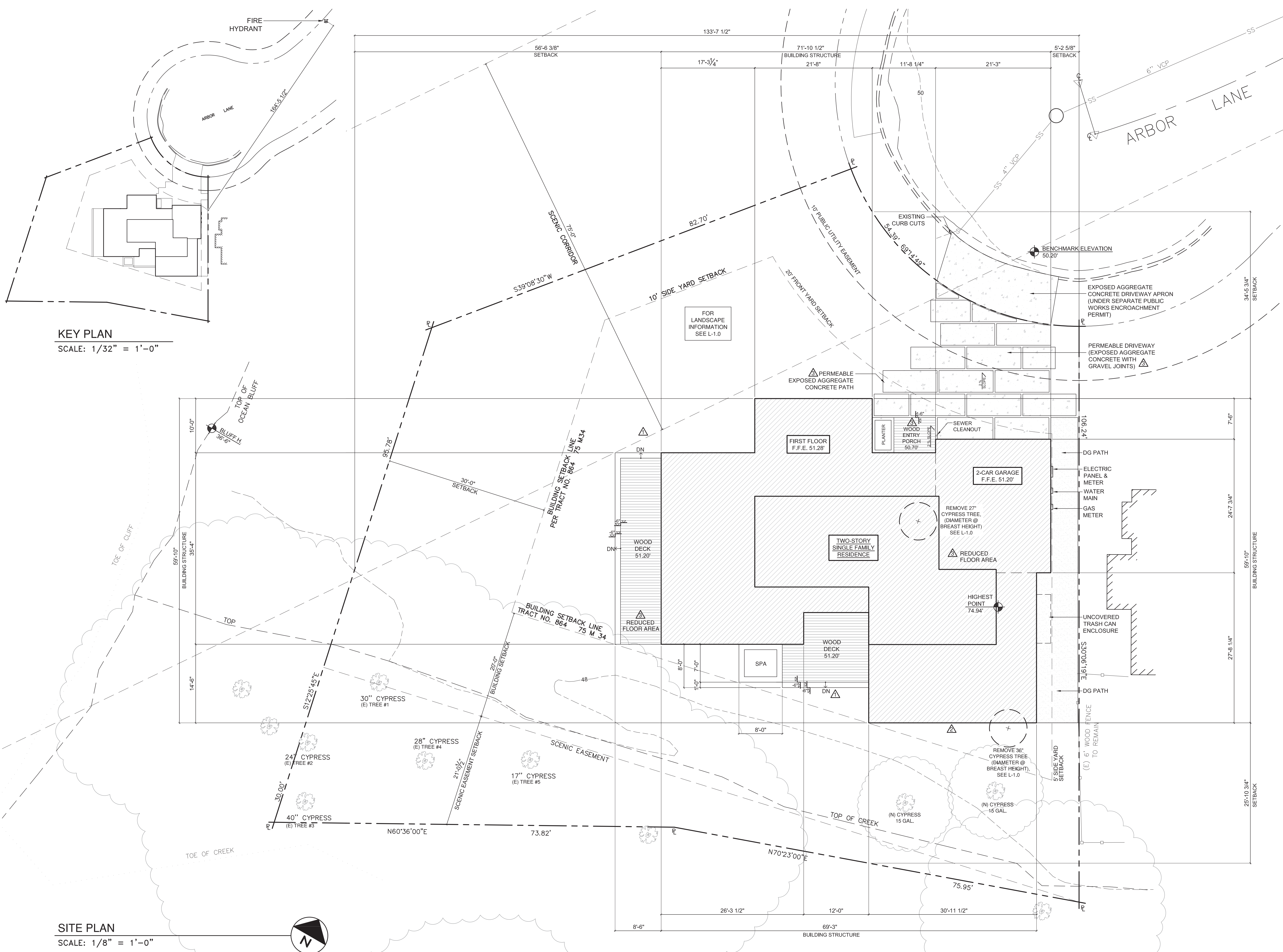
SURVEY CONTROL POINT
MAG AND SHINER SET IN ASPHALT
ELEVATION = 50.20'
(NAVD 88)

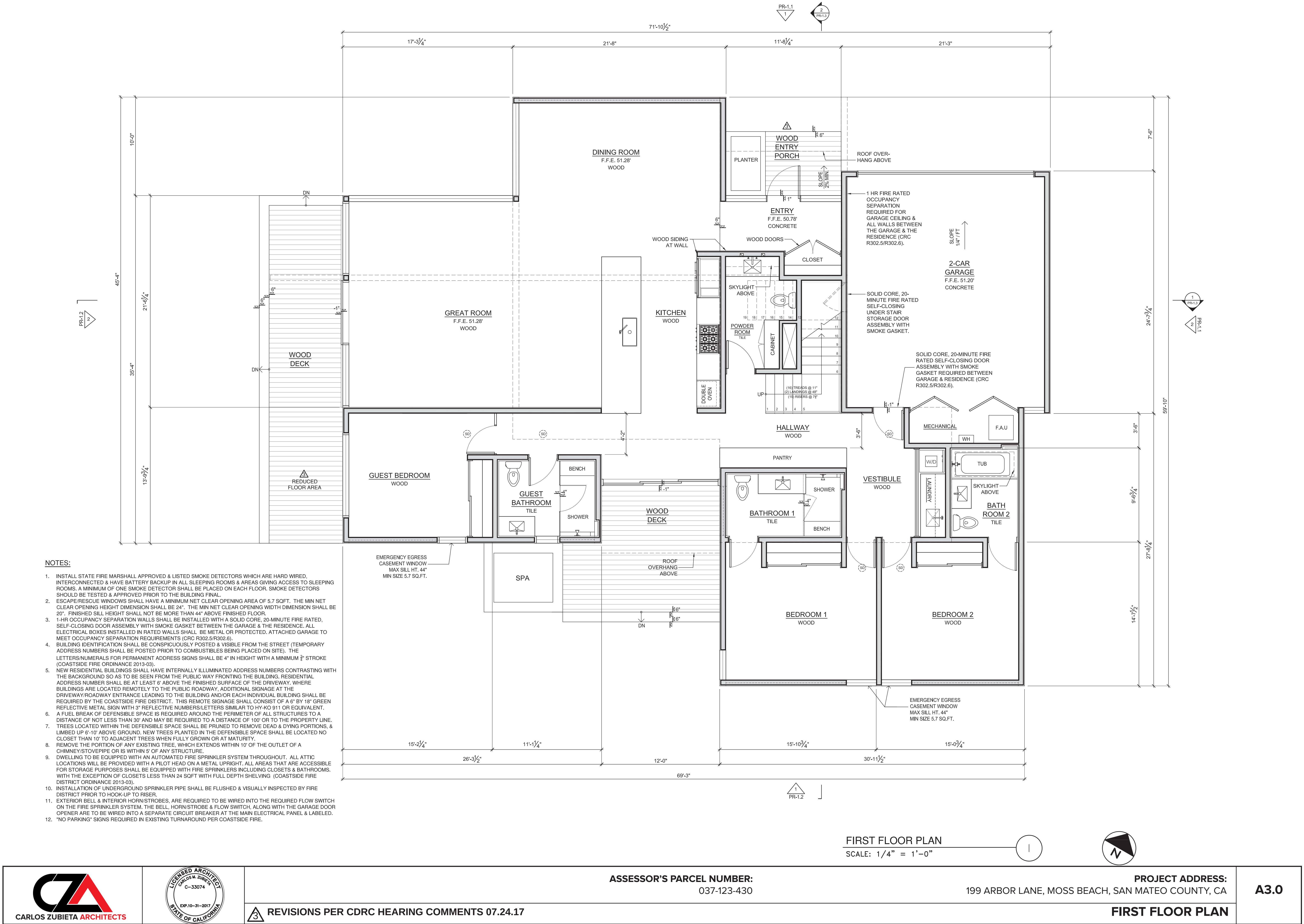
LEGEND AND NOTES

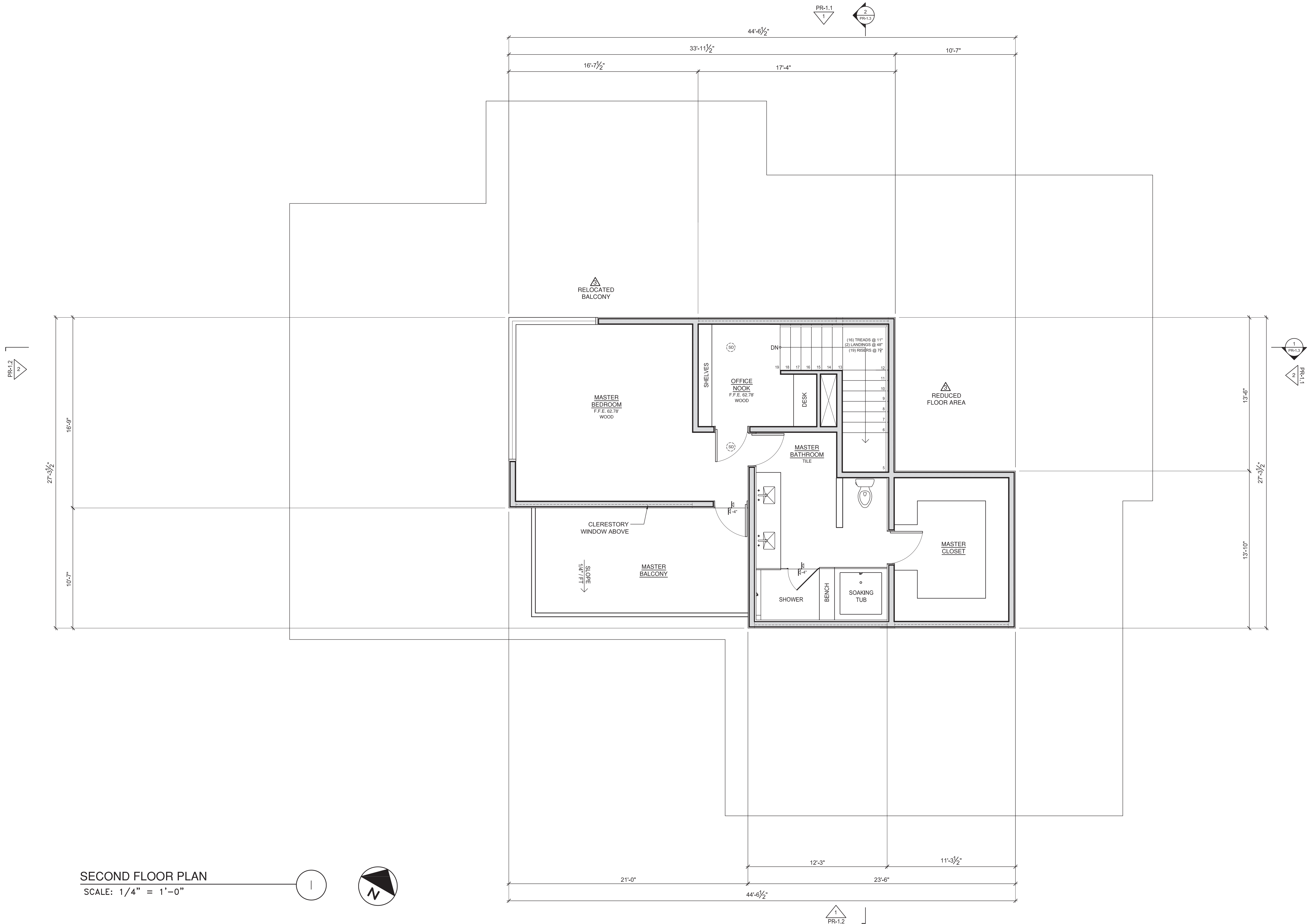
---	BOUNDARY LINE
- - -	EASEMENT
- x -	FENCE LINE
---	FLOW LINE
---	SANITARY SEWER LINE
+	BENCHMARK
CB	CATCH BASIN
CO	CLEAN-OUT BOX
FD	FIRE HYDRANT
FL	FLOW LINE
GM	GAS METER
GV	GAS VALVE
INV	INVERT
SSMH	SANITARY SEWER MANHOLE
SP	STANDPIPE
☆	STREET LIGHT
TC	TOP OF CURB
VCP	VITRIFIED CLAY PIPE
WV	WATER VALVE
XXX.XX	SPOTGRADE
ASPH	ASPHALT
CONC	CONCRETE
SAND	SAND

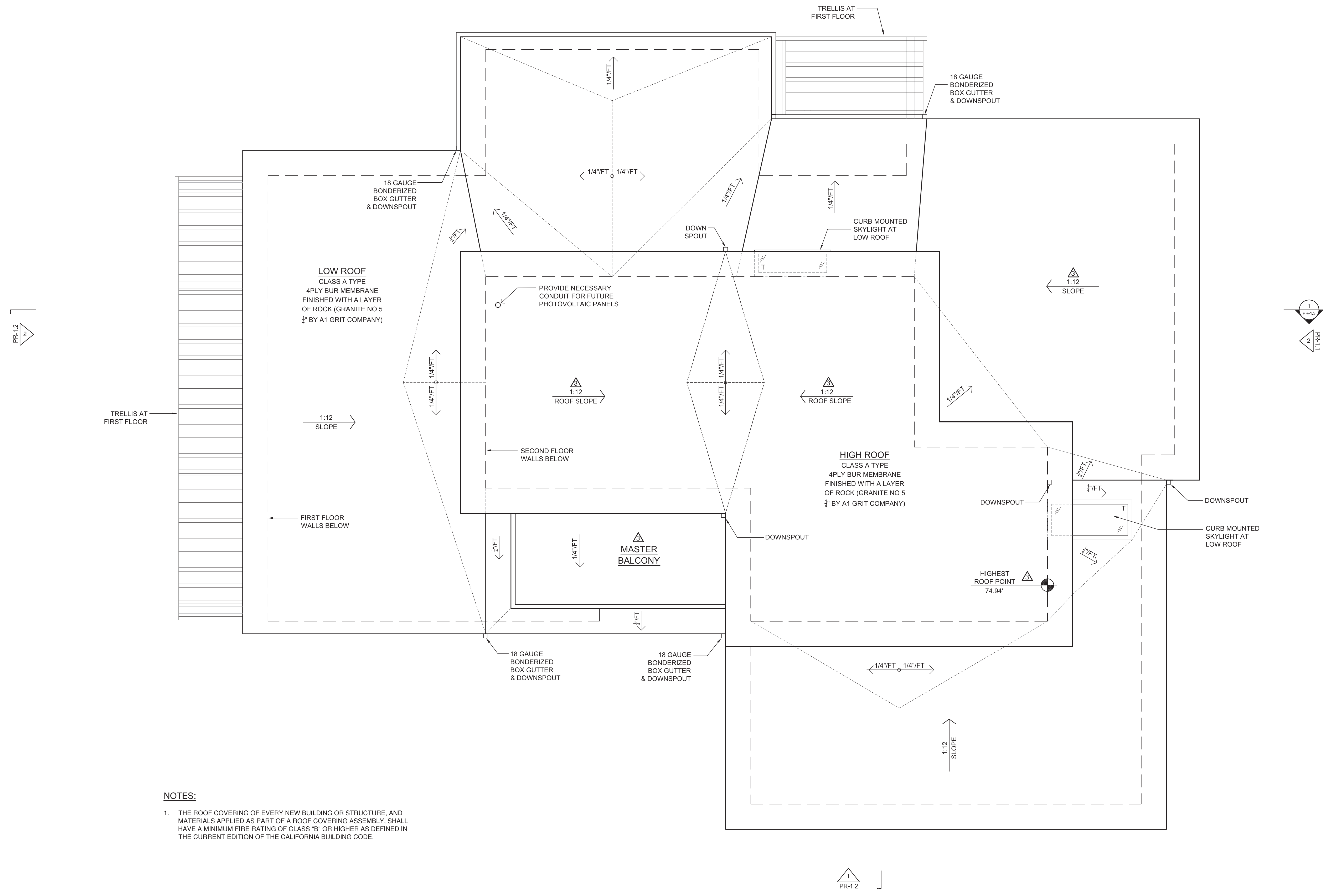


LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS • LAND SURVEYORS
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SACRAMENTO, CA 95834
(916) 966-1336
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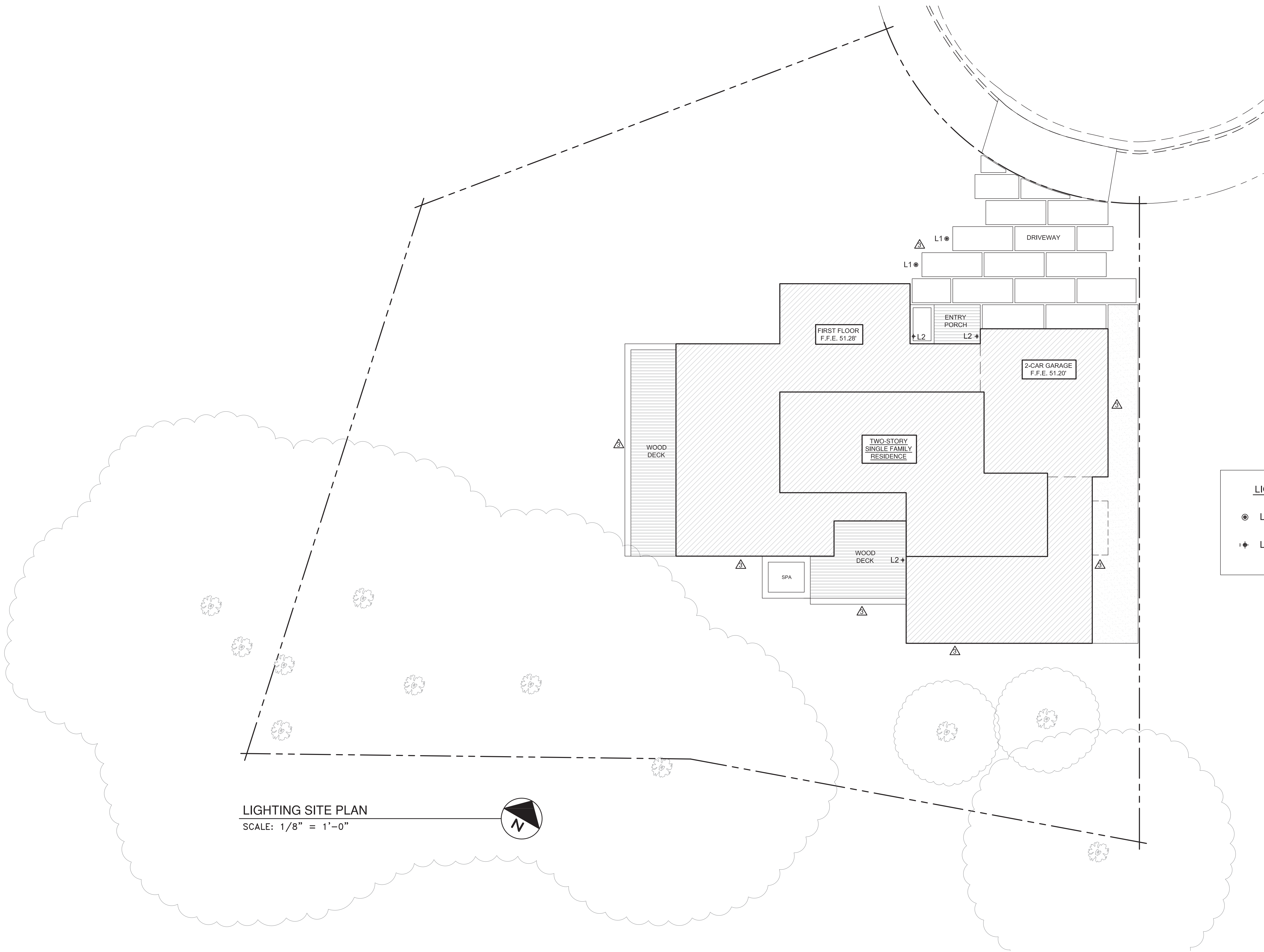
NOTES:

1. THE ROOF COVERING OF EVERY NEW BUILDING OR STRUCTURE, AND MATERIALS APPLIED AS PART OF A ROOF COVERING ASSEMBLY, SHALL HAVE A MINIMUM FIRE RATING OF CLASS "B" OR HIGHER AS DEFINED IN THE CURRENT EDITION OF THE CALIFORNIA BUILDING CODE.

ROOF PLAN

SCALE: 1/4" = 1'-0"





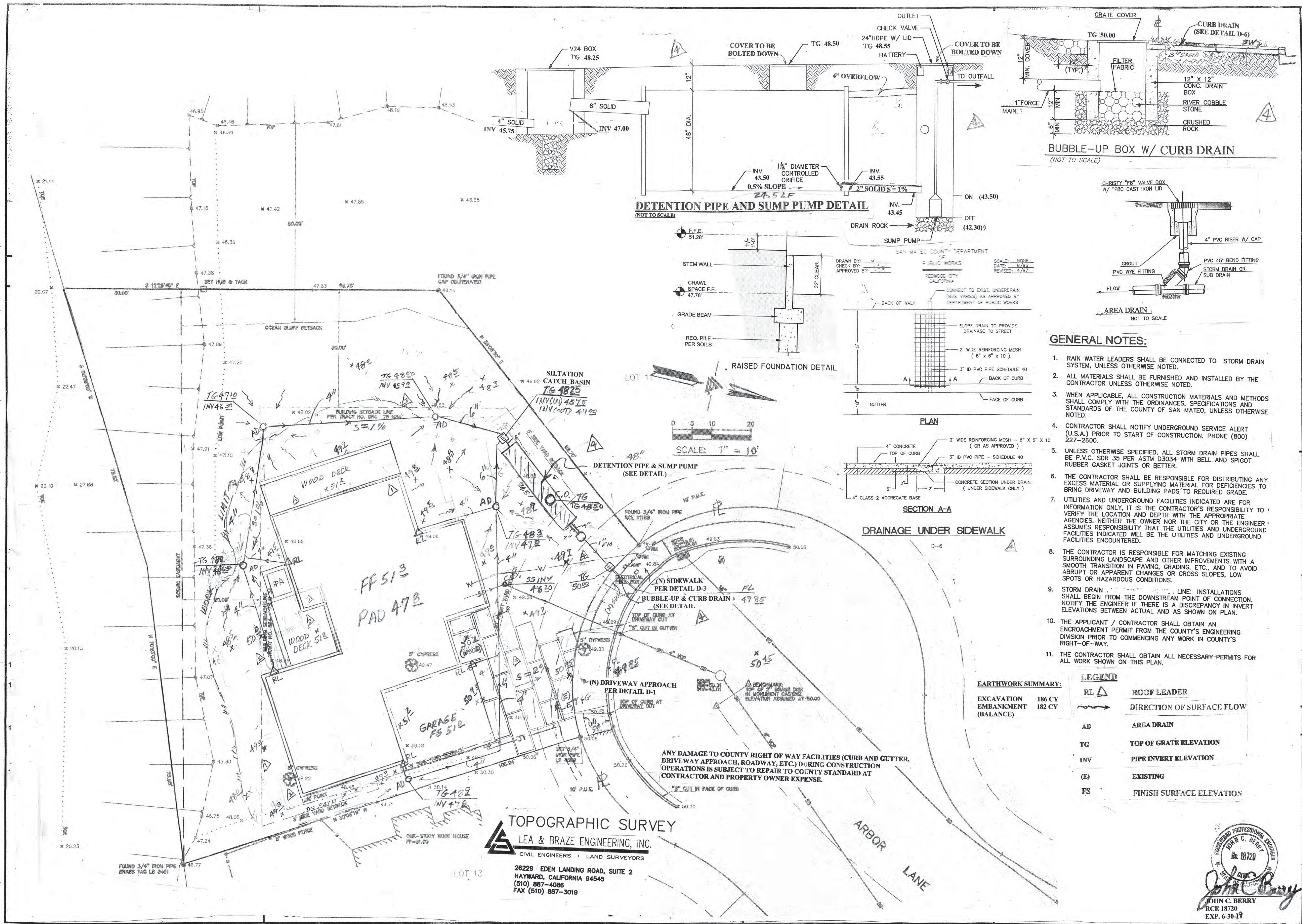
SEE CORRESPONDING LIGHTING SPECS IN SPEC BOOK PAGE 25-27

NATIVE CALIFORNIA PLANTS (TO ENHANCE SITE BIODIVERSITY)

 MONTEREY CYPRESS TREE (CUPRESSUS MACROCARPA)	 LOW BLUE BLOSSOM (CEANOTHUS THYRSIFLORUS REPENS)	 YELLOW BUSH LUPINE (LUPINUS ARBOREUS)	 CALIFORNIA HUCKLEBERRY (VACCINIUM OVATUM)	 STICKY MONKEY FLOWER (DIPLACUS AURANTIACUS)
 BEACH STRAWBERRY (FRAGARIA CHILOENSIS)	 CALIFORNIA BROME (BROMUS CARINATUS)	 CALIFORNIA FIGWORT (SCROPHULARIA CALIFORNICA)	 CALIFORNIA HIGH GRASS (DESCHAMPSIA CESPITOSA)	 COMMON GUMPLANT (GRINDELIA STRICTA VAR PLATYPHYLLA)
 WATER PARSLEY (OENANTHE SARMENTOSA)	 CALIFORNIA POPPY (ESCHSCHOLZIA CALIFORNICA)	 CALIFORNIA MANROOT (MARAH FABACEUS)	 SILVER WEED (POTENTILLA ANSERINA)	

- NOTES:
- 1- SPRINKLER SYSTEM TO BE DRIP IRRIGATION.
 - 2- ALL PLANTING UTILIZED IS NATIVE AND EXISTING IN AREA (CLIMATE ADAPTED).
 - 3- 2,400 SF OF IRRIGATED PLANTING BEDS (P-1 - P-8) WITH NATIVE PLANTING.
 - 4- AREAS DISTURBED BY CONSTRUCTION ACTIVITY OUTSIDE OF PLANTING BEDS WILL BE RESEED WITH NATIVE GROUND COVER AS SPECIFIED.
 - 5- COMPOST INCORPORATED IN PLANTING BEDS P-1 THROUGH P-8, AT A RATE OF AT LEAST 4 CUBIC YARDS PER 1,000 SF TO A DEPTH OF 6" INTO LANDSCAPE AREA.
 - 6- A MIN 3" LAYER OF MULCH SHOULD BE APPLIED ON ALL EXPOSED SOIL SURFACES OF PLANTING AREAS IN PLANTING BEDS P-1 THROUGH P-8.
 - 7- IRRIGATION CONTROLLERS USE EVAPOTRANSPIRATION OR SOIL MOISTURE DATA & UTILIZE A RAIN SENSOR.
 - 8- IRRIGATION CONTROLLER PROGRAM DATA WILL NOT BE LOST DUE TO AN INTERRUPTION IN PRIMARY POWER SOURCE.
 - 9- AREAS LESS THAN 10' IN ANY DIRECTION UTILIZE SUB-SURFACE OR DRIP IRRIGATION THAT PREVENTS OVERSPRAY OR RUN OFF.





- GENERAL NOTES:**
1. RAIN WATER LEADERS SHALL BE CONNECTED TO STORM DRAIN SYSTEM, UNLESS OTHERWISE NOTED.
 2. ALL MATERIALS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
 3. WHEN APPLICABLE, ALL CONSTRUCTION MATERIALS AND METHODS SHALL COMPLY WITH THE ORDINANCES, SPECIFICATIONS AND STANDARDS OF THE COUNTY OF SAN MATEO, UNLESS OTHERWISE NOTED.
 4. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (U.S.A.) PRIOR TO START OF CONSTRUCTION. PHONE (800) 227-2600.
 5. UNLESS OTHERWISE SPECIFIED, ALL STORM DRAIN PIPES SHALL BE P.V.C. SDR 35 PER ASTM D3034 WITH BELL AND SPIGOT RUBBER GASKET JOINTS OR BETTER.
 6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISTRIBUTING ANY EXCESS MATERIAL OR SUPPLYING MATERIAL FOR DEFICIENCIES TO BRING DRIVEWAY AND BUILDING PADS TO REQUIRED GRADE.
 7. UTILITIES AND UNDERGROUND FACILITIES INDICATED ARE FOR INFORMATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND DEPTH WITH THE APPROPRIATE AGENCIES. NEITHER THE OWNER NOR THE CITY OR THE ENGINEER ASSUMES RESPONSIBILITY THAT THE UTILITIES AND UNDERGROUND FACILITIES INDICATED WILL BE THE UTILITIES AND UNDERGROUND FACILITIES ENCOUNTERED.
 8. THE CONTRACTOR IS RESPONSIBLE FOR MATCHING EXISTING SURROUNDING LANDSCAPE AND OTHER IMPROVEMENTS WITH A SMOOTH TRANSITION IN PAVING, GRADING, ETC., AND TO AVOID ABRUPT OR APPARENT CHANGES OR CROSS SLOPES, LOW SPOTS OR HAZARDOUS CONDITIONS.
 9. STORM DRAIN LINE: INSTALLATIONS SHALL BEGIN FROM THE DOWNSTREAM POINT OF CONNECTION. NOTIFY THE ENGINEER IF THERE IS A DISCREPANCY IN INVERT ELEVATIONS BETWEEN ACTUAL AND AS SHOWN ON PLAN.
 10. THE APPLICANT / CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT FROM THE COUNTY'S ENGINEERING DIVISION PRIOR TO COMMENCING ANY WORK IN COUNTY'S RIGHT-OF-WAY.
 11. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR ALL WORK SHOWN ON THIS PLAN.

EARTHWORK SUMMARY:

EXCAVATION	186 CY
EMBANKMENT	182 CY
(BALANCE)	

LEGEND

RL	ROOF LEADER
→	DIRECTION OF SURFACE FLOW
AD	AREA DRAIN
TG	TOP OF GRATE ELEVATION
INV	PIPE INVERT ELEVATION
(E)	EXISTING
FS	FINISH SURFACE ELEVATION

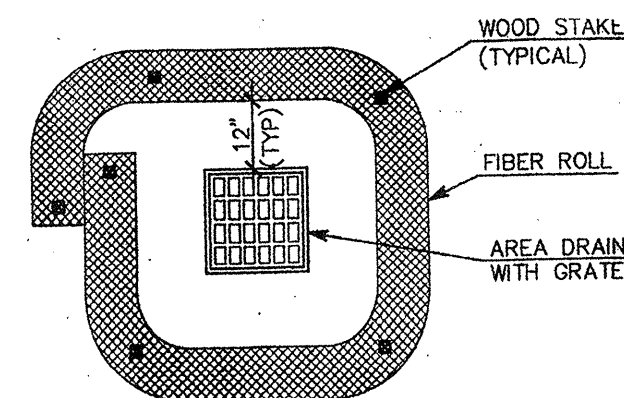
TOPOGRAPHIC SURVEY
LEA & BRAZE ENGINEERING, INC.
 CIVIL ENGINEERS • LAND SURVEYORS
 26229 EDEN LANDING ROAD, SUITE 2
 HAYWARD, CALIFORNIA 94545
 (510) 887-4086
 FAX (510) 887-3019

REGISTERED PROFESSIONAL ENGINEER
 JOHN C. BERRY
 No. 18720
 RCE 18720
 EXP. 6-30-19

BERRY & ASSOCIATES
 1733 WOODSIDE ROAD, SUITE 335
 REDWOOD CITY, CA 94061
 PHONE: 650/368-0750 FAX: 650/368-1810

SITE GRADING, DRAINAGE & UTILITY PLAN
199 ARBOR LANE
MOSS BEACH, CA

DRAWN BY: JCB
 DESIGNED BY:
 CHECKED BY:
 SCALE: 1"=10'
 DATE: 10/12/16
 DRAWING NO.: 3010
 SHEET: C-1
 1 OF 1



DRAIN INLET PROTECTION DETAIL

JOHN C. BERRY
BERRY AND ASSOCIATES
1733 WOODSIDE ROAD #33
REDWOOD CITY, CA 94061
PHONE: (650) 400-9003

Prior to issuance of the grading permit "hard card," the property owner shall submit a schedule of all grading operations to the Current Planning Section, subject to review and approval by the Current Planning Section. Along with the "hard card" application, the applicant shall submit a letter to the Current Planning Section, at least two (2) weeks prior to commencement of grading, stating the date when grading operations will begin, anticipated end date of grading operations, including dates of revegetation, and estimated date of establishment of newly planted vegetation. If the schedule of grading operations calls for the grading to be completed in one grading season, then the winterizing plan shall be considered a contingent plan to be implemented if work falls behind schedule.

1. THE INTENT OF THE EROSION CONTROL PLAN IS TO MINIMIZE ANY WATER QUALITY IMPACTS IN THE FORM OF SEDIMENT POLLUTION TO MAIN CREEK & TRIBUTARIES.
2. A CONSTRUCTION ENTRANCE WILL BE INSTALLED PRIOR TO GOING ON LOCATION OF THE CONSTRUCTION. THE ENTRANCE MAY BE ADJUSTED BY THE CONTRACTOR TO FACILITATE TRUCKING OPERATIONS. ALL CONSTRUCTION TRAFFIC ENTERING THE PAVED ROAD MUST MAINTAIN THE CONSTRUCTION ENTRANCE EXISTENCE. THE ROAD SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR REMOVAL OF SEDIMENT ONTO THE ADJACENT RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITION DEMAND, AND REPAIR OF ANY MEASURES USED TO SEDIMENT.
3. WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN. THE WASHING SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH THE USE OF SAND BAGS, GRAVEL, STORMS OR OTHER APPROVED METHODS.
4. THE EROSION AND SEDIMENT CONTROL MEASURES WILL BE OPERABLE ALL YEAR LONG, UNTIL GRADING AND INSTALLATION OF STORM DRAINAGE AND PERMANENT EROSION AND SEDIMENT CONTROL FACILITIES WILL BE COMPLETED. THIS SHALL OCCUR BETWEEN OCTOBER 1 AND APRIL 15 UNLESS AUTHORIZED BY THE CITY REPRESENTATIVE.
5. DURING THE RAINY SEASON, ALL PAVED AREAS WILL BE KEPT CLEAR OF EARTH MATERIALS AND DEBRIS. THE SITE WILL BE MAINTAINED SO THAT A MINIMUM OF SEDIMENT-LADEN RUNOFF ENTERS THE STORM DRAINAGE SYSTEM.
6. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL FIELD MANUAL OF THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, 4TH EDITION, DATED AUGUST 2002.
7. AREAS DESIGNATED FOR PARKING OF CONSTRUCTION VEHICLES SHALL USE AGGREGATE OVER GEO-TEXTILE FABRIC.
8. LOCATE PORTABLE TOILETS AWAY FROM SURFACE WATER LOCATIONS AND STORM DRAIN INLETS.
9. PERFORM CLEARING AND EARTH-MOVING ACTIVITIES ONLY DURING DRY WEATHER. MEASURES TO ENSURE ADEQUATE EROSION AND SEDIMENT CONTROL SHALL BE INSTALLED PRIOR TO EARTH-MOVING ACTIVITIES AND CONSTRUCTION.
10. MEASURES TO ENSURE ADEQUATE EROSION AND SEDIMENT CONTROL ARE REQUIRED YEAR-ROUND. STABILIZE ALL DENuded AREAS AND MAINTAIN EROSION CONTROL MEASURES CONTINUOUSLY BETWEEN OCTOBER 1 AND APRIL 30.
11. STORE, HANDLE, AND DISPOSE OF CONSTRUCTION MATERIALS AND WASTES PROPERLY, SO AS TO PREVENT THEIR CONTACT WITH STORMWATER.
12. CONTROL AND PREVENT THE DISCHARGE OF ALL POTENTIAL POLLUTANTS, INCLUDING PAVEMENT CUTTING WASTES, PAINTS, CONCRETE, PETROLEUM PRODUCTS, CHEMICALS, WASH WATER OR SEDIMENTS, AND NON-STORMWATER DISCHARGES TO STORM DRAINS AND WATERCOURSES.
13. USE SEDIMENT CONTROLS OR FILTRATION TO REMOVE SEDIMENT WHEN DEWATERING SITE AND OBTAIN REGIONAL WATER QUALITY CONTROL BOARD (RWQCB) PERMIT(S) AS NECESSARY.
14. AVOID CLEANING, FUELING, OR MAINTAINING VEHICLES ON-SITE, EXCEPT IN A DESIGNATED AREA WHERE WASH WATER IS CONTAINED AND TREATED.
15. LIMIT AND TIME APPLICATIONS OF PESTICIDES AND FERTILIZERS TO PREVENT POLLUTED RUNOFF.
16. LIMIT CONSTRUCTION ACCESS ROUTES TO STABILIZED, DESIGNATED ACCESS POINTS.
17. AVOID TRACKING DIRT OR OTHER MATERIALS OFF-SITE; CLEAN OFF-SITE PAVED AREAS AND SIDEWALKS USING DRY SWEEPING METHODS.
18. TRAIN AND PROVIDE INSTRUCTION TO ALL EMPLOYEES AND SUBCONTRACTORS REGARDING THE WATERSHED PROTECTION MAINTENANCE STANDARDS AND CONSTRUCTION BEST MANAGEMENT PRACTICES.
19. PLACEMENT OF EROSION MATERIALS AT THESE LOCATIONS IS REQUIRED ON WEEKENDS AND DURING RAIN EVENTS AS SHOWN ON PLAN.
20. THE AREAS DELINEATED ON THE PLANS FOR PARKING, GRUBBING, STORAGE ETC., SHALL NOT BE ENLARGED OR RUN OVER.
21. CONSTRUCTION SITES ARE REQUIRED TO HAVE EROSION CONTROL MATERIALS ON-SITE DURING THE "OFF-SEASON."
22. DUST CONTROL IS REQUIRED YEAR-ROUND.
23. EROSION CONTROL MATERIALS SHALL BE STORED ON-SITE.
24. USE OF PLASTIC SHEETING BETWEEN OCTOBER 1ST AND APRIL 30TH IS NOT ACCEPTABLE, UNLESS FOR USE ON STOCKPILES WHERE THE STOCKPILE IS ALSO PROTECTED WITH FIBER ROLLS CONTAINING THE BASE OF THE STOCKPILE.
25. THE TREE PROTECTION SHALL BE IN PLACE BEFORE ANY GRADING, EXCAVATING OR GRUBBING IS STARTED.
26. CONSTRUCTION DURATION IS ANTICIPATED TO BE APPROXIMATELY 12 MONTHS.

(DESIGNING APRIL 30, 2017)



BIOWATTLES
STABILIZED CONSTRUCTION
ENTRANCE
INLET PROTECTION

JOHN C. BERRY
RCE 18720
EXP. 6-30-17

**199 ARBOR LANE
MOSS BEACH, CA**

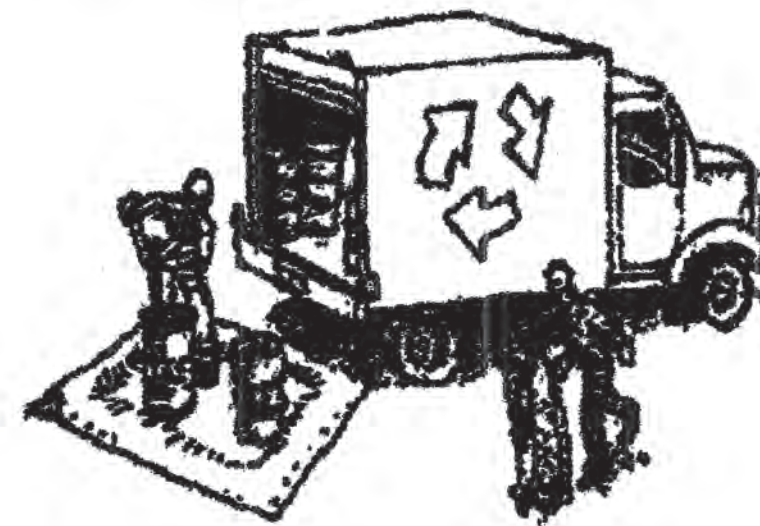
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C-2

Construction Best Management Practices (BMPs)

Construction projects are required to implement the stormwater best management practices (BMP) on this page, as they apply to your project, all year long.

Materials & Waste Management



Non-Hazardous Materials

- ☐ Berm and cover stockpiles of sand, dirt or other construction material with tarps when rain is forecast or if not actively being used within 14 days.
- ☐ Use (but don't overuse) reclaimed water for dust control.

Hazardous Materials

- ☐ Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, county, state and federal regulations.
- ☐ Store hazardous materials and wastes in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day or during wet weather or when rain is forecast.
- ☐ Follow manufacturer's application instructions for hazardous materials and be careful not to use more than necessary. Do not apply chemicals outdoors when rain is forecast within 24 hours.
- ☐ Arrange for appropriate disposal of all hazardous wastes.

Waste Management

- ☐ Cover waste disposal containers securely with tarps at the end of every work day and during wet weather.
- ☐ Check waste disposal containers frequently for leaks and to make sure they are not overfilled. Never hose down a dumpster on the construction site.
- ☐ Clean or replace portable toilets, and inspect them frequently for leaks and spills.
- ☐ Dispose of all wastes and debris properly. Recycle materials and wastes that can be recycled (such as asphalt, concrete, aggregate base materials, wood, gyp board, pipe, etc.)
- ☐ Dispose of liquid residues from paints, thinners, solvents, glues, and cleaning fluids as hazardous waste.

Construction Entrances and Perimeter

- ☐ Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from site and tracking off site.
- ☐ Sweep or vacuum any street tracking immediately and secure sediment source to prevent further tracking. Never hose down streets to clean up tracking.

Equipment Management & Spill Control



Maintenance and Parking

- ☐ Designate an area, fitted with appropriate BMPs, for vehicle and equipment parking and storage.
- ☐ Perform major maintenance, repair jobs, and vehicle and equipment washing off site.
- ☐ If refueling or vehicle maintenance must be done onsite, work in a bermed area away from storm drains and over a drip pan or drop cloths big enough to collect fluids. Recycle or dispose of fluids as hazardous waste.
- ☐ If vehicle or equipment cleaning must be done onsite, clean with water only in a bermed area that will not allow rinse water to run into gutters, streets, storm drains, or surface waters.
- ☐ Do not clean vehicle or equipment onsite using soaps, solvents, degreasers, or steam cleaning equipment.

Spill Prevention and Control

- ☐ Keep spill cleanup materials (e.g., rags, absorbents and cat litter) available at the construction site at all times.
- ☐ Inspect vehicles and equipment frequently for and repair leaks promptly. Use drip pans to catch leaks until repairs are made.
- ☐ Clean up spills or leaks immediately and dispose of cleanup materials properly.
- ☐ Do not hose down surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/or rags).
- ☐ Sweep up spilled dry materials immediately. Do not try to wash them away with water, or bury them.
- ☐ Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
- ☐ Report significant spills immediately. You are required by law to report all significant releases of hazardous materials, including oil. To report a spill: 1) Dial 911 or your local emergency response number. 2) Call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours).

Earthmoving



- ☐ Schedule grading and excavation work during dry weather.
- ☐ Stabilize all denuded areas, install and maintain temporary erosion controls (such as erosion control fabric or bonded fiber matrix) until vegetation is established.
- ☐ Remove existing vegetation only when absolutely necessary, and seed or plant vegetation for erosion control on slopes or where construction is not immediately planned.
- ☐ Prevent sediment from migrating offsite and protect storm drain inlets, gutters, ditches, and drainage courses by installing and maintaining appropriate BMPs, such as fiber rolls, silt fences, sediment basins, gravel bags, berms, etc.
- ☐ Keep excavated soil on site and transfer it to dump trucks on site, not in the streets.

Contaminated Soils

- ☐ If any of the following conditions are observed, test for contamination and contact the Regional Water Quality Control Board:
 - Unusual soil conditions, discoloration, or odor.
 - Abandoned underground tanks.
 - Abandoned wells
 - Buried barrels, debris, or trash.

Paving/Asphalt Work

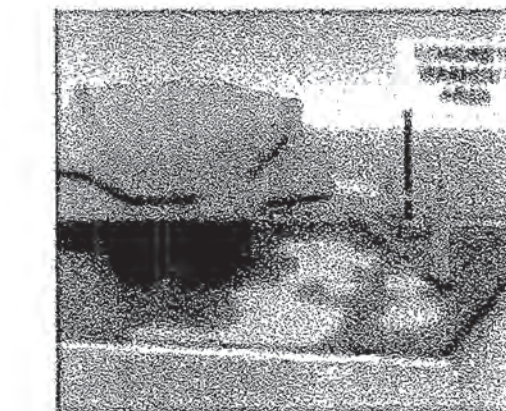


- ☐ Avoid paving and seal coating in wet weather or when rain is forecast, to prevent materials that have not cured from contacting stormwater runoff.
- ☐ Cover storm drain inlets and manholes when applying seal coat, tack coat, slurry seal, fog seal, etc.
- ☐ Collect and recycle or appropriately dispose of excess abrasive gravel or sand. Do NOT sweep or wash it into gutters.
- ☐ Do not use water to wash down fresh asphalt concrete pavement.

Sawcutting & Asphalt/Concrete Removal

- ☐ Protect nearby storm drain inlets when saw cutting. Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system.
- ☐ Shovel, absorb, or vacuum saw-cut slurry and dispose of all waste as soon as you are finished in one location or at the end of each work day (whichever is sooner).
- ☐ If sawcut slurry enters a catch basin, clean it up immediately.

Concrete, Grout & Mortar Application



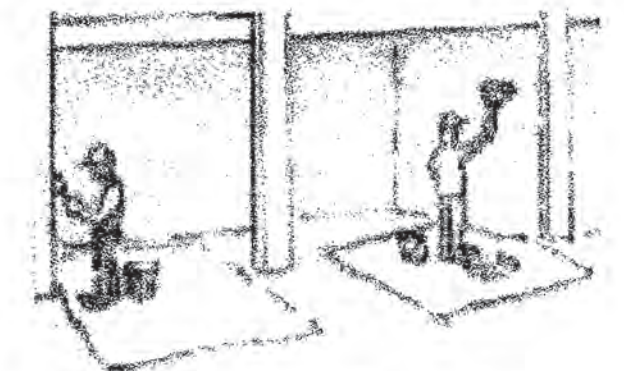
- ☐ Store concrete, grout, and mortar away from storm drains or waterways, and on pallets under cover to protect them from rain, runoff, and wind.
- ☐ Wash out concrete equipment/trucks offsite or in a designated washout area, where the water will flow into a temporary waste pit, and in a manner that will prevent leaching into the underlying soil or onto surrounding areas. Let concrete harden and dispose of as garbage.
- ☐ When washing exposed aggregate, prevent washwater from entering storm drains. Block any inlets and vacuum gutters, hose washwater onto dirt areas, or drain onto a bermed surface to be pumped and disposed of properly.

Landscaping



- ☐ Protect stockpiled landscaping materials from wind and rain by storing them under tarps all year-round.
- ☐ Stack bagged material on pallets and under cover.
- ☐ Discontinue application of any erodible landscape material within 2 days before a forecast rain event or during wet weather.

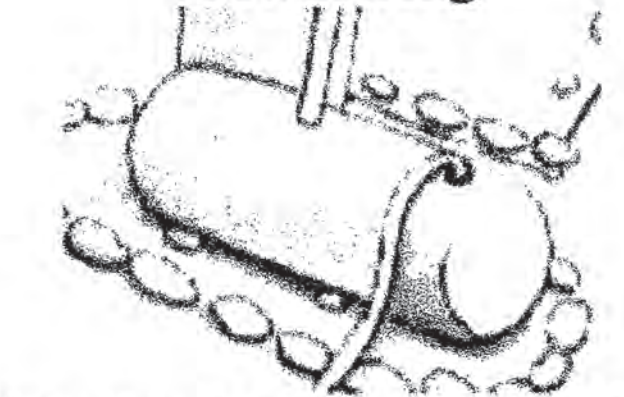
Painting & Paint Removal



Painting Cleanup and Removal

- ☐ Never clean brushes or rinse paint containers into a street, gutter, storm drain, or stream.
- ☐ For water-based paints, paint out brushes to the extent possible, and rinse into a drain that goes to the sanitary sewer. Never pour paint down a storm drain.
- ☐ For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of excess liquids as hazardous waste.
- ☐ Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.
- ☐ Chemical paint stripping residue and chips and dust from marine paints or paints containing lead, mercury, or tributyltin must be disposed of as hazardous waste. Lead based paint removal requires a state-certified contractor.

Dewatering



- ☐ Discharges of groundwater or captured runoff from dewatering operations must be properly managed and disposed. When possible send dewatering discharge to landscaped area or sanitary sewer. If discharging to the sanitary sewer call your local wastewater treatment plant.
- ☐ Divert run-on water from offsite away from all disturbed areas.
- ☐ When dewatering, notify and obtain approval from the local municipality before discharging water to a street gutter or storm drain. Filtration or diversion through a basin, tank, or sediment trap may be required.
- ☐ In areas of known or suspected contamination, call your local agency to determine whether the ground water must be tested. Pumped groundwater may need to be collected and hauled off-site for treatment and proper disposal.

Storm drain polluters may be liable for fines of up to \$10,000 per day!



County of San Mateo - Planning and Building Department

ATTACHMENT E

July 24, 2017

Carlos Zubieta
1725-A Abbot Kinney Boulevard
Venice, CA 90291

Dear Mr. Zubieta:

SUBJECT: Coastside Design Review Recommendation
Arbor Lane, Moss Beach
APN 037-123-430; County File No. PLN 2016-00444

At its meeting on July 13, 2017, the San Mateo County Coastside Design Review Committee (CDRC) considered your application for a design review recommendation to allow construction of a new 3,519 sq. ft. single-family residence with an attached 468 sq. ft. two-car garage, on a 14,320 sq. ft. legal parcel (recorded subdivision (X6D-448), as part of an associated public hearing-level Coastal Development Permit (CDP) and Grading Permit for 186 cubic yards (c.y.) of excavation and 182 c.y. of fill. Two significant trees are proposed for removal. The CDP is appealable to the California Coastal Commission.

The CDRC was unable to make the findings for a design review recommendation of approval based on certain design deficiencies. In order to resolve these deficiencies in the project's design, a more thorough review of the "Standards for Design for One-Family and Two-Family Residential Development in the Midcoast" manual is required. As such, requirements from the CDRC for further project redesign are as follows:

1. Section 6565.20(B)2 NEIGHBORHOOD CHARACTER: The proposed project is sited within a neighborhood that consists of similarly-sized one- and two-story single-family houses under 2,800 square feet. However, the proposed house is approximately 43% larger than the largest house in the immediate area. The size of the house should be reduced to a size compatible with surrounding houses, as by stepping the project down a hillside or further excavation would not mitigate the scale of the project.
2. Section 6565.20(C) SITE PLANNING AND STRUCTURE PLACEMENT 1c. Streams and Other Drainage Features: Recent area erosion is cause for concern for the planned structure on the site. All assessments over 12 months old should be updated to reflect current conditions to ensure longevity of the structure. The proposed placement of the building on the site does not adequately avoid stream and natural drainage features and protect them from erosion or siltation. Standards require avoiding structures near streams or natural drainage features and altering the site in a way that would cause significant erosion. The CDRC suggests further improvement of local storm drainage systems and protection of streams and drainage features from erosion and siltation by improving water retention and drainage on-site.



Planning staff recommends consulting the County Department of Public Works for any recommendations.

3. Section 6565.20(C)1e RELATIONSHIP TO OPEN SPACE: The neighborhood's proximity to designated open space is a defining factor of the neighborhood's character. Special attention should be paid to those transition or buffer areas where residential and open space land uses meet. The size and placement of the structure at the view corridor boundary does not meet this standard. The CDRC recommends that homeowner association view corridor requirements should be applicable to the build out on this site.
4. Section 6565.20(D)1b NEIGHBORHOOD SCALE: A house should appear to be proportional or "in scale" with other houses in the neighborhood. New houses should be of a consistent scale with the homes in the neighborhood through use of compatible building dimensions. The size of the proposed project is out of proportion to other houses in the neighborhood. Total building floor area is approximately 4,000 square feet. Comparable neighboring homes average 2,500 square feet.
5. Section 6565.20(F) LANDSCAPING, PAVED AREAS, FENCES LIGHTING AND NOISE: While the appearance of new residential structures is of primary importance, development should be designed to prevent adverse impacts to neighboring properties.
 1. Landscaping: Proposed landscaping should harmonize with existing vegetation on-site. A smooth transition between development and adjacent open areas should be maintained through plant materials that are native or appropriate to the area.
 2. Paved Areas: Hardscape areas should be permeable.
 3. Lighting: Exterior lighting can affect distant views from scenic corridors. The proposal includes downward-directed exterior lighting that is architecturally integrated with the house's design, style, material and colors, and is designed and located so light and glare are directed away from neighbors and confined to the site. Further minimize light and glare as viewed from scenic corridors and public view corridors and locate so light is directed away from neighbors.

Recommended Changes

1. Reduce the size of the structure to appear consistent with the size and scale of other houses in the neighborhood.
2. Landscaping:
 - a. Applicant should limit plantings in the view easement (front yard) to Coastal Prairie type, maximum 2 feet tall (grasses, beach strawberry, etc.).
 - b. Replace Drosanthemum (iceplant) with native iceplant or another California native species.

- c. Consider replacing Purple Cudweed and Cotton Batting Plant with other California natives. Both are natives, but they appear "weedy."
 - d. Replace Vaccinium Parvifolium and Rhododendron Occidentale with plants that will survive in an exposed marine environment.
 - e. Restrict California Blackberry to the rear of the property (it will eventually spread to a much larger area).
 - f. Replace Stinging Nettle with another California native. If it moves into the open space next door, it can negatively impact visitors to the open space.
 - g. Refer to the County Parks Department for recommendations on landscaping appropriate for project site.
3. Reduce the number of tree replacement based on the feasibility of the site.
 4. Remove proposed trees at street side from landscape plan to preserve view corridors and prevent canopy from encroaching on the neighboring property.
 5. Reduce the volume and improve the quality of runoff into the nearby creek by replacing all solid concrete in landscaped areas which drain to the creek with permeable material (pavers or grasscrete).
 6. Replace post landscape path lights with low level, at ground, recessed lighting. Reduce the number of exterior lighting fixtures to: one at the front door and entry points and remove both lights on the east side of the building. Consider alternative to flex tube lights to low level, recessed deck lighting in view corridors.

Suggestions

1. New environmental and geotechnical studies are recommended by the CDRC for the associated CDP due to outdated information exceeding one year and recent ground movement at and around the site. The Midcoast Community Council has also recommended a coastal erosion study for assessment of hazard exposure (see letter to Planning dated November 9, 2016).
2. Consider low level, recessed deck lighting instead of flex tube lights in view corridors.

As such, you were presented with the following available options at the end of the CDRC's deliberation of the project: (i) request for a decision from the CDRC on the plans presented or (ii) request that the project be considered at the next meeting to provide you with ample time to consider and incorporate the elements recommended for project redesign. You

chose the second option, and the CDRC directed staff to schedule your project for consideration at a later date.

Please contact Carmelisa Morales, Project Planner, at 650/363-1873, if you have any questions.

To provide feedback, please visit the Department's Customer Survey at the following link:
<http://planning.smcgov.org/survey>.

Sincerely,



Dennis P. Aguirre, Design Review Officer

CM:pac - CJMBB0422_WPN.DOCX

cc: Stuart Grunow, Member Architect
Melanie Hohnbaum, Moss Beach Community Representative
Zubar LLC, Property Owner
Lisa Ketcham, Midcoast Community Council
Kris Lannin Liang, Interested Member of the Public
Steven and Melinda King, Interested Members of the Public
Sarah Vespremi, Interested Member of the Public
Gary Horsman, Interested Member of the Public
Rich Becker, Interested Member of the Public
Jim Scheinberg, Interested Member of the Public
Stephen Velyvis, Interested Member of the Public



County of San Mateo - Planning and Building Department

ATTACHMENT F

December 6, 2017

Carlos Zubieta
1725-A Abbott Kinney Boulevard
Venice, CA 90291

Dear Mr. Zubieta:

SUBJECT: Coastside Design Review Recommendation of Approval
Arbor Lane, Moss Beach
APN 037-123-430; County File No. PLN 2016-00444

At its meeting on November 9, 2017, the San Mateo County Coastside Design Review Committee (CDRC) considered your application for design review recommendation to allow construction of a new 3,338 sq. ft. single-family residence plus an attached 468 sq. ft. two-car garage on an undeveloped 14,320 sq. ft. parcel located on Arbor Lane. The project includes a hearing-level Coastal Development Permit (CDP) and a Grading Permit. A total of 368 cubic yards (c.y.) of grading (186 c.y. of cut and 182 c.y. of fill) is proposed. Two trees are proposed for removal. The project is appealable to the California Coastal Commission.

Prior to the Planning Commission review of the project at a future public hearing date, this project will require completion and circulation of an Initial Study and Mitigated Negative Declaration (IS/MND) pursuant to the California Environmental Quality Act (CEQA) to assess its potential environmental impacts.

Based on the plans, application forms, and accompanying materials submitted, the CDRC recommended approval of your project based on and subject to the findings, conditions, and recommendations in the following sections. Please remove the story poles and all other materials used to demonstrate the proposed building footprint from the project site immediately.

FINDINGS

The Coastside Design Review Committee found that:

1. **For the Design Review**

The project, as proposed and conditioned, has been reviewed under and found to be in compliance with the Design Review Standards for One-Family and Two-Family Residential Development in the Midcoast, Section 6565.20, of the San Mateo County Zoning Regulations, specifically elaborated as follows:



- a. Section 6565.20(B) Neighborhood Definition and Neighborhood Character;
2. Neighborhood Character (p. 3): The project is situated within a neighborhood that consists of similarly sized one- and two-story single family residences. Although larger in size than other houses in the area, the size of the house was reduced in footprint in the interest of preserving the views of the neighborhood. The applicant has reduced the second story of the residence and relocated a deck to the back of the property to preserve privacy and minimize the visual impacts from many of the neighboring homes.
- b. Section 6565.20(F) Landscaping, Paved Areas, Fences, Lighting and Noise;
1. Landscaping (pp. 22-25): While the appearance of new residential structures is of primary importance, development should be designed to prevent adverse impacts to neighboring properties. Proposed landscaping should harmonize with existing vegetation on-site. A smooth transition between development and adjacent open areas should be maintained through plant materials that are native or appropriate to the area. Exterior lighting can affect distant views from scenic corridors. The proposal includes downward-directed exterior lighting that is architecturally integrated with the house's design, style, material and colors, and is designed and located so light and glare are directed away from neighbors and confined to the site. The revised landscape plan is consistent with the recommendations presented in the July 13, 2017 meeting.

RECOMMENDED CONDITIONS

Current Planning Section

1. The project shall be constructed in compliance with the plans once approved by the Planning Commission (or final decision-making body) and in substantial compliance with plans reviewed by the Coastsides Design Review Committee (CDRC) on November 9, 2017. Any changes or revisions to the approved plans shall be submitted to the Design Review Officer for review and approval prior to implementation. Minor adjustments to the project may be approved by the Design Review Officer if they are consistent with the intent of and are in substantial conformance with this approval. Alternatively, the Design Review Officer may refer consideration of the revisions to the Coastsides Design Review Committee, with applicable fees to be paid.
2. The applicant shall indicate the following on the plans submitted for a building permit, as stipulated by the Coastsides Design Review Committee:
 - a. Reduce front entry Dark Sky-compliant light fixtures by one light fixture.
 - b. Dark Sky-compliant light fixtures in front yard area shall not exceed 12 inches in height.

Recommendation for Applicant's Consideration:

- (1) Consider the environmental benefits of preserving instead of removing the 36" diameter at breast height (dbh) cypress tree at the rear of the property located close to the creek edge.
- (2) Consider reducing the rear doorway from double doors to a single door to allow for a reduction in square footage in the living and guest rooms and to shift the first floor by the width of the doorway. This minor modification will achieve a sizable reduction in square footage and be more in line with neighboring structures.
3. The applicant shall provide "finished floor elevation verification" to certify that the structure is actually constructed at the height shown on the submitted plans. The applicant shall have a licensed land surveyor or engineer establish a baseline elevation datum point in the vicinity of the construction site.
 - a. The applicant shall maintain the datum point so that it will not be disturbed by the proposed construction activities until final approval of the building permit.
 - b. This datum point and its elevation shall be shown on the submitted site plan. This datum point shall be used during construction to verify the elevation of the finished floors relative to the existing natural or to the grade of the site (finished grade).
 - c. Prior to Planning approval of the building permit application, the applicant shall also have the licensed land surveyor or engineer indicate on the construction plans: (1) the natural grade elevations at the significant corners (at least four) of the footprint of the proposed structure on the submitted site plan, and (2) the elevations of proposed finished grades.
 - d. In addition, (1) the natural grade elevations at the significant corners of the proposed structure, (2) the finished floor elevations, (3) the topmost elevation of the roof, and (4) the garage slab elevation must be shown on the plan, elevations, and cross-section (if one is provided).
 - e. Once the building is under construction, prior to the below floor framing inspection or the pouring of the concrete slab (as the case may be) for the lowest floor(s), the applicant shall provide to the Building Inspection Section a letter from the licensed land surveyor or engineer certifying that the lowest floor height, as constructed, is equal to the elevation specified for that floor in the approved plans. Similarly, certifications on the garage slab and the topmost elevation of the roof are required.
 - f. If the actual floor height, garage slab, or roof height, as constructed, is different than the elevation specified in the plans, then the applicant shall cease all construction and no additional inspections shall be approved until a revised set of plans is submitted to and subsequently approved by both the Building Official and the Community Development Director.

4. Projects subject to Provision C.3.i (individual single-family home projects that create and/or replace 2,500 square feet or more of impervious surface, and other projects that create and/or replace at least 2,500 square feet of impervious surface but are not C.3 Regulated Projects) shall implement at least one of the six site design measures listed below:
 - a. Direct roof runoff into cisterns or rain barrels and use rainwater for irrigation or other non-potable use.
 - b. Direct roof runoff onto vegetated areas.
 - c. Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
 - d. Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
 - e. Construct sidewalks, walkways, and/or patios with permeable surfaces.
 - f. Construct bike lanes, driveways, and/or uncovered parking lots with permeable surfaces.
5. The property owner shall adhere to the San Mateo Countywide Stormwater Pollution Prevention Program "General Construction and Site Supervision Guidelines," including, but not limited to, the following:
 - a. Delineation with field markers of clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees, and drainage courses within the vicinity of areas to be disturbed by construction and/or grading.
 - b. Protection of adjacent properties and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching, or other measures as appropriate.
 - c. Performing clearing and earth-moving activities only during dry weather.
 - d. Stabilization of all denuded areas and maintenance of erosion control measures continuously between October 1 and April 30.
 - e. Storage, handling, and disposal of construction materials and wastes properly, so as to prevent their contact with stormwater.
 - f. Control and prevention of the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, wash water or sediments, and non-stormwater discharges to storm drains and watercourses.

- g. Use of sediment controls or filtration to remove sediment when dewatering site and obtain all necessary permits.
 - h. Avoiding cleaning, fueling, or maintaining vehicles on-site, except in a designated area where wash water is contained and treated.
 - i. Limiting and timing applications of pesticides and fertilizers to prevent polluted runoff.
 - j. Limiting construction access routes and stabilization of designated access points.
 - k. Avoiding tracking dirt or other materials off-site; cleaning off-site paved areas and sidewalks using dry sweeping methods.
 - l. Training and providing instruction to all employees and subcontractors regarding the Watershed Protection Maintenance Standards and construction Best Management Practices.
 - m. Additional Best Management Practices in addition to those shown on the plans may be required by the Building Inspector to maintain effective stormwater management during construction activities. Any water leaving the site shall be clear and running slowly at all times.
 - n. Failure to install or maintain these measures will result in stoppage of construction until the corrections have been made and fees paid for staff enforcement time.
6. The applicant shall include an erosion and sediment control plan to comply with the County's Erosion Control Guidelines on the plans submitted for the building permit. This plan shall identify the type and location of erosion control measures to be installed upon the commencement of construction in order to maintain the stability of the site and prevent erosion and sedimentation off-site. A separate tree protection plan may also be required as part of the building permit. Species and size of trees shall be indicated on the plan (size shall be measured by diameter at breast height (dbh) method).
7. An Erosion Control and/or Tree Protection Inspection is required prior to the issuance of a building permit for grading, construction, and demolition purposes, as the project requires tree protection of significant tree(s). Once all review agencies have approved your Building Permit, you will be notified that an approved job copy of the Erosion Control and/or Tree Protection Plan is ready for pick-up at the Planning counter of the Planning and Building Department. Once the Erosion Control and/or Tree Protection measures have been installed per the approved plans, please contact Jeremiah Pons, Building/Erosion Control Inspector, at 650/599-1592 or jpons@smcgov.org, to schedule a pre-site inspection. A \$144 inspection fee will be assessed to the Building Permit for the inspection. If the initial pre-site inspection is not approved, an additional inspection fee will be assessed for each required re-inspection until the job site passes the Pre-Site Inspection, or as determined by the Building Inspection Section.

8. Due to the site's location within the watershed of the James Fitzgerald Marine Reserve, an Area of Special Biological Significance, the applicant shall install adequate erosion control during the period(s) of land disturbance. The County will monitor compliance with this condition by conducting weekly construction inspections during the rainy season for the period(s) of land disturbance, as required by the State Water Board's Special Protections.
9. The project meets the definition of a Stormwater Regulated Site (SWRS) Site (e.g., project disturbs 1 acre or more of land, needs grading permit, involves work within a waterway, OR involves new construction or major remodel in an area that is within 100 feet of a creek, has slope of 20% or more). Monthly erosion and sediment control inspections by the County are required during the rainy season, as required by the Regional Water Quality Control Board.
10. All new power and telephone utility lines from the street or nearest existing utility pole to the main dwelling and/or any other structure on the property shall be placed underground.
11. The applicant shall apply for a building permit and shall adhere to all requirements from the Building Inspection Section, the Geotechnical Section, the Department of Public Works, and the Coastside Fire Protection District.
12. No site disturbance shall occur, including any grading or tree/vegetation removal, until a building permit has been issued.
13. To reduce the impact of construction activities on neighboring properties, comply with the following:
 - a. All debris shall be contained on-site; a dumpster or trash bin shall be provided on-site during construction to prevent debris from blowing onto adjacent properties. The applicant shall monitor the site to ensure that trash is picked up and appropriately disposed of daily.
 - b. The applicant shall remove all construction equipment from the site upon completion of the use and/or need of each piece of equipment which shall include but not be limited to tractors, back hoes, cement mixers, etc.
 - c. The applicant shall ensure that no construction-related vehicles shall impede through traffic along the right-of-way on Arbor Lane. All construction vehicles shall be parked on-site outside the public right-of-way or in locations which do not impede safe access on Arbor Lane. There shall be no storage of construction vehicles in the public right-of-way.
14. The exterior color samples submitted to the CDRC are approved. Color verification shall occur in the field after the applicant has applied the approved materials and colors but before a final inspection has been scheduled.

15. Noise sources associated with demolition, construction, repair, remodeling, or grading of any real property shall be limited to the hours from 7:00 a.m. to 6:00 p.m., weekdays and 9:00 a.m. to 5:00 p.m., Saturdays. Said activities are prohibited on Sundays, Thanksgiving, and Christmas (San Mateo Ordinance Code Section 4.88.360).
16. Installation of the approved landscape plan is required prior to final building inspection.
17. The landscape plan shall comply with the Water Efficient Landscape Ordinance (WELO):
 - a. At the building permit application stage, the project shall demonstrate compliance with the Water Efficient Landscape Ordinance (WELO) and provide required forms. WELO applies to new landscape projects equal to or greater than 500 sq. ft. A prescriptive checklist is available as a compliance option for projects under 2,500 sq. ft. WELO also applies to rehabilitated landscape projects equal to or greater than 2,500 sq. ft.

The following restrictions apply to projects using the prescriptive checklist:

- (1) Compost: Project must incorporate compost at a rate of at least four (4) cubic yards per 1,000 sq. ft. to a depth of 6 inches into landscape area (unless contra-indicated by a soil test).
- (2) Plant Water Use (Residential): Install climate adapted plants that require occasional, little, or no summer water (average WUCOLS plant factor 0.3) for 75% of the plant area excluding edibles and areas using recycled water.
- (3) Mulch: A minimum 3-inch layer of mulch should be applied on all exposed soil surfaces of planting areas, except in areas of turf or creeping or rooting groundcovers.
- (4) Turf: Total turf area shall not exceed 25% of the landscape area. Turf is not allowed in non-residential projects. Turf (if utilized) is limited to slopes not exceeding 25% and is not used in parkways less than 10 feet in width. Turf, if utilized in parkways, is irrigated by sub-surface irrigation or other technology that prevents overspray or runoff.
- (5) Irrigation System: The property shall certify that Irrigation controllers use evapotranspiration or soil moisture data and utilize a rain sensor; Irrigation controller programming data will not be lost due to an interruption in the primary power source; and Areas less than 10 feet in any direction utilize sub-surface irrigation or other technology that prevents overspray or runoff.

Coastside Fire Protection District

18. Smoke Detection: As per the California Building Code (CBC), State Fire Marshal Regulations, and the Coastside Fire Protection District (CFPD) Ordinance 2016-01, the

applicant is required to install State Fire Marshal approved and listed smoke detectors which are hard wired, interconnected, and have battery backup. These detectors are required to be placed in each new and reconditioned sleeping room and at a point centrally located in the corridor or area giving access to each separate sleeping area. In existing sleeping rooms, areas may have battery powered smoke alarms. A minimum of one detector shall be placed on each floor. Smoke detectors shall be tested and approved prior to the building final inspection.

19. Occupancy Separation: Per the 2016 CBC, Section 406.1.4, a one-hour occupancy separation wall shall be installed with a solid core, 20-minute fire rated, self-closing door assembly with smoke gasket between the garage and the residence. All electrical boxes installed in rated walls shall be metal or protected.
20. Address Numbers: All buildings that have a street address shall have the number of that address on the building, mailbox, or other type of sign at the driveway entrance in such a manner that the number is easily and clearly visible from either direction of travel from the street. New residential buildings shall have internally illuminated address numbers contrasting with the background so as to be seen from the public way fronting the building. Residential address numbers shall be at least six feet above the finished surface of the driveway. An address sign shall be placed at each break of the road where deemed applicable by the San Mateo County Fire Department. Numerals shall be contrasting in color to their background and shall be no less than 4 inches in height, and have a minimum 3/4-inch stroke. Remote signage shall be a 6" x 18" green reflective metal sign.
21. Roof Covering: Per CFPDC 2016-01, the roof covering of every new building or structure, and materials applied as part of a roof covering assembly, shall have a minimum fire rating of Class "B" or higher as defined in the current edition of the California Building Code.
22. Vegetation Management: Per CFPDC 2016-01, the 2016 California Fire Code (CFC) and Public Resources Code (PRC) 4291:
 - a. A fuel break of defensible space is required around the perimeter of all structures to a distance of not less than 30 feet and may be required to a distance of 100 feet or to the property line. In the State Responsible Area (SRA), the fuel break is 100 feet or to the property line.
 - b. Trees located within the defensible space shall be pruned to remove dead and dying portions, and limbed up 6 to 10 feet above the ground. New trees planted in the defensible space shall be located no closer than 10 feet to adjacent trees when fully grown or at maturity.
 - c. Remove that portion of any existing tree, which extends within 10 feet of the outlet of a chimney or stovepipe or is within 5 feet of any structure.

23. Fire Flow: A fire flow of 1,000 gpm for 2 hours with a 20-psi residual operating pressure must be available as specified by additional project conditions to the project site. The applicant shall provide documentation including hydrant location, main size, and fire flow report at the building permit application stage. Inspection required prior to Fire's final approval of the building permit or before combustibles are brought on-site.
24. Automatic Fire Sprinkler System: As per San Mateo County Building Standards and CFPD Ordinance 2016-01, the applicant is required to install an approved automatic fire sprinkler system meeting the requirements of NFPA-13D throughout the proposed or improved dwelling and garage. All attic access locations will be provided with a pilot head on a metal upright. All areas that are accessible for storage purposes shall be equipped with fire sprinklers including closets and bathrooms. The only exception is small linen closets less than 24 square feet with full depth shelving. The plans for this system must be submitted to the San Mateo County Planning and Building Department. A building permit will not be issued until plans are received, reviewed, and approved. Upon submission of the plans, the County will forward a complete set to the Coastsides Fire Protection District for review. Fees shall be paid prior to plan review.
25. Exterior Bell and Interior Horn/Strobe: are required to be wired into the required flow switch on your fire sprinkler system. The bell, horn/strobe and flow switch, along with the garage door opener are to be wired into a separate circuit breaker at the main electrical panel and labeled.
26. Fuel Break: Maintain around and adjacent to such buildings or structures a fuel break/firebreak made by removing and clearing away flammable vegetation for a distance of not less than 30 feet and up to 100 feet around the perimeter of all structures, or to the property line, if the property line is less than 30 feet from any structure.
27. Occupancy: The applicant shall install the proper occupancy separations, as per current California Building and Residential Codes. Plans at the building permit application stage shall include listing and construction details. Inspections will occur throughout construction and prior to Fire's final approval of the building permit.
28. Installation of underground sprinkler pipes shall be flushed and visually inspected by the CFPD prior to hook-up to riser. Any soldered fittings must be pressure tested with trench open.
29. "No Parking Signs" are required in the existing turnaround.
30. At the building permit stage, the plans shall address and/or include the following:
 - a. Add following note to title page: Building will be protected by an automatic fire sprinkler system.

- b. Add the following note: Escape or rescue windows shall have a minimum net clear openable area of 5.7 sq. ft., 5.0 sq. ft. allowed at grade. The minimum net clear openable height dimension shall be 24 inches. The net clear openable width dimension shall be 20 inches. Finished sill height shall be no more than 44 inches above the finished floor.
 - c. Identify rescue windows in each bedroom and verify that they meet all requirements. Include on plans.
 - d. New attached garage must meet occupancy separation requirements. Provide note and detail (CRC R302.5/R302.6).
 - e. Add following note: New residential buildings shall have internally illuminated address numbers contrasting with the background so as to be seen from the public roadway fronting the building. Residential address numbers shall be at least 6 feet above the finished surface of the driveway. Where buildings are located remotely to the public roadway, additional signage at the driveway/roadway entrance leading to the building and/or on each individual building shall be required by the CFPD. This remote signage shall consist of a 6-inch by 18-inch green reflective metal sign with 3-inch reflective numbers/letters similar to Hy-Ko 911 or equivalent.
 - f. Show location of fire hydrant on a site plan. A fire hydrant is required within 250 feet of the building and the flow shall be a minimum of 1,000 gallons per minute (gpm) at 20 pounds per square inch (psi). This information shall be verified by the water purveyor in a letter initiated by the applicant and submitted to San Mateo County Fire/Cal Fire or the Coastside Fire Protection District. If there is not a hydrant within 250 feet with the required flow, a hydrant shall be installed at the applicant's expense.
31. All fire conditions and requirements must be incorporated into your building plans prior to building permit issuance. It is your responsibility to notify your contractor, architect, and engineer of these requirements.
32. Contact the Fire Marshal's Office at 650/726-5213 to schedule a Final Inspection prior to occupancy and Final Inspection by a Building Inspector. Allow for a minimum of 72-hour notice.

Department of Public Works

33. Prior to the issuance of the building permit, the applicant shall have prepared, by a registered civil engineer, a drainage analysis of the proposed project and submit it to the Department of Public Works for review and approval. The drainage analysis shall consist of a written narrative and a plan. The flow of the stormwater onto, over, and off of the property shall be detailed on the plan and shall include adjacent lands as appropriate to clearly depict the pattern of flow. The analysis shall detail the measures

necessary to certify adequate drainage. Post-development flows and velocities shall not exceed those that existed in the pre-developed state. Recommended measures shall be designed and included in the improvement plans and submitted to the Department of Public Works for review and approval.

34. Prior to the issuance of the building permit, the applicant shall submit a driveway "Plan and Profile," to the Department of Public Works, showing the driveway access from the nearest "publicly" maintained roadway to the parcel (garage slab) complying with County Standards for driveway slopes (not to exceed 20%) and to County Standards for driveways (at the property line) being the same elevation as the center of the access roadway. When appropriate, as determined by the Department of Public Works, this plan and profile shall be prepared from elevations and alignment shown on the roadway improvement plans. The driveway plan shall also include and show specific provisions and details for both the existing and the proposed drainage patterns and drainage facilities.
35. No proposed construction work within the County right-of-way shall begin until County requirements for the issuance of an encroachment permit, including review of the plans, have been met and an encroachment permit issued. The applicant shall contact a Department of Public Works Inspector 48 hours prior to commencing work in the right-of-way.
36. Prior to the issuance of the building permit, the applicant will be required to provide payment of "roadway mitigation fees" based on the square footage (assessable space) of the proposed building per Ordinance No. 3277.
37. The applicant shall provide sidewalks along the edge of the property to conform with existing sidewalks per county standards.

Montara Water and Sanitary District

38. Prior to the issuance of a building permit, the applicant shall obtain Domestic Water/Fire Protection Connection and Sewer Permits, including the submittal of adequate fire flow calculations from a Certified Fire Protection Contractor.

Environmental Health Division

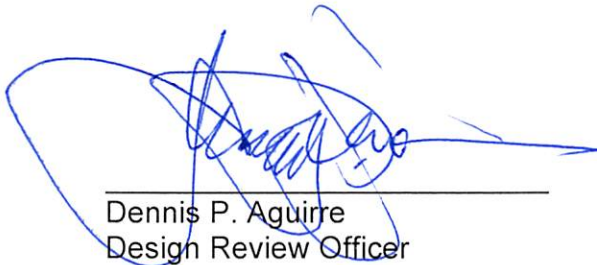
39. Upon obtaining approval of the planning permits required for this project, the applicant shall properly abandon the existing well(s) on the property to the satisfaction of the Environmental Health (EH) Division. This shall have occurred prior to or concurrent with the EH Division's final certification of the well that does meet their standards, or if determined that one or both do not.
40. Upon obtaining approval of the planning permits required for this project, the applicant shall obtain a well abandonment permit from the EH Division for the well(s) approved under Planning Permit Case Number CDP 96-0045.

Please note that the decision of the Coastsides Design Review Committee is a recommendation regarding the project's compliance with design review standards, not the final decision on this project, which requires a Coastal Development Permit (CDP) and Grading Permit. The public hearing on the CDP and Grading Permit will take place at a later date.

For more information, please contact the project planner, Carmelisa Morales, at 650/363-1873 or by email at cjmorales@smcgov.org.

To provide feedback, please visit the Department's Customer Survey at the following link: <http://planning.smcgov.org/survey>.

Sincerely,



Dennis P. Aguirre
Design Review Officer

DPA:CJM:jlh – CJMBB0729_WJN.DOCX

cc: Stuart Grunow, Member Architect
Bruce Chan, Member Landscape Architect
Melanie Hohnbaum, Moss Beach Community Representative
Zubar LLC, Property Owner
Lisa Ketcham, Midcoast Community Council
Steven and Melinda King, Interested Member of the Public
Jim Scheinberg, Interested Member of the Public
Gary Housman, Interested Member of the Public
Richard Grech, Interested Member of the Public
Elisabeth Vespremi, Interested Member of the Public
Richard Becker, Interested Member of the Public
Liam Vespremi, Interested Member of the Public



County of San Mateo - Planning and Building Department

ATTACHMENT G

BIOLOGICAL RESOURCES ASSESSMENT

**199 Arbor Lane
Moss Beach, California
APN 037-123-043**

Prepared for:

Carlos Zubieta, Architect
1725-A Abbot Kinney Boulevard
Venice, CA 90291

May 9, 2015

Prepared by:

Kopitov Environmental LLC
POB 7380
Santa Cruz, CA 95061



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APPLICANT/OWNER

Carlos Zubieta, Architect
1725-A Abbot Kinney Boulevard
Venice, California 90291

PROJECT ADDRESS

199 Arbor Lane
Moss Beach, San Mateo County, California

ASSESSOR'S PARCEL NUMBER

037-123-430

SUMMARY

Report Summary (briefly state the results of the report, habitat type, rare, endangered, or unique species present, anticipated impacts, and proposed mitigation measures.)

At the request of Carlos Zubieta, Architect, Kopitov Environmental LLC conducted an assessment of biological resources on 1.04 acres biological study area centered on 199 Arbor Lane (approximately 14,320 square feet) in Moss Beach, San Mateo County, California. The proposed project is the construction of a single- family residence. This report assesses the potential environmental effects of the project pursuant to the County of San Mateo Local Coastal Program.

The study area consists of five plant communities or habitats: non-native grassland/ruderal, Monterey cypress, poison oak/California blackberry, herbaceous/ruderal and riparian/wetland. A grove of Monterey cypress (*Cupressus macrocarpa*), designated a Class 1 Heritage Tree by LCP Policy 7.50, was found on the study area. California blackberry (*Rubus ursinus*), a community designated as rare by the California Department of Fish and Wildlife, was observed on the study area including the proposed work area. The work area community included dense patch of poison oak (*Toxicodendron diversilobum*). Beach strawberry (*Fragaria chiloensis*), protected by County of San Mateo Local Coastal Program (LCP) Policy 7.49, was found within the proposed work area. No other special status plant species or natural communities were observed within the study area. The proposed project would result clearing of the beach strawberry and California blackberry on the work area and removal of one or more Monterey Cypress trees. Monterey cypress tree impacts would be subject to the County of Monterey Significant Tree Ordinance requires permits for tree removal. An expert in strawberry breeding determined that there would be no impact, thus no mitigation, for clearing the beach strawberry patch. California blackberry was found throughout the arroyo, thus, impacts would be less than significant.

Four special status plant species have historic populations within 3 miles of the project area. Potentially suitable habitat may be present on Dean Creek for coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*) and Hickman's cinquefoil (*Potentilla hickmanii*). Potentially suitable habitat for rose leptosiphon (*Leptosiphon rosaceus*) and yellow leptosiphon (*Leptosiphon croceus*) was found on the coastal bluff; however, *Leptosiphon* species were not detected during the field surveys conducted in the peak blooming period. The project would not affect the arroyo or the coastal bluff, thus, these species would not be impacted by the proposed

project.

Based on the presence of potentially suitable habitat (such as Dean Creek, cypress grove, and poison oak/blackberry scrub) and proximity to known occurrences, there is potential for California red-legged frog (*Rana draytonii*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), salt marsh common yellowthroat (*Geothlypis trichas sinuosa*), bats and the monarch butterfly (*Danaus plexippus*) to occur or pass through the project area. Nesting migratory birds have the potential to nest in all of the habitats found on the study area. The proposed project has the potential to significantly impact these species resulting in mortality. Implementation of mitigation measures including, but not limited to, pre-construction surveys, exclusionary fencing and stormwater best management practices would reduce impacts to less than significant (table 1).

There would be no impacts to Dean Creek, an intermittent stream, located approximately 30 feet south of the project area. Implementation of minimum stormwater best management practices and a 20-foot scenic easement would meet and/or exceed LCP minimum intermittent stream 30-foot buffer and required stormwater mitigation measures.

INTRODUCTION

At the request of the Carlos Zubieta, Kopitov Environmental LLC conducted an assessment of biological resources for a proposed single-family residence located on 199 Arbor Lane, Moss Beach, San Mateo County, California.

This report presents the results and analysis of potential project-related effects on special-status plant and wildlife species and sensitive habitats consistent with the LCP Sensitive Habitats Component, General Policies, 7.5 Permit Conditions (County of San Mateo LCP, 2013). This report also provides recommendations for avoidance and mitigation measures to reduce effects to special-status plants, wildlife and sensitive habitats.

PROJECT SETTING

Project and property description (describe the proposed project and property, including the size, topographic characteristics, water resources, soil types, and land uses on the property and in the vicinity up to a radius of one-quarter mile. Include a map of the area from the USGS 7.5-minute quadrangle series.)

PROJECT DESCRIPTION AND LOCATION

The project area was located on 199 Arbor Lane (a cul-de-sac) approximately 0.17 miles west of Highway 1 (The Cabrillo Highway) in Moss Beach, an unincorporated area of San Mateo County (figure 1). The project area encompasses the entirety of APN 037-123-430.

The proposed project is the construction of a single-family residence covering an estimated area of 3,400 square feet, plus a two-car garage of approximately 400 square feet. The single story home would be a concrete slab on grade construction. Other features include a concrete driveway (or a more permeable surface if permitted by local building officials), concrete decks surrounding a spa and BBQ area, and a pedestrian approach or walkway from Arbor Lane. The project would include a 20-foot scenic easement from the edge of the southern boundary (figure 2).

REGIONAL SETTING

The unincorporated community of Moss Beach is located along the San Mateo County coastline and encompasses 2.25 square miles. It has a population of approximately 3,103 (USDOC 2010). The communities of El Granada, and Princeton-by-the Sea were south and Montara and the City of Pacifica were north of the Moss Beach. The City of San Francisco was approximately 20 miles north. The Moss Beach climate was characterized by cool summer Mediterranean climate with an annual precipitation average of 30 inches.

BIOLOGICAL RESOURCES STUDY AREA

The project area was defined as the entirety of APN 037-123-430. The biological resources study area (study area) is defined as the project area and accessible areas bordering the project area (figure 2). The total study area encompasses approximately 1.04 acres.

ENVIRONMENTAL SETTING

SURROUNDING LAND USES AND SETTING



Figure 1
Vicinity Map and Region Map
USGS 7.5 Minute Quad



Biological Resource Assessment
199 Arbor Lane
Moss Beach, California

Date: 05/07/2015

The immediate surrounding land use includes single-family residences, Fitzgerald Marine Reserve, and a steep gully (arroyo) containing an intermittent creek. The project is bordered to the east by a single-family residence, to the north by an open space/vacant lot owned by the homeowners association and to the south by a steep gully containing Dean Creek. The Fitzgerald Marine Reserve and the Pacific Ocean were to the west (including Kelp Cove lagoons and beaches).

Land use along the Cabrillo Highway and within ¼ mile of the project area includes single-family residences and businesses, such as restaurants, offices.

TOPOGRAPHY

The project was located on a coastal bluff approximately 40 to 50 feet landward of the bluff edge. The elevation was approximately 66 feet (20 meters) above mean sea level. The topography was generally flat with an arroyo located along the southern boundary. The arroyo was characterized by near vertical slopes.

HYDROLOGY

The project was located within the Dean Creek Watershed with Dean Creek on the southern boundary of the project. This creek was characterized as an intermittent creek (USGS 2015). Intermittent creeks were depicted with dotted or dashed blue lines on the USGS NHD maps. Other hydrological features mapped nearby include:

- San Vicente Creek, approximately 530 feet south;
- Montara Creek, approximately 0.8 mile north;
- Pillar Point Marsh, approximately 0.75 mile south of the project and west of the Half Moon Bay Airport.
- Three ponds, east of Cabrillo Highway.
 - approximately 0.8 mile northeast and near Montara Creek;
 - approximately 1 mile southeast near San Vicente Creek (2 ponds).

SOILS

The study area is composed of two NRCS soils mapping units, Beaches and Typic Argiustolls/loamy Urban Land association. (Soil Survey Staff 2015). Beaches was listed as a County of San Mateo hydric soil. Typic Argiustolls/loamy Urban Land Association was described as setting on fluvio-marine terraces with a slope of 5 to 15 percent. Parent materials include coastal alluvium derived from sedimentary rock. There were no serpentine soils that could provide habitat for special status species present on site.

REGULATORY SETTING

This section provides an overview of the regulations that may apply to the project. Additional regulations may apply.

POTENTIALLY JURISDICTIONAL WATERS OF THE STATE AND US

Potentially jurisdictional waters include aquatic resources, such as riparian areas, streams, rivers, wetlands, and associated aquatic vegetation communities. These areas are considered sensitive

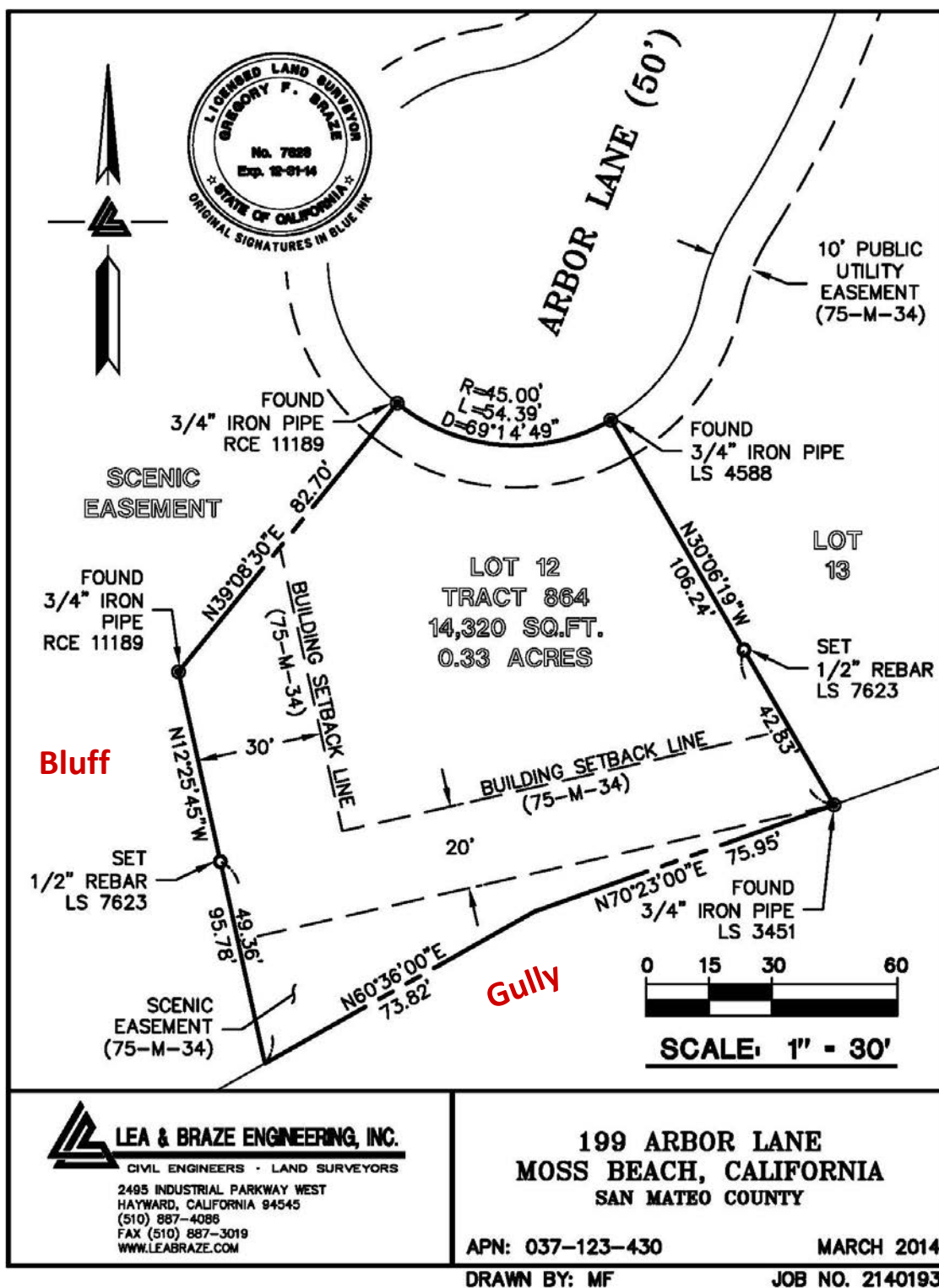


Figure 2
Project Area Survey depicting proposed buffer areas along the arroyo and bluff.

biological resources and could fall under the jurisdiction of local, state and federal regulatory agencies, as described below. Final jurisdictional determinations should be determined by the appropriate regulatory agency.

County of San Mateo Local Coastal Program

This project located within the Coastal Zone of San Mateo County, thus, subject to compliance with the County of San Mateo Local Coastal Program. Compliance would include applying for a Coastal Development Permit (CDP). In order for the CDP to be issued, the project must comply with the policies of the LCP and all ordinances adopted to implement the LCP. LCP jurisdictional waters include all perennial and intermittent streams and their tributaries, coastal tidelands and marshes, wetlands, lakes and ponds and adjacent shore habitat, riparian corridors, sea cliffs, and marine habitats.

Waters of the State

The California Coastal Commission (CCC), in partnership with coastal cities and counties, plans and regulates the use of land and water in the coastal zone. Development activities, which are broadly defined by the Coastal Act to include (among others) construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters, generally require a coastal permit from either the Coastal Commission or the local government. The County of San Mateo administers the Local Coastal Program in partnership with the CCC.

Stream channels consisting of a defined bed and bank are considered waters of the State and regulated by the California Fish and Game Code (CFGF) (Section 1600 et seq). In addition to the stream channel, the bed and banks, and adjacent riparian and/or hydrophytic vegetation (wetlands), extending to the outer drip-line of the vegetation, may be considered waters of the State. Wetlands are defined by the State as lands that are transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water, or periodically support hydrophytic dominant vegetation, or in which soils are hydric in nature (CERES 2011).

Additional applicable state laws may include California Porter-Cologne Water Quality Control Act the State Water Resources Control Board (SWRCB) that may require permits ("waste discharge requirements" [WDRs]) for the fill or alteration of "Waters of the State". The term "Waters of the State" is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Section 13050[e]).

Waters of the US

Section 404 of the Clean Water Act (CWA) prohibits the discharge of dredged or fill material into "waters of the United States" without a permit from the US Army Corps of Engineers (Corps). These include all waters that are subject to the ebb and flow of tides, wetlands, lakes, rivers, streams (including intermittent or ephemeral streams), mudflats, sandflats, sloughs, prairie potholes, vernal pools, wet meadows, playa lakes, natural ponds, and tributaries of the above features. The extent of waters of the U.S. is generally defined as that portion which falls within the limits of "ordinary high water." Field indicators of ordinary high water include clear and natural lines on opposite sides of the banks, scouring, sedimentary deposits, drift lines, exposed roots, shelving, destruction of terrestrial vegetation, and the presence of litter or debris.

THREATENED, ENDANGERED, SPECIAL STATUS SPECIES INCLUDING UNIQUE SPECIES

Special-status species and their habitats were defined, for this report, as those species and habitats (1) listed as threatened or endangered by Local, State and Federal agencies, (2) proposed for listing as threatened or endangered by Federal and State agencies, or (3) designated as candidate or fully protected species under the Federal Endangered Species Act of 1973 (ESA), as amended (Code of Federal Regulations, Title 50, Section 17), California Endangered Species Act (CESA)(California Code of Regulations Title 14, Section 670.5), CFGC (Sections 1901, 2062, 2067, 3511, 4700, 5050 and 5515), (4) plants regulated by the Native Plant Protection Act of 1977 and included in lists 1 through 4 of the California Native Plant Society (CNPS) online inventory, (5) plants that qualify as “rare” in the California Environmental Quality Act (CEQA), section 15380, and (6) plants and animals considered “rare and endangered” in the County of San Mateo LCP.

Section 2080 of the CFGC prohibits "take" of any species that the commission determines to be an endangered or threatened species. CFGC Section 86, as to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill defines take." Take is prohibited for California Department of Fish and Wildlife (CDFW) fully protected species and no licenses or permits may be issued for take of fully protected species except for collection for scientific research.

County of San Mateo

Endangered and rare species and their habitats are regulated by the County’s LCP. The following species and their habitats are included: San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), San Francisco tree lupine moth (*Grapholitha edwardsiana*), brackish water snail (*Tryonia imitator*), sea otter (*Enhydra lutris nereis*), and globose dune beetle (*Coelus globosus*). Unique species includes the following species and habitats elephant seal (*Mirounga angustirostris*), Monterey pine (*Pinus radiata*), California wild strawberry (*Fragaria californica*), Champion Monterey cypress (*Cupressus macrocarpa*).

The project would be subject to the requirements of the County of San Mateo Significant Tree Ordinance should the project include removal or pruning of significant and/or heritage trees.

Other Regulated Sensitive and Locally Rare Wildlife Species

Monarch Butterflies. The monarch butterfly (*Danaus plexippus*) is not a state of federally listed species; however, it is given special consideration under the California Environmental Quality Act (CEQA) review process due to their sensitive life history and habitat requirements. Monarch butterflies depend upon winter roost sites that extend along the western coast. Roost habitats consist of wind-protected tree groves, including Monterey Cypress.

Bats. Various agencies have established status designations providing guidelines for the most sensitive and threatened bat species. The Townsend’s big-eared bat (*Corynorhinus townsendii*) is under review for protected status under CESA. During the review period, species are afforded protection under CESA. Bat species and their habitats also are afforded consideration under CEQA if potential significant adverse effects on the environment are determined. Sections 2000 and 4150 of the CFGC states that it unlawful to take or possess a number of species, including bats, without a license or permit as required by CFGC Section 3007. Title 14 of the California Code of Regulations (CCR) states it is unlawful to harass, herd, or drive a number of species, including bats. To harass is defined as “an intentional act, which disrupts an animal's normal

behavior patterns, which includes, but is not limited to, breeding, feeding or sheltering.”

Migratory Birds. Most bird species, breeding, migratory or of limited distribution, are protected by federal and state regulations. The Migratory Bird Treaty Act of 1918 (MBTA)(16 USC §703-712) federally listed (50 CFR §10), protects migratory bird species, their nests and their eggs from injury or death. The California Fish and Game Code (CFGF) §3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird; CFGF §3503.5 prohibits the take, possession, or needless destruction of any nests, eggs or birds in the orders Falconiformes (new world vultures, hawks, eagles, ospreys and falcons, among others) or Strigiformes (owls); CFGF §3511 prohibits the take or possession of fully protected birds; and CFGF §3513 prohibits the take or possession of any migratory nongame bird or part thereof as designated in the MBTA.

Birds of Prey. Birds of prey are also protected in California under provisions of the CFGF Section 3503.5, which states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “taking” by the CDFW.

MIGRATION, TRAVEL CORRIDORS AND HABITAT FRAGMENTATION

Wildlife corridors are included in Standards of Significance in Appendix G of the CEQA guidelines and are also regulated by the City’s Municipal Code. Wildlife movement corridors function to connect habitats used by native wildlife for purposes including, but not limited to, foraging, shelter, breeding, dispersal and migration. Studies suggest that habitat corridors provide connectivity for and are used by wildlife, and as such an important conservation component (Beier and Noss 1998). Proposed development that threatens to disrupt these natural movement patterns is required to evaluate the environmental impacts of these disruptions and address effects. Movement corridors in California include with valleys, rivers and creeks, riparian vegetation, and ridgelines. Maintaining movement corridors to allow access to the different biotic resources are essential to supporting various species. Evaluating the importance of an area that may function as a “movement corridor” depends on the species that occur in the area and that are dependent upon the natural resources or habitats in the area. While no detailed study of animal movements has been conducted for the study area, evaluating the site, its habitats, and understanding the life history of species potentially occurring on the site and in its vicinity provides sufficient information to infer the types of movements occurring in the region and whether or not proposed development would constitute a significant impact on animal movements.

METHODS

(briefly describe the survey methods used in preparing the report and show on an appropriately scaled map the location of sample points, transects, and any additional areas surveyed in the vicinity of the project.)

Aerial photographs were reviewed prior to background research and field surveys to identify potential habitat types, migration corridors, habitat connectivity, and potentially sensitive biological resources of the area, including but not limited to wetlands and streams.

BACKGROUND RESEARCH

Existing special-status species databases were reviewed to compile a list of sensitive natural communities and special-status species potentially occurring in the vicinity of each project area. Database queries included observations found in six USGS 7 ½ -minute quadrangles (quads) (collectively referred to as a six-quad search area). The six-quad search area was centered on the Montara Mountain quad and included the bordering quads of Half Moon Bay, San Mateo, Woodside, Hunters Point and San Francisco South.

The following data sources were queried:

- US Fish and Wildlife Service (USFWS) Sacramento Field Office Web Site: An official list of federal candidate, proposed, threatened, and endangered plant and wildlife species having the potential to occur in a six-quad search area (USFWS 2015).
- California Natural Diversity Database (CNDDDB): A list of federal and State special-status, proposed, threatened, and endangered plant and wildlife species, California Department of Fish and Wildlife (CDFW) designated sensitive natural communities, and California Native Plant Society (CNPS) listed special-status plant species was generated using a six-quad search area (CDFW 2015).
- CNPS Online Inventory of Rare and Endangered Plants of California: A list of CNPS special-status plant species that may occur in the project vicinity was generated using a nine-quad search (CNPS 2015).
- U.S. Geological Survey (USGS) National Hydrography Dataset (NHD): This national dataset depicts surface water features such as rivers, streams, lakes, ponds, drainage basins, and coastlines. This data was used to identify water features within the vicinity of the study area (USGS 2015).

FIELD SURVEYS

A reconnaissance level pedestrian survey of the study area was conducted on April 24, 2015 by Anna Kopitov, Senior Biologist and Neal Kramer, Senior Botanist and Wetland Specialist. Accessible areas were surveyed in a manner to ensure total survey coverage with special focus given to identifying areas with the potential to support sensitive habitats, rare, endangered, special-status and unique species. The weather was calm with clear skies and the temperature in the low to mid 50 degrees Fahrenheit.

Potentially Jurisdictional Waters and Other Regulated Habitats

Kopitov Environmental biologists evaluated the study area to determine if any areas met the definition of waters of the US, state and/or the County's zoning code and LCP. Field biologists generally followed the wetland determination methodology as described in the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and Arid West Supplement (USACE 2008). Kopitov Environmental L.L.C. biologists also assessed the surrounding habitat and land use types to evaluate potential effects on wildlife movement corridors and breeding habitats.

Special Status Species

The entire study area was accessed on foot with the exception of portions that were on private

land or in areas that were inaccessible as described below. Private lands and other inaccessible areas were visually assessed from nearby vantage points (i.e. roads, arroyo edge). All plant species in bloom, or otherwise recognizable, were identified to a level necessary to determine their regulatory status. All wildlife species observed or recognized by diagnostic sign (e.g., scat, tracks, prey remains, burrows, etc.) were recorded and identified.

Based on the findings of the field surveys, special status species lists were updated to include an assessment of the potential to support special-status species and to determine whether subsequent protocol-level surveys are recommended (appendix A, tables 2 and 3). Potential for occurrence is defined using the following categories.

1. None - Habitat requirements do not occur in the project area. No further surveys recommended.
2. Not Expected - Existing conditions or poor habitat quality make it unlikely that the species is present.
3. Possible - Suitable habitat present and documented occurrences recorded in the survey area or nearby.
4. Present - Species or species' sign was observed on the project area.

Botanical taxonomy and nomenclature in this report conforms to The Jepson Manual: Vascular Plants of California, 2nd Edition (Baldwin et. al. 2012). Common names of plant species were derived from The Calflora Database (Calflora 2015). Nomenclature for special-status plants conforms to the Online CNPS Inventory of Rare and Endangered Plants, 8th Edition (CNPS 2015) and Special Vascular Plants, Bryophytes and Lichens List (CDFW 2015). Wetland plant indicator status listings conform to the 2015 National Wetland Plant List (Lichvar 2013).

Limitation

Protocol-level plant and wildlife surveys were not conducted during the field survey. Negative survey findings may not indicate absence; however, determination of presence/absence within the study area was possible for some special-status plant and animal species referencing the following, but not limited to, blooming periods corresponding to the 2015 site visit, or the direct observation or presence of diagnostic signs for wildlife species.

Wetlands, waters, and/or riparian areas under the purview of state and local regulatory agencies may have broader jurisdictional scope and/or overlapping jurisdictions with that of the USACE. Final judgment of potentially jurisdictional wetlands, waters of the state and U.S., should be confirmed by the appropriate federal, state or local regulatory agency. Wetland and ordinary high water mark delineations were not completed due to topographic constraints (i.e. steep arroyo).

RESULTS

(at length, describe the botanical and zoological resources of the project site. To the extent possible, describe the food chain of the habitat and how the proposed project will impact those resources.

Kopitov Environmental L.L.C. senior biologists Anna Kopitov and Neal Kramer conducted a field survey of the study area on April 24, 2015. Background research of the above databases was conducted in April, 2015 for special status species and communities. Background research results appear in Appendix A.

FOOD CHAIN RESOURCES

The study area includes an undeveloped parcel, a grove of Monterey cypress trees, poison oak/blackberry and non-native grasses/ruderal vegetation with beach strawberry. These habitat types provide poor to moderate habitat for native plant species, and moderate habitat for native wildlife species. Wildlife species that likely utilize the site include raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and Virginia opossum (*Didelphis marsupialis*). Amphibian and reptile species that may seek shelter or forage within the brush and riparian corridor nearby include California slender salamander (*Batrachoseps attenuatus*), Pacific tree frog (*Pseudacris regilla*), western fence lizard (*Sceloporus occidentalis*), and coast garter snake (*Thamnophis elegans*). Bird species that may utilize the ruderal vegetation for nesting, forage and shelter, poison oak scrub and Monterey cypress grove on site include migratory passerines such as house finch (*Carpodacus mexicanus*), song sparrow (*Melospiza melodia*), Bewick's wren (*Thryomanes bewicki*), and black phoebe (*Sayornis nigricans*), and raptors such as red-tailed hawk (*Buteo jamaicensis*).

POTENTIALLY JURISDICTIONAL WATERS

There were no potentially jurisdictional waters of the state or US on the project area. Dean Creek and associated riparian habitat are potentially jurisdictional waters of the County, State and US.

Dean Creek, an intermittent stream, flows adjacent to the project area at the bottom of a steep gully (arroyo) on the south boundary. A portion of Dean Creek flows through underground pipes and a portion flows on open channel (ESA 2014). The arroyo along the south boundary of the property was too steep to safely traverse; however, biologists examined the mouth of Dean Creek that flows to Kelp Cove, Fitzgerald Marine Reserve. An old, rusted, and broken metal pipe was observed on the bed of the creek. It could not be determined how far this pipe continued upstream but it is presumed this pipe may run the length of the creek until it is undergrounded. The creek bed was damp with no standing water observed in the accessible portion of the creek bed (approximately 60-100 feet from mouth); a shallow amount of water (<1-inch deep) was observed inside the pipe at about 100 feet upstream of mouth.

Hydrophytic plants on the creek bed and bank approximately 60 - 75 feet upstream of the creek mouth included arroyo willow (*Salix lasiolepis*), *Typha species (sp.)*, hoary stinging nettle (*Urtica dioica ssp. holosericea*), watercress (*Nasturtium officinale*), water parsley (*Oenanthe sarmentosa*), silver weed cinquefoil (*Potentilla anserine*) and curly dock (*Rumex crispus*). Hydrophytic plants appeared to be restricted to the creek bed around the pipe. *Typha sp.* was also observed further upstream covering a larger area possibly indicating a potential wetland or a wider stream bed.

Other plant species observed at the toe of the arroyo and within the creek bed and bank included Italian stone pine (*Pinus pinea*), garden nasturtium (*Tropaeolum majus*), cape ivy (*Delairea odorata*), pampas grass (*Cortaderia selloana*), periwinkle (*Vinca species*), wild radish (*Raphanus sp.*), and iceplant/hottentot fig (*Carpobrotus edulis*).

Monterey cypress lined the top of the arroyo and continued down the slope. A portion of the arroyo adjacent to the project boundary was degraded by human use (i.e. rope swings on the cypress trees). There was no visible understory.

VEGETATION COMMUNITIES, SENSITIVE HABITATS AND SPECIAL STATUS SPECIES

Plant Communities

The study area consisted of five general vegetative communities described below (figure 2). Refer to Appendix B for a complete list of plants observed during the field surveys.

Non-native Grassland/Ruderal. Non-native Grassland/Ruderal vegetation covers the majority of the project site. “Ruderal” refers to areas that have been heavily impacted by human disturbance, such as roadsides and old fields/vacant lots, and support vegetation that is adapted to that type of environment. Ruderal species recorded within the study area were primarily non-native. The dominant species included non-native gazania and non-native grasses. Few native grass species detected included California brome (*Bromus carinatus* var. *carinatus*) and California hairgrass (*Deschampsia cespitosa* ssp. *holciformis*). Beach strawberry (*Fragaria chiloensis*) was observed on this community, concentrated mostly around a Monterey cypress and bordering the dense poison oak/California blackberry patch. Iceplant (*Carpobrotus edulis*) was also present on the study area.

Monterey Cypress. Cypress trees line the southern boundary of the parcel, along and downward on the arroyo slopes. The understory was characterized by bare ground and non-native plants. A single cypress tree, growing apart from the grove, was observed on the southern portion of the project area.

Poison Oak/California Blackberry. A poison oak/California blackberry was on the southern portion of the parcel (Figure 2). The poison oak/California blackberry habitat included common yarrow, bee plant, wild radish and stinging nettle. This community was adjacent to the cypress grove and bordering the arroyo. California blackberry was also found throughout the arroyo.

Herbaceous/Ruderal. A dense cover, dominated by non-native species, was observed on the arroyo slopes and bottom. Dominant species included periwinkle (*Vinca* sp.), nasturtium, cape ivy, California blackberry, and iceplant.

Wetland/Riparian. Hydrophytic plants were observed along the sides of the pipe on the creek bed. Species included Typha species, watercress, water parsley, and stinging nettle.

Sensitive Habitats

The Section 7.1 of the County of San Mateo LCP 7.1 defines Sensitive Habitats

“as any area in which plant or animal life or their habitats are either rare or especially valuable and any area which meets one of the following criteria: (1) habitats containing or supporting “rare and endangered” species as defined by the State Fish and Game Commission, (2) all perennial and intermittent streams and their tributaries, (3) coastal tide lands and marshes, (4) coastal and offshore areas containing breeding or nesting sites and coastal areas used by migratory and resident water-associated birds for resting areas and feeding, (5) areas used for scientific study and research concerning fish and wildlife, (6) lakes and ponds and adjacent shore habitat, (7) existing game and wildlife refuges and reserves, and (8) sand dunes. Sensitive habitat areas include, but are not limited to, riparian corridors, wetlands, marine habitats, sand dunes, sea cliffs, and habitats supporting rare, endangered, and unique species. In addition to the intermittent creek discussed above, the study includes sea cliffs (bluffs).”

Four sensitive habitats were observed on the study area: habitats supporting rare and endangered

Fitzgerald Marine Reserve

0 40 80 Feet

Legend

- Dean Creek Pipe
- Dean Creek Habitat
- Project Area

Habitats

- Monterey cypress
- beach strawberry
- cattail (*Typha* sp.)

- grassland and ruderal
- herbaceous
- iceplant
- poison oak

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Study Area Aerial View

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Figure 3
Study Area Vegetation
and Habitats



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species; Dean Creek; Fitzgerald Marine Reserve, an existing game and wildlife refuges and reserves; and sea cliffs (bluffs). Dean Creek, Fitzgerald Marine Reserve and vegetation communities of the study area have the potential to

Dean Creek

Dean Creek is an intermittent stream that provides potentially suitable habitat for rare, endangered and special status species. Per San Mateo County Local Coastal Program Policy 7.1, all intermittent streams are defined as sensitive habitats. Policy 7.3 (b) Protection of Sensitive Habitats states: "Development in areas adjacent to sensitive habitats shall be sited and designed to prevent impacts that could significantly degrade the sensitive habitats. All uses shall be compatible with the maintenance of biologic productivity of the habitats." The required buffer zone, pursuant to 7.11 Establishment of Buffer Zones (b), requires a 30-foot buffer zone from the midpoint of intermittent streams where no riparian vegetation exists along both sides of riparian corridors.

The project would have no impact on the intermittent stream or associated wetland vegetation. Dean Creek elevation ranges from 10 feet to 62 feet (creek mouth to Cabrillo Highway). The stream's elevation south of the project site is approximately 35 feet. The stream's centerline was approximately 28 to 40 feet from the project area. The proposed scenic easement would exceed the LCP intermittent stream buffer zone of 30-feet. The mid-point was based on the observed pipe located on the streambed and a review of the USGS NHD.

Fitzgerald Marine Reserve

The Fitzgerald Marine Reserve is managed by the County of San Mateo Parks Department. It is an Ecological Reserve by State of California designation authorized by the Marine Resources Protection Act of 1990 (California Fish and Game Code, Article 4, Section 1580-1584) (County Parks Department 2015). The ecological reserve is intended to protect natural areas with use restricted to scientific research relating to the management and enhancement of marine resources. Except as authorized in conjunction with scientific research approved by the California Department of Fish and Game and the San Mateo County Department of Parks, no disturbance or taking of marine life, archaeological resources or geological formations is allowed, and no fishing or collecting is permitted (County Parks Department 2015). The project would not impact the marine reserve.

Sea Cliffs

The project would not impact the sea cliff with the implementation of the required 50-foot setback.

List and discuss all probable impacts to threatened, rare, endangered or unique species either listed or proposed by the Local Coastal Program, a Federal or State agency, or the California Native Plant Society, both on-site and within an area of one-quarter mile radius from the project location.

Special Status Plants

Based on the review of available databases and literature for the six-quad search area, 56 special-status vascular and non-vascular plant species were identified with the potential to occur (CDFW 2015; CNPS 2015; USFWS 2015). Table 2 in appendix A describes each species, its habitat requirements, regional occurrences, listing status and potential to occur in the study area. Special status plant species known to occur within 3 miles the vicinity of the study area are shown in figure 3. Representative photographs of the study area appear in appendix B.

No special status species were detected during the field visit. Suitable habitat may be present for (*Potentilla hickmanii*) and coastal marsh milk-vetch on the Dean Creek habitat. Two CNPS listed species, coast yellow leptosiphon (*Leptosiphon croceus*) and rose leptosiphon (*L. rosaceus*), could have the potential to occur on the study area based on background research. However, these were deemed absent with no potential to occur because none were detected during the survey that was conducted in the peak blooming period. The peak blooming period was confirmed by visiting to two reference populations located within 1 mile of the project.

There were no USFWS-designated critical habitats for plant species within 5 miles of the project area. A complete list of plant species observed during the field survey is included with this report as appendix C. Hydrophytic plants are classified according to the *Arid West, 2013 Regional Wetland Plant List* (Lichvar 2013).

Special Status Wildlife

Based on a six-quadrant query of special-status wildlife, a total of 32 special status wildlife species were considered to have potential to occur (appendix A). CNDDDB special-status wildlife species recorded within five miles of the study area are shown in figure 4. A summary of the formal status, habitat affinities, and potential for occurrence within the study area for each of the wildlife species assessed is presented in appendix A, table 3. No special-status species or signs of special status species were detected during the field survey. Species dependent upon ocean and beach habitat are not included in this analysis because the project would have no impact to salt water and beach habitats.

Six special-status or unique species have the potential to occur in the study area: monarch butterfly (*Danaus plexippus*), California red-legged frog (*Rana draytonii*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), salt marsh common yellowthroat (*Geothlypis trichas sinuosa*), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), and hoary bat (*Lasiurus cinereus*). These species have the potential to occur in the study area due to nearby occurrences and/or potentially suitable habitat.

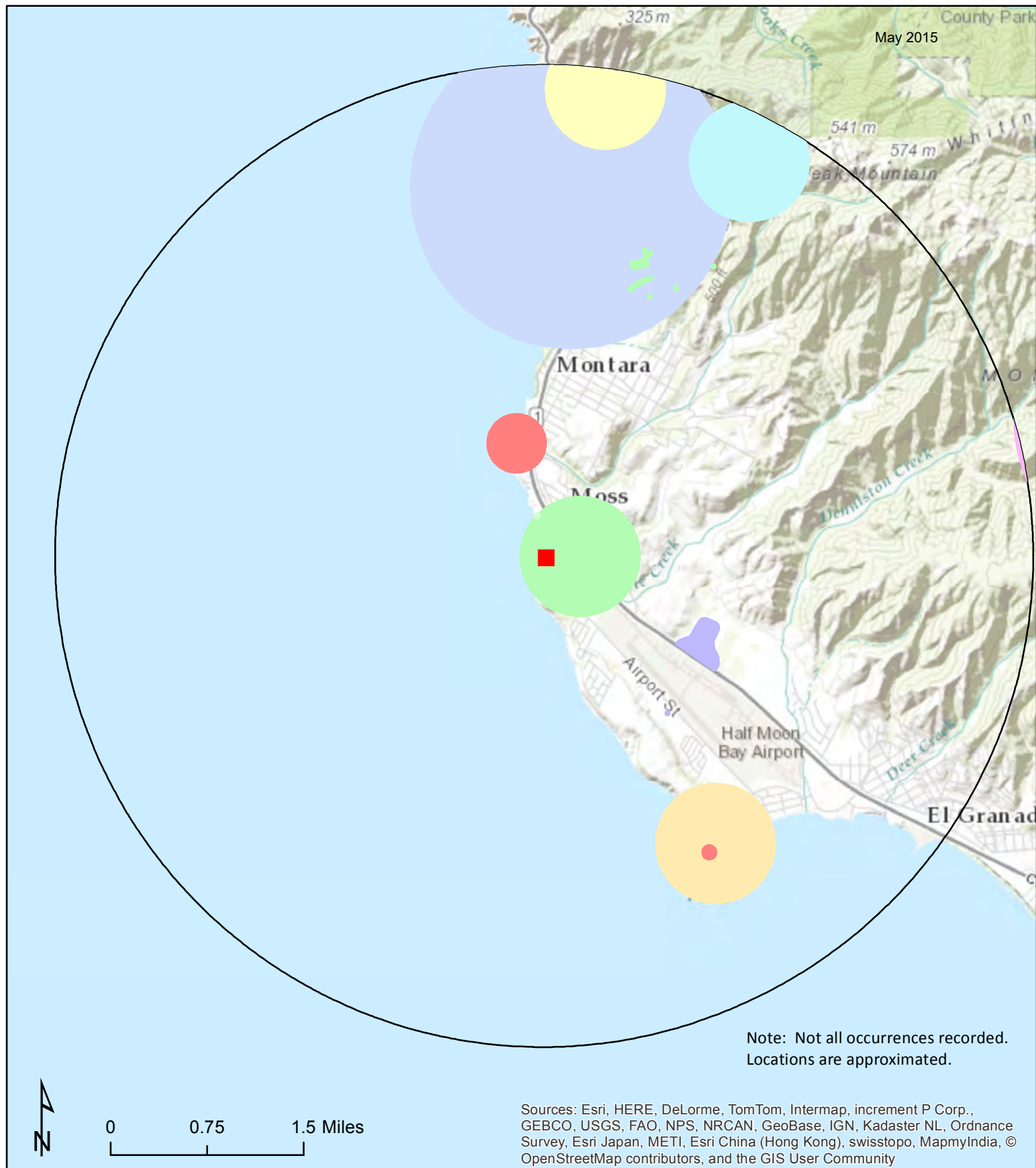
Monarch Butterfly (*Danaus plexippus*)

The nearest known roost site is located approximately 2 miles east of the project. The Monterey cypress, on the project area, has the potential to provide winter roosting habitat. Threats to monarch butterflies include loss of winter roost habitat. Tree removal on the project area could result in a less than significant impact to potential winter roosting habitat as the majority of the cypress grove would not be affected by the project.

California red-legged frog (*Rana draytonii*)

The California red-legged frog (CRF) is a federally threatened species and a California Species of Special Concern. These ranids spend the majority of their lives in or near ponds, marshes, springs, streams, and reservoirs. Aquatic areas characterized by deep pools and associated dense stands of overhanging willows and cattails are considered optimal habitat. CRF have been documented to breed in artificial ponds (i.e. stock and agricultural ponds) as well as natural ponds and wetlands. Breeding occurs generally between November and March and frogs often lay their eggs during or shortly after large rainfall events in late winter or early spring. Their eggs require 11-20 weeks for larval development (Stebbins and McGinnis 2011).

CRF were recorded moving long distances over land between water sources during winter rains



Legend

- | | |
|--|--|
| ■ Project | ■ San Francisco campion |
| Three mile buffer | ■ San Francisco gumplant |
| ■ Franciscan thistle | ■ coast yellow leptosiphon |
| ■ Hickman's cinquefoil | ■ coastal marsh milk-vetch |
| ■ Kings Mountain manzanita | ■ rose leptosiphon |
| ■ Ornduff's meadowfoam | |

Figure 4

CNDDDB Special Status Plants within a 3-mile radius



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with movements occurring mostly at night. Bulger et al. (2003) documented adult California red-legged frog moving more than 2 miles “without apparent regard to topography, vegetation type, or riparian corridors” in northern Santa Cruz County. Upland habitat requirements include a blend of riparian, upland dispersal habitats with downed woody vegetation, leaf litter, and small mammal burrows, which provide protection from predation and desiccation.

The USFWS has designated four primary constituent elements (PCEs) considered to be essential for the conservation or survival of this species. These include aquatic breeding habitat, non-breeding aquatic habitat, upland habitat, and dispersal habitat (USFWS 2006). Dispersal habitat includes accessible upland or riparian habitats between occupied locations within 0.7 miles of each other that allow for movement between sites. Moderate to high density urban or industrial developments, large reservoirs and heavily traveled roads without bridges or culverts are considered barriers to dispersal (USFWS 2006).

Critical Habitat. Federally designated critical habitat is located within approximately 0.5 miles east of the study area.

Habitat assessment and occurrence in the study area. CRF adults or juveniles were not observed during the site visit; however, CRF have been found within approximately 1.5 miles to the south near ponds located west of the Half Moon Bay Airport and a sighting was reported during the construction of the nearby Fitzgerald Marine Reserve Dardenelle Trail in 2012. Since the study area was within species’ dispersal range, the potential for occurrence in study area remains. Breeding habitat was not observed on the project area.

Threats. California red-legged frogs are threatened by a variety of human caused actions such as urban development, wetland habitat loss and habitat fragmentation. CRF also fall prey to species such as domestic cats, raccoons, snakes and bullfrogs.

San Francisco garter snake (*Thamnophis sirtalis tetrataenia*)

The San Francisco garter snake (SFGS) is a federal and state listed endangered species and it is a fully protected species under Section 5050 of the CFGC. Historically, SFGS’s range was restricted to the San Francisco Peninsula from just south of the San Francisco-San Mateo County border along the eastern and western base of the Santa Cruz Mountains. While some local populations may have been either extirpated or diminishing, the species’ range may not have changed (USEPA 2010).

Prime habitats include aquatic habitats with dense vegetation, preferably near open hillsides, and with shallow water edges (EPA 2010). The SFGS’s peak activity occurs during spring and early summer when they are typically found near ephemeral ponds hunting Pacific tree frogs (*Pseudacris regilla*) that use the shallow ponds for breeding. As the ephemeral ponds dry, SFGS move to more permanent aquatic habitats where CRF breed, another valuable prey source. Other prey species include California newts (*Taricha torosa*), western toads (*Anaxyrus boreas*), and mosquito fish (*Gambusia affinis*). SFGS also requires suitable upland habitats for basking, shelter and hibernacula (Stebbins 2011; EPA 2010).

Upland habitat characteristics include, but are not limited to, open grassy habitat, coyote bush (*Bacharis pilularis*), wild oat (*Avena fatua*), wild barley (*Hordeum spp.*) and various brome species (*Bromus spp.*) (USFWS 2006; Larsen 1994). Shrub species likely provide sufficient cover from predators and grasses provide exposed surfaces for basking (USFWS 2006). San Francisco garter snake also retreat to shelters for dormant periods (hibernacula); upland habitats inhabited by fossorial mammals, such as Botta’s pocket gopher, provide

important hibernacula.

Mating occurs generally during early warm days of spring as snakes emerge from hibernacula and disperse to nearby aquatic habitat (EPA 2010). Females retain fertilized eggs inside their body until hatching, generally in July and August, so that SFGS offspring are born live and independent (EPA 2010). A single female may produce 12-24 offspring (EPA 2010).

Threats. San Francisco garter snakes are threatened by a variety of human caused actions such as urban development, wetland habitat loss and habitat fragmentation. San Francisco garter snake also fall prey to species such as domestic cats, raccoons and bullfrogs.

Critical Habitat. Critical habitat has not been designated for this species.

Habitat assessment and occurrence in the study area. The historic range for SFGS includes the entirety of San Mateo County (USFWS 2006). The nearest occurrence was approximately 1.5 miles south of the study area. Since the project area was within species' dispersal range, there was the potential for Dean Creek and the study area could provide dispersal and upland habitat for this species.

San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)

The San Francisco dusky-footed woodrat is a CDFW species of special concern. This species typically inhabits brushy and forested habitats in California. The woodrat builds mounded, multi-chambered stick complexes, often referred to as lodges, which range from 4 to 8 feet in diameter and up to 6 feet in height.

San Francisco dusky-footed woodrat structures were not observed on the study area but since the creek habitat was inaccessible it was not possible to eliminate the species potential for occurrence in the arroyo. The study area provided potential for San Francisco dusky-footed woodrat to use the poison oak and Monterey cypress habitat for forage and nesting.

Threats. Habitat loss and anthropogenic disturbance threaten this species.

Salt marsh common yellowthroat (*Geothlypis trichas sinuosa*)

The salt marsh common yellowthroat is a California species of special concern. It is a year round resident of San Mateo County. Its primary habitat includes dense vegetation of wetlands, marshes, estuaries, prairies and riparian areas that are used for nesting and foraging. The nearest recorded occurrence was approximately 1.8 miles south of the project in Princeton Marsh (CNDDDB 2012). This species was not detected during the site visit; however, Dean Creek has potentially suitable habitat to support this species.

Bats

All bat species are given special consideration under CEQA. Bats could roost in nearby structures and Monterey cypress and may forage over the site. Threats include loss of habitat and mortality due to human activities.

Migratory Nesting Birds and Raptors

The Monterey cypress and poison oak provide suitable nesting and foraging habitat for migratory nesting birds and raptors.

Migration, Travel Corridors and Habitat Fragmentation

The project would result in the loss of some habitat that could potentially be used for migration and travel corridors; however, the project would likely result in less than significant adverse effects to the movement of native resident species or migratory wildlife species or corridors. The arroyo, sea cliffs and adjacent vacant lot would continue to provide connectivity to migration and travel corridors.

The following wildlife species, or signs of wildlife, were detected during the 2015 field survey: American bushtit (*Psaltriparus minimus*), chestnut-backed chickadee (*Poecile rufescens*), house finch (*Carpodacus mexicanus*), killdeer (*Charadrius vociferous*) and California towhee (*Pipilo crissalis*). Signs of Botta's pocket gopher (*Thomomys bottae*), domestic dog (*Canis lupus familiaris*), and domestic cat (*Felis catus*) were detected on the study area.

DISCUSSION, IMPACT ANALYSIS AND MITIGATION MEASURES

The impact assessment was based on the project information provided by Carlos Zubieta, architect, standard building practices for single-family residences, and the standards of significance described below. The impact assessment discusses impacts to the study area. Avoidance and mitigation measures are presented in table 1.

STANDARDS OF SIGNIFICANCE

The following thresholds for measuring a project's environmental impacts are based on Appendix G of the CEQA Guidelines and previous standards of significance used by the City (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15000 et seq.).

For the purpose of this report, impacts are considered significant if the following could result from implementation of the proposed project:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, endangered, threatened, or other special status in local or regional plans, policies and regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies and regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, coastal, riverine, stream, marsh, vernal pool, etc.) as a result of direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

- Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.
- CEQA Guidelines Section 15380 further provides that a plant or wildlife species may be treated as "rare or endangered" even if not on one of the official lists if it is likely to become endangered in the foreseeable future.

An evaluation of the significance of potential impact on biological resources must consider both direct effects to the resource as well as indirect effect in a local or regional context. Potentially significant impacts would generally result in the loss of a biological resource or obviously conflict with local, state, or federal agency conservation plans, goals, policies, or regulations. Actions that would potentially result in a significant impact locally may not be considered significant under CEQA if the action would not substantially affect the resource on a population-wide or region-wide basis. Impacts are denoted by BIO-IMP and mitigation measures are denoted by BIO-MM.

IMPACTS AND MITIGATION MEASURES

Wetlands and Sensitive Habitats. The Project would not result in substantial adverse effects to any County, State or Federally protected wetlands or streams through direct removal, filling, hydrological interruption, or other means provided appropriate buffer areas and construction best management practices are implemented. However, construction activities could increase stormwater runoff to Dean Creek. Implementation of mitigation measures such as sediment and erosion control best management practices would reduce impacts to less than significant. See table 1, BIO-IMP 1 and BIO-MM1.

Special Status Species.

The project would result in no impacts to special status plants. Although some special status plants occur within one mile of the project area, field surveys conducted during peak blooming period found no special status plants on the project area or no potentially suitable habitat on the project area.

Beach strawberries were observed on the project area and would be impacted by the project clearing. California wild strawberry is regulated by the LCP as stated below.

Policy 7.49 Require any development, within one-half mile of the coast, to mitigate against the destruction of any California wild strawberry in one of the following ways:

- a) Prevent any development, trampling, or other destructive activity which would destroy the plant; or
- b) After determining specifically if the plants involved are of particular value, successfully transplant them or have them successfully transplanted to some other suitable site. Determination of the importance of the plants can only be made by a professional doing work in strawberry breeding.

This California wild strawberry population was determined to be of no significant value by a professional doing work with strawberry breeding (Mark Bolda, personal communication, May 7, 2015). Thus, mitigation would not be required for population.

Special status plant species occurring within a 3-mile radius were identified. Coastal marsh milk-vetch, Hickman's cinquefoil, rose leptosiphon and yellow leptosiphon habitat characteristics include the stream habitat and coastal bluff observed on the study area. The project would have no impact on the stream habitat, with implementation of stormwater best management practices to the stream habitat, thus, no impact to these species. There would be no impact to coastal bluff species because these species were deemed absent from the project area.

Construction activities could result substantial adverse effects to California red-legged frog and San Francisco garter snake in the form of direct mortality from construction activities and indirectly by interfering with dispersal. Both species have the potential for dispersal and movement from breeding ponds and creeks into the study area during significant rain events. Construction activities include, but are not limited to, vegetation removal, grading, staging and other construction related activities related to the proposed project. Implementation of mitigation measures would reduce potential adverse effects to less than significant.

At no time should California red-legged frog and San Francisco garter snake be handled, harassed or approached (i.e. picked up, trapped, or any action altering the natural behavior, etc.). If the species are observed, work shall stop until it leaves the worksite on its own, or if it does not leave, coordination with the USFWS and CDFW shall be implemented.

Implementation of BIO-MM2 would reduce impacts to less than significant.

Impacts to Nesting Migratory Birds and Raptors including salt marsh common yellowthroat. If the project activities coincide with the typical nesting bird season (February 15 to September 15), the project has the potential to result in substantial adverse effects to nesting birds as a result of nest abandonment or direct take of birds, young, nests, and eggs. Vegetation removal should occur, if possible, during the non-nesting period. Implementation of BIO-MM3 would reduce impacts to less than significant.

Impacts to San Francisco Dusky-footed Woodrat. The project could result in significant adverse effects to San Francisco dusky-footed woodrat if woodrats are nesting in the poison oak habitat. Implementation of BIO-MM4 would reduce effects to less than significant.

Impacts to Movement of Native Resident or Migratory Wildlife Species or Migratory Corridors. Although the project would eliminate some habitat, the arroyo, cypress grove and undevelopable adjacent lot will continue to provide movement corridors for native resident and migratory wildlife. The project would result in no impact to this resource.

Table 1 Impacts and Mitigation Measures

Impact	Mitigation Measure	Result
BIO-IMP 1: <i>Potential impacts to County, State or Federally protected wetlands or streams.</i> Less than significant with implementation of mitigation measures.	BIO-MM1: Implement stormwater best management practices to reduce stormwater related erosion in accordance with the County's LCP. Where sediment erosion control materials are installed, repaired or removed (i.e. wattles, silt fences, etc.), a qualified biologist should check the work area to ensure that sensitive species are not present or entrapped. Polymesh and/or other similar materials should not be used as these can entrap or snag reptiles, amphibians, or other small animals.	Implementing the mitigation measures would reduce any potential effects to wetlands or streams to less than significant by controlling sediment and erosion.
BIO-IMP 2: <i>Impacts to California red-legged frog and San Francisco garter snake.</i> Project could result in substantial adverse effects to CRF and SFGS in the form of direct mortality from construction activities, and indirectly by interfering with dispersal.	BIO-MM2: Avoid, minimize and mitigate for impacts to CRF and SFGS and their habitat. Within 48 hours prior to the onset of any project-related project activities qualified biologist should conduct pre-construction surveys of the project area to ensure that no CRF or SFGS are present. Immediately prior to vegetation removal or other construction activities, a biologist familiar with the habitat requirements of California red-legged frog and San Francisco garter snake shall conduct a preconstruction survey to determine whether any of these species is within the project area. A minimum 3-foot high exclusion fence shall be installed around the limits of construction, including clearing, grading, and staging, or the entire to create a barrier that would prevent CRF and SFGS from entering the project site unless otherwise directed by the County, USFWS or CDFW. No polymesh or similar materials should be used as fencing materials. The fencing should be removed only when all construction equipment is removed from the site. Fencing shall be inspected and any opening shall be repaired immediately. If openings are found, the project area shall be inspected by a biological monitor to ensure special status species have not entered the project area. If California red-legged frog or San Francisco garter snake are identified in the work area during preconstruction surveys or at any subsequent time during construction, construction activities in the immediate area shall halt until the species has left the area without interference. Vegetation or other materials should not be stockpiled at the worksite as it provides potential hiding areas for CRF and SFGS (and other wildlife species). Vegetation should be placed directly into a disposal container and removed from the area, as is practicable. If vegetation is stockpiled on the ground, removal should be conducted under the	Implementing mitigation measures would avoid or reduce adverse affects to California red-legged frog and San Francisco garter snake.

Table 1 Impacts and Mitigation Measures

Impact	Mitigation Measure	Result
	supervision of a qualified biologist. A worker education program and/or education materials prepared by a qualified biologist shall be provided to all workers on site prior to onset of activities. If required by the County, CDFW or USFWS, a biological monitor shall inspect the project area prior to the beginning of construction activities to ensure CRF and SFGS have not entered the project area. The designated biological monitor could be a construction team manager or supervisor trained in the identification of special-status species. Under no circumstances should CRF and SFGS be handled, relocated or otherwise harmed or harassed at any time. The County, USFWS and CDFW shall be notified immediately upon discovery of this species on the project areas.	
BIO-IMP 3: <i>Impacts to nesting migratory birds and raptors.</i> The project could result in nest destruction or nest abandonment during construction activities.	BIO-MM3: Pre-construction nesting bird surveys and buffer zones. If the project activities coincide with the nesting bird season (February 1 to September 15), pre-construction nesting bird surveys shall be conducted by a CDFW-approved biologist no more than 10 days prior to planned construction activities in order to locate nests within and adjacent to the proposed work area. For all migratory bird species, the survey will include nesting birds within an area 100 feet from the project. If no active nests are detected, construction activities can take place as scheduled. If an active nest is observed, the following shall be implemented: The project should be modified as necessary to avoid direct take of identified nest, eggs, and/or young. Modifications may include establishment of protective buffer as determined by a qualified biologists. Typical protective buffer zones are 50-feet for passerine nests and 250-feet for raptors. If construction activities are significantly impacted by the buffer zones, CDFW should be contacted to request a reduced buffer that would still protect nesting birds.	Nesting birds, including salt marsh common yellowthroat, would be protected from disturbance and harm.

Table 1 Impacts and Mitigation Measures

Impact	Mitigation Measure	Result
BIO-IMP 4: <i>Impacts to San Francisco Dusky-footed Woodrat</i>. The project could result in adverse effects to San Francisco dusky-footed woodrat in the form of nest destruction.	BIO-MM4: Pre-construction survey, Flag and Relocate Dusky-footed Woodrat Nests. Prior to the start of vegetation removal, a biologist familiar with the species and its habitat requirements shall survey for San Francisco dusky-footed woodrat nests within or immediately adjacent to the potential habitat (i.e. poison oak scrub). If no nests observed, then no further mitigation would be required. If nests are observed but would not be directly impacted by project activities, the biologist shall establish a 10-foot buffer around the nests using exclusion fencing to ensure they are not accidentally destroyed by construction activities. Exclusion fencing shall remain in place until project completion. If a nest is found within the vegetation clearing area, a qualified biologist shall disassemble the nest by hand and relocate/reconstruct it beyond the work area.	Mitigation measures would protect San Francisco dusky-footed woodrats by reducing potential for harm.
BIO-IMP 5: Potential impacts to roosting bats. Bats may roost in cypress trees on the project site. Tree removal or pruning could result in bat mortality.	BIO-MM5: Preconstruction surveys. If trees are not removed or pruned, no further action is necessary. If trees are removed or pruned, a qualified biologist shall conduct a pre-construction bat roost survey to determine if bats are present in the trees. If bats are detected, suitable measures to avoid and/or exclude bats shall be determined by CDFW.	Mitigation measures would avoid injury to roosting bats.

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APPENDIX A
SPECIAL STATUS SPECIES
TABLES 2 AND 3

Table 2 Special Status Plant Species – Potential to Occur				
Scientific Name Common Name	STATUS		Elevation (meters) Blooms (period) Habitat (general description)	Potential for Occurrence
	CDFW/CNPS	FEDERAL, STATE		
<i>Acanthomintha duttonii</i> San Mateo thorn-mint	1B.1	FE, CE	Elevation: 50-300 Bloom Period: Apr-Jun Habitat: Chaparral, Valley Grassland	None. Project was outside of elevation range for species. Species was not observed during field surveys conducted within bloom period.
<i>Allium peninsulare</i> var. <i>franciscanum</i> Franciscan onion	1B.2	--	Elevation: 50-300 Bloom Period: May-Jun Habitat: Cismontane Woodland, Valley and Foothill Grassland	None. Project was outside of elevation range for species. Habitat was greatly disturbed by human activity.
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	1B.2	--	Elevation: 50-500 Bloom Period: Mar-Jun Habitat: Valley Grassland, Foothill Woodland	None. Project was outside of elevation range for species. Species was not observed during field surveys conducted within bloom period.
<i>Arctostaphylos andersonii</i> Anderson's manzanita	1B.2		Elevation: 60-760 Bloom Period: Nov-May Habitat: Chaparral, Mixed Evergreen Forest, Redwood Forest	None. Project was outside of elevation range for species and potentially suitable habitat was absent.
<i>Arctostaphylos franciscana</i> Franciscan manzanita	1B.1	FE	Elevation: 60-300 Bloom Period: Feb-Apr Habitat: Chaparral	None. Project was outside of elevation range for species and potentially suitable habitat was absent.
<i>Arctostaphylos imbricata</i> San Bruno Mountain manzanita	1B.1	CE	Elevation: 275-365 Bloom Period: Feb-May Habitat: Chaparral	None. Project was outside of elevation range for species and potentially suitable habitat is not present.
<i>Arctostaphylos montana</i> <i>ssp. ravenii</i> Presidio manzanita	1B.1	FE, CE	Elevation: 20-215 Bloom Period: Feb-Mar Habitat: Open rocky serpentine slopes, Coastal Scrub, Coastal Prairie, Chaparral	None. Suitable habitat was not present. Manzanitas were not observed on the project area.
<i>Arctostaphylos montaraensis</i> Montara manzanita	1B.2	--	Elevation: 150-500 Bloom Period: Jan-Feb Habitat: Chaparral, Northern Coastal Scrub	None. Project was outside of elevation range for species. Manzanitas were not observed on the project area.
<i>Arctostaphylos pacifica</i> Pacific manzanita	1B.2	CE	Elevation: not available Bloom Period: Feb-Apr Habitat: Coastal Scrub	None. Suitable habitat was not present. Manzanitas were not observed on the project area
<i>Arctostaphylos</i>	1B.2	--	Elevation: 305-730	None. Project was outside of elevation range

Table 2 Special Status Plant Species – Potential to Occur				
Scientific Name Common Name	STATUS		Elevation (meters) Blooms (period) Habitat (general description)	Potential for Occurrence
	CDFW/CNPS	FEDERAL, STATE		
<i>regismontana</i> Kings Mountain manzanita			Bloom Period: Jan-Apr Habitat: Chaparral, Mixed Evergreen Forest, North Coastal Coniferous Forest	range for species and potentially suitable habitat is not present. Manzanitas were not observed on the project area.
<i>Astragalus pycnostachyus</i> <i>var. pycnostachyus</i> coastal marsh milk vetch	1B.2	--	Elevation: 0-30 Bloom Period: Apr-Oct Habitat: wetland-riparian	Possible. Potentially suitable habitat present near Dean Creek. Nearest recorded occurrences within the Crystal Springs Reservoir area approximately 9 miles east.
<i>Astragalus tener</i> <i>var. tener</i> alkali milk vetch	1B.2	--	Elevation: 1-170 Bloom Period: Mar-Jun Habitat: Valley Grassland, alkali sink, freshwater wetlands, wetland-riparian, playas, vernal pools	None. Suitable habitat absent. Last recorded occurrence approximately 15 northeast, in 1868, possibly extirpated (CNDDDB 2015).
<i>Carex comosa</i> <i>bristly sedge</i>	2B.1	--	Elevation: 5-1005 Bloom Period: May-Sept Habitat: Freshwater Wetlands, wetland-riparian	None. Suitable habitat absent. Last recorded occurrence approximately 15 northeast, in 1868, possibly extirpated (CNDDDB 2015).
<i>Centromadia parryi</i> <i>ssp. parryi</i> Pappose tarplant	1B.2	--	Elevation: 2-420 Bloom Period: May-Nov Habitat: Coastal Prairie, Meadows, and Seeps, Coastal Salt Marsh, Valley and Foothill Grassland	Not. Expected. Suitable habitat (grassland) was highly disturbed by human use. Single recorded occurrence north within approximately 6 miles.
<i>Chloropyron maritimum</i> <i>ssp. palustre</i> Point Reyes salty bird's - beak	1B.2	--	Elevation: 0-10 Bloom Period: Jun-Oct Habitat: Coastal Salt Marsh	None. Suitable habitat was not present.
<i>Chorizanthe cuspidata</i> <i>var. cuspidata</i> San Francisco Bay spineflower	1B.2	--	Elevation: 3-215 Bloom Period: Apr-Jul Habitat: Coastal strand, Coastal Prairie, Northern Coastal Scrub.	None. Suitable habitat was not present. Nearest recorded occurrences approximately 6 miles north. Species was not observed during field visit within bloom period.

Table 2 Special Status Plant Species – Potential to Occur				
Scientific Name Common Name	STATUS		Elevation (meters) Blooms (period) Habitat (general description)	Potential for Occurrence
	CDFW/CNPS	FEDERAL, STATE		
<i>Chorizanthe robusta</i> var. <i>robusta</i> Robust spineflower	1B.1	FE	Elevation: 3-120 Bloom Period: Apr-Sep Habitat: Coastal strand, Foothill Woodland, Northern Coastal Scrub	None. Suitable habitat was not present. Nearest recorded occurrences approximately 11 miles north from 1913. Species not observed on site.
<i>Cirsium andrewsii</i> Franciscan thistle	1B.2	--	Elevation: 0-150 Bloom Period: Mar-Jul Habitat: Mixed Evergreen Forest, Northern Coastal Scrub, wetland-riparian	Not expected. Habitat was greatly disturbed. Species not observed during surveys conducted during bloom period. Nearest recorded occurrence approximately 2.25 miles north.
<i>Cirsium fontinale</i> var. <i>fontinale</i> Crystal Springs fountain thistle	1B.1	FE, CE	Elevation: 45-175 Bloom Period: May-Oct Habitat: Chaparral, Valley Grassland, wetland-riparian	None. Habitat was greatly disturbed. Project was below minimum elevation range for species.
<i>Cirsium occidentale</i> var. <i>compactum</i> Compact cobwebby thistle	1B.2	--	None.	Not expected. Habitat was greatly disturbed. Nearest recorded occurrence from 1957 approximately 13 miles north project.
<i>Collinsia multicolor</i> San Francisco collinsia	1B.2	--	Elevation: 30-250 Bloom Period: Mar-May Habitat: Northern Coastal Scrub, Closed-cone Pine Forest	Not expected. Habitat was greatly disturbed by human use. Nearest recorded occurrence approximately 4 miles north. Species was not observed during field surveys conducted during bloom period.
<i>Dirca occidentalis</i> Western leatherwood	1B.2	--	Elevation: 25-4425 Bloom Period: Jan-Mar Habitat: Chaparral, Foothill Woodland, Mixed Evergreen Forest, Closed-cone Pine Forest, North Coastal Coniferous Forest, wetland-riparian	None. Suitable habitat was not present.
<i>Eriophyllum latilobum</i> San Mateo woolly sunflower	1B.1	FE, CE	Elevation: 45-150 Bloom Period: May-Jun Habitat: Foothill Woodland	None. Project was outside of elevation range for species and potentially suitable habitat is not present.

Table 2 Special Status Plant Species – Potential to Occur				
Scientific Name Common Name	STATUS		Elevation (meters) Blooms (period) Habitat (general description)	Potential for Occurrence
	CDFW/CNPS	FEDERAL, STATE		
<i>Fritillaria biflora</i> var. <i>ineziana</i> Hillsborough chocolate lily	1B.1	--	Elevation: 90-160 Bloom Period: Mar-Apr Habitat: Valley and Foothill Grassland	None. Project was outside of elevation range for species.
<i>Fritillaria liliacea</i> fragrant fritillary	1B.2	--	Elevation: 3-410 Bloom Period: Feb-Apr Habitat: Coastal Prairie, Valley Grassland, Northern Coastal Scrub, wetland-riparian	None. Suitable habitat was not present. Fritillaries were not observed on the project area.
<i>Gilia capitata</i> ssp. <i>chamissonis</i> blue coast gilia	1B.1	--	Elevation: 2-200 Bloom Period: Apr-Jul Habitat: Coastal Dunes, Coastal Scrub	None. Suitable habitat was not present.
<i>Grindelia hirsutula</i> var. <i>maritima</i> San Francisco gumplant	3.2	--	Elevation: 15-400 Bloom Period: Jun-Sep Habitat: Valley Grassland, Northern Coastal Scrub, Coastal Sage Scrub, wetland-riparian	Not expected/Possible. Suitable habitat present but greatly disturbed by human use. Nearest recorded occurrence within approximately 1.5 miles north.
<i>Helianthella castanea</i> Diablo helianthella	1B.2	--	Elevation: 25-1150 Bloom Period: Mar-Jun Habitat: Chaparral, Foothill Woodland, Northern Coastal Scrub, Valley Grassland	None. Suitable habitat was not present or greatly disturbed. Nearest recorded occurrence 12 miles northeast..
<i>Hemizonia congesta</i> ssp. <i>congesta</i> congested-headed hayfield tarplant	1B.2	--	Elevation: 20-560 Bloom Period: Apr-Nov Habitat: Northern Coastal Scrub, Valley Grassland	None. Suitable habitat was not present. Species was not observed on the project area.
<i>Hesperovax sparsiflora</i> var. <i>brevifolia</i> short-leaved evax	1B.2	--	Elevation: 0-215 Bloom Period: Mar-Jun Habitat: Coastal Strand, Northern Coastal Scrub	None. Suitable habitat was not present. Species not observed on the project area.
<i>Hesperolinon congestum</i> Marin western flax	1B.1	FT, CE	Elevation: 5-370 Bloom Period: Apr-Jul Habitat: Chaparral, Valley Grassland	None. Suitable habitat was not present or greatly disturbed by human use. Species not observed during field surveys conducted during blooming period. Nearest recorded occurrence

Table 2 Special Status Plant Species – Potential to Occur				
Scientific Name Common Name	STATUS		Elevation (meters) Blooms (period) Habitat (general description)	Potential for Occurrence
	CDFW/CNPS	FEDERAL, STATE		
				approximately 9 miles east.
<i>Heteranthera dubia</i> water star-grass	2B.2	--	Elevation: 30-1495 Bloom Period: Jul-Aug Habitat: wetland-riparian	None. Habitat not present.
<i>Horkelia cuneata</i> var. <i>sericea</i> Kellog's horkelia	1B.1	--	Elevation: 10-200 Bloom Period: Feb-Jul Habitat: Northern Coastal Scrub, Costal Sage Scrub, Closed-cone Pine Forest	None. Suitable habitat was not present. Horkelia was not observed on the project area.
<i>Horkelia marinensis</i> Point Reyes horkelia	1B.2	--	Elevation: 5-30 Bloom Period: May-Sep Habitat: Coastal Strand, Coastal Prairie, Northern Coastal Scrub, (dunes, coastal)	None. Suitable habitat was not present. Nearest recorded occurrence greater than 10 miles east.
<i>Layia carnosa</i> beach layia	1B.1	FE, CE	Elevation: 0-60 Bloom Period: Mar-Jul Habitat: Coastal Strand, (dunes, coastal)	None. Suitable habitat was not present. Species not observed during field survey conducted during bloom period.
<i>Leptosiphon croceus</i> coast yellow leptosiphon	1B.1	--	Elevation: 10-150 Bloom Period: Apr-May Habitat: Coastal Bluff Scrub, Coastal Prairie	Not expected. Habitat greatly disturbed. Reference population in Moss Beach was reviewed same day as field surveys to determine bloom status (full bloom). Species was not observed during field surveys thus not expected on study area.
<i>Leptosiphon rosaceus</i> rose leptosiphon	1B.1	--	Elevation: 0-100 Bloom Period: Apr-Jul Habitat: Coastal Bluff Scrub	Not expected. Habitat greatly disturbed. Reference population in Moss Beach, just south of project, was reviewed same day as field surveys; this population was in bloom. It was not observed during field surveys conducted during bloom period.
<i>Lessingia germanorum</i> San Francisco lessingia	1B.1	FE, CE	Elevation: 20-110 Bloom Period: Jul-Nov Habitat: Northern Coastal Scrub	None - Not expected. Dune habitat not present. Nearest recorded occurrence greater than 10 miles north of project

Table 2 Special Status Plant Species – Potential to Occur				
Scientific Name Common Name	STATUS		Elevation (meters) Blooms (period) Habitat (general description)	Potential for Occurrence
	CDFW/CNPS	FEDERAL, STATE		
			(dunes)	
<i>Limnanthes douglasii</i> var. <i>ornduffii</i> (Ornduff's meadowfoam)	1B.1	--	Elevation: 10-20 Bloom Period: Nov-May Habitat: Agricultural fields, Meadows, Seeps	None. Potentially suitable habitat is not present.
<i>Malacothamnus aboriginum</i> Indian Valley bush-mallow	1B.2	--	Elevation: 150-1700 Bloom Period: Apr-Oct Habitat: Rocky, granitic, Chaparral, Cismontane Woodland	None. Project is outside of elevation range for species and potentially suitable habitat is not present.
<i>Malacothamnus arcuatus</i> arcuate bush-mallow	1B.2	--	Elevation: 15-355 Bloom Period: Apr-Sep Habitat: Chaparral, Cismontane Woodland	None. Potentially suitable habitat is not present.
<i>Malacothamnus davidsonii</i> Davidson's bush-mallow	1B.2	--	Elevation: 185-855 Bloom Period: Jun-Jan Habitat: Chaparral, Cismontane woodland, Coastal Scrub, Riparian Woodland	None. Project is outside of elevation range for species.
<i>Malacothamnus hallii</i> Hall's bush-mallow	1B.2	--	Elevation: 10-550 Bloom Period: May-Oct Habitat: Chaparral, Coastal Scrub, riparian	None. Habitat is greatly disturbed. Nearest recorded occurrence, 1902 and 1891, approximately 5 miles east on Montara Mountain.
<i>Monardella sinuata</i> ssp. <i>nigrescens</i> northern curly-leaved monardella	1B.2	--	Elevation: 0-300 Bloom Period: Apr-Sept Habitat: Dunes, openings in coastal scrub	None. Habitat highly degraded. Nearest recorded occurrence, from 1933, was possibly extirpated and located greater than 10 miles north of project.
<i>Monolopia gracilens</i> woodland woollythreads	1B.2	--	Elevation: 100-1200 Bloom Period: Habitat: Chaparral, Coastal Dunes, Coastal Scrub, Lower Montane Coniferous Forest	None. Project is below of elevation range for species. Nearest recorded occurrence is approximately 4 miles east of project.
<i>Pentachaeta bellidiflora</i> white-rayed pentachaeta	1B.1	FE, CE	Elevation: 35-620 Bloom Period: Mar-May Habitat: Cismontane Woodland,	None. Potentially suitable habitat is not present.

Table 2 Special Status Plant Species – Potential to Occur				
Scientific Name Common Name	STATUS		Elevation (meters) Blooms (period) Habitat (general description)	Potential for Occurrence
	CDFW/CNPS	FEDERAL, STATE		
			Valley and Foothill Grassland (often serpentine)	
<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i> Choris' popcornflower	1B.2	--	Elevation: 15-160 Bloom Period: Mar-Jun Habitat: Chaparral, Coastal Prairie, Coastal Scrub	None - Not expected. Habitat greatly disturbed. Species not observed during field survey conducted during bloom period. Nearest recorded species approximately 6 miles south of project.
<i>Polemonium carneum</i> Oregon polemonium	2B.2	--	Elevation: 0-1830 Bloom Period: Apr-Sep Habitat: Coastal Prairie, Coastal Scrub, Lower Montane Coniferous Forest	None Habitat greatly disturbed. Species not observed during field survey conducted during bloom period. Nearest recorded occurrence approximately 5 miles east from 1916.
<i>Polygonum marinense</i> Marin knotweed	3.1	--	Elevation: 0-10 Bloom Period: Apr-Oct Habitat: Marshes and Swamps (coastal salt or brackish)	None. Potentially suitable habitat is not present.
<i>Potentilla hickmanii</i> Hickman's cinquefoil	1B.1	FE, CE	Elevation: 10-149 Bloom Period: Apr-Aug Habitat: Coastal Bluff Scrub, Closed-cone Coniferous Forest, Meadows and Seeps, Marshes and Swamps (freshwater)	Possible. Potentially suitable habitat may present on the creek bed and the nearest recorded occurrence within the Moss Beach area. Species was not observed during field surveys conducted during bloom period.
<i>Sanicula maritima</i> adobe sanicle	1B.1	CR	Elevation: 30-240 Bloom Period: Feb-May Habitat: Chaparral, Coastal Prairie, Meadows and Seeps, Valley and Foothill Grassland	None. Potentially suitable habitat is not present/highly degraded. Last recorded occurrence from 1896 was greater than 10 miles north of project.
<i>Silene verecunda</i> ssp. <i>verecunda</i> San Francisco companion	1B.2	--	Elevation: 30-645 Bloom Period: Mar-Aug Habitat: Sandy, Coastal Bluff Scrub, Chaparral, Coastal Prairie, Coastal Scrub, Valley and Foothill Grassland	None - Not expected. Habitat is greatly disturbed. Species not observed during field survey conducted within bloom period. Nearest recorded occurrence approximately 4 miles east on Montara Mountain.
<i>Suaeda californica</i> California seablite	1B.1	FE	Elevation: 0-15 Bloom Period: Jul-Oct	None. Potentially suitable habitat is not present.

Table 2 Special Status Plant Species – Potential to Occur				
Scientific Name Common Name	STATUS		Elevation (meters) Blooms (period) Habitat (general description)	Potential for Occurrence
	CDFW/CNPS	FEDERAL, STATE		
			Habitat: Marshes and swamps (coastal salt)	
<i>Trifolium amoenum</i> showy rancheria clover	1B.1	FE	Elevation: 5-415 Bloom Period: Apr-Jun Habitat: Coastal Bluff Scrub, Valley and Foothill Grassland (often serpentinite)	None - Not expected. Habitat is greatly disturbed by human use. Nearest recorded occurrence was approximately 10 miles north from 1907.
<i>Trifolium hydrophilum</i> saline clover	1B.2	--	Elevation: 0-300 Bloom Period: Apr-Jun Habitat: Marshes and Swamps, Valley and Foothill Grassland, vernal pools	None. Potentially suitable habitat is not present or greatly disturbed by human use. Last observed in 1886 approximately 14 miles east.
<i>Triphysaria floribunda</i> San Francisco owl's-clover	1B.2	--	Elevation: 10-160 Bloom Period: Apr-Jun Habitat: Coastal Prairie, Coastal Scrub, Valley and Foothill Grassland	None. Habitat was greatly disturbed by human use. Nearest recorded occurrence approximately 7 miles east. Species not observed on field survey conducted during bloom period.
<i>Triquetrella californica</i> coastal triquetrella	1B.2	--	Elevation: 10-100 Bloom Period: not applicable Habitat: Coastal Bluff Scrub, Coastal Scrub	Not expected. Habitat was greatly disturbed by human use. Nearest recorded occurrence approximately 6 miles north.

TABLE 3 Special Status Wildlife Species – Potential to Occur				
Species	Status		Habitat Association	Potential for Occurrence
	Federal	State		
Invertebrates				
<i>Callophrys mossii bayensis</i> San Bruno elfin butterfly	FE	--	Valley and Foothill Grassland. Coastal, mountainous areas with grassy ground cover, mainly in the vicinity of San Bruno Mountain, San Mateo County. Larval host plant is <i>Sedum spathulifolium</i>	None. Species is restricted to San Bruno Mountain area. Larval host plant was not present.
<i>Danaus plexippus</i> Monarch butterfly	--		Closed-coniferous forest. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	Possible. Cypress trees located on arroyo and project site could provide overwintering roosting habitat, although these trees may not be wind protected.
<i>Euphydryas editha bayensis</i> Bay checkerspot butterfly	FT	--	Coastal dunes, Valley and Foothill Grassland, ultramafic. Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. <i>Plantago erecta</i> is the primary host plant; <i>Orthocarpus densiflorus</i> & <i>O. purpurscens</i> are the	None. Species restricted to Crystal Springs area and near San Francisco Bay. Host plants were absent from site.
<i>Plebejus icarioides missionensis</i> Mission blue butterfly	FE	--	Coastal prairie. Inhabits grasslands of the S Francisco peninsula. Three larval host plant <i>Lupinus albifrons</i> , <i>L. variicolor</i> , and <i>L. formosus</i> of which <i>L. albifrons</i> is favored.	None. Potentially suitable habitat was absent. Nearest population is within San Bruno Mountain area.
<i>Speyeria callipe callipe</i> callipe silverspot butterfly	FE	--	Coastal scrub. Restricted to the northern coastal scrub of the San Francisco peninsula. Host plant is <i>Viola pedunculata</i> . Most adults found on E-slopes; males congregate on hilltops in sea view areas.	None. Potentially suitable habitat was not present. Only known population is on San Bruno Mountain.

TABLE 3 Specialt Status Wildlife Species – Potential to Occur				
Species	Status		Habitat Association	Potential for Occurrence
	Federal	State		
<i>Speyeria zerene myrtleae</i> Myrtle's silverspot butterfly	FE	--	Coastal dunes. Restricted to the foggy, coastal dunes/hills of the Point Reyes peninsula. Larval food plant thought to be <i>Viola adunca</i> .	None. Potentially suitable habitat was absent. Populations south of Golden Gate Bridge thought to be extirpated.
Fish				
<i>Eucyclogobius newberryi</i> tidewater goby	FE	SSC	Brackish water habitats along the Calif coast from Agua Hedionda Lagoon, San Diego Co. to the mouth of the Smith	None. Potentially suitable habitat is not preset.
<i>Mylopharadon conocephalus</i> hardhead	--	SSC	Low to mid-elevation streams in the Sacramento-San Joaquin drainage. Also present in the Russian River.	None. Potentially suitable habitat is not present.
<i>Oncorhynchus mykiss irideus</i> Steelhead -Central Coast DPS	FT	--	From Russian River, south to Soquel Cr & to, but not including, Pajaro River. Also San Francisco & San Pablo Bay basins.	None. Potentially suitable habitat is not present. Dean Creek mouth has no evident direct connection to Pacific Ocean or any other creeks or
<i>Spirinchus thaleichthys</i> Longfin smelt	FC	CT	Euryhaline, nektonic & anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column.	None. Potentially suitable habitat was absent.
Amphibians				

TABLE 3 Special Status Wildlife Species – Potential to Occur				
Species	Status		Habitat Association	Potential for Occurrence
	Federal	State		
<i>Ambystoma californiense</i> California tiger salamander	FT	CT, SSC	Cismontane woodland, Meadow & seep, Riparian woodland, Valley & foothill grassland, Vernal pool, Wetland. Central Valley DPS federally listed as threatened. Santa Barbara & Sonoma counties DPS federally listed as endangered. Need underground refuges, especially ground squirrel burrows, & vernal pools or other seasonal water sources for breeding.	None. Potentially suitable habitat was absent. There are no coastal occurrences and the nearest recorded occurrences are near Stanford University.
<i>Rana draytonii</i> California red-legged frog	FT	SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to aestivation habitat.	Possible. Nearest recorded occurrence within 1 mile of project west of Half Moon Bay Airport. Site may provide dispersal habitat. Breeding habitat was absent on project site. Aestivation habitat was low quality with low density of pocket gopher burrows.
Reptiles				
<i>Actinemys marmorata</i> Western pond turtle	--	SSC	Ponds, marshes rivers, streams, and irrigation ditches that have emergent or riparian vegetation and sunny basking sites. Upland nesting habitat consists of friable soil exposed to full sun.	None. Potentially suitable habitat was absent.
<i>Thamnophis sirtalis tetrataenia</i> San Francisco garter snake	FE	CE, FP	Vicinity of freshwater marshes, ponds and slow-moving streams in San Mateo County & extreme northern Santa Cruz County. Prefers dense cover & water depths of at least one foot. Upland areas near water are also very important.	Possible. Site may provide dispersal habitat. Nearest recorded occurrence within 1.5 miles. Aestivation habitat was low quality with low density of pocket gopher burrows.
Birds				

TABLE 3 Special Status Wildlife Species – Potential to Occur				
Species	Status		Habitat Association	Potential for Occurrence
	Federal	State		
<i>Athene cunicularia</i> burrowing owl	BCC	SSC	Open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	None. Potentially suitable habitat was absent.
<i>Charadrius alexandrius nivosus</i> western snowy plover	FT	SSC	Sandy beaches, salt pond levees & shores of large alkali lakes.	None. Potentially suitable nesting habitat was absent. May
<i>Falco columbarius</i> merlin	--	WL	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands & deserts, farms & ranches. Clumps of trees or windbreaks are required for roosting in open country.	Not expected. Nesting habitat was not present. May pass through site during hunting.
<i>Falco peregrinus anatum</i> peregrine falcon	BCC	CS, FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	Not expected. Nesting habitat was not present. May pass through site during hunting.
<i>Geothlypis trichas sinuosa</i> Saltmarsh common yellowthroat	--	SSC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	Possible. Potentially suitable marsh habitat was not present; however, the Dean Creek habitat may provide suitable nesting habitat. Nearest occurrence within 1.5 miles at the Pillar Point Marsh.
<i>Laterallus jamaicensis coturniculus</i> California black rail	BCC	CT, FP	Inhabits freshwater marshes, wet meadows & shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year & dense vegetation for nesting habitat.	None. Potentially suitable habitat was absent.

TABLE 3 Special Status Wildlife Species – Potential to Occur				
Species	Status		Habitat Association	Potential for Occurrence
	Federal	State		
<i>Melospiza melodia pusillula</i> Alameda song sparrow	BCC	SSC	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits Salicornia marshes; nests low in Grindelia bushes (high enough to escape high tides) and in Salicornia.	None. Potentially suitable habitat was absent.
<i>Phalacrocorax auratus</i> double-crested cormorant	--	WL	Colonial nester on coastal cliffs, offshore islands, & along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	None. Potentially suitable nesting habitat was absent.
<i>Rallus longirostris obsoletus</i> California clapper rail	FE	CE, FP	Salt-water & brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-	None. Potentially suitable habitat was absent.
<i>Riparia riparia</i> bank swallow	--	CT	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	None. Potentially suitable habitat was absent.
Mammals				
<i>Antrozous pallidus</i> Pallid bat	--	SSC	Deserts, grasslands, shrublands, woodlands & forests. Most common in open, dry habitats with rocky areas for roosting.	None. Potentially suitable habitat was absent.
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	--	WL	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls & ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Not expected. Nearest recorded occurrence approximately 14 miles northeast.

TABLE 3 Special Status Wildlife Species – Potential to Occur				
Species	Status		Habitat Association	Potential for Occurrence
	Federal	State		
<i>Lasiurus cinereus</i> hoary bat	--	--	Prefers open habitats or habitat mosaics, with access to trees for cover & open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	Possible. Potentially suitable foraging habitat present. May roost on cypress trees.
<i>Myotis thysanodes</i> fringed myotis	--	--	In a wide variety of habitats, optimal habitats are pinyon-juniper, valley foothill hardwood & hardwood-conifer. Uses caves, mines, buildings or crevices for maternity colonies and roosts.	Not expected. Potentially suitable habitat absent. Nearest recorded occurrence approximately 6 miles east of project.
<i>Neotoma fuscipes annectens</i> San Francisco dusky footed rat	--	SSC	Forest habitats of moderate canopy & moderate to dense understory. May prefer chaparral & redwood habitats. Constructs nests of shredded grass, leaves & other material. May be limited by availability of nest-building materials.	Possible. Potentially suitable nest habitat was present among the poison oak/California blackberry habitat and Dean Creek habitat.
<i>Nyctinomops macrotis</i> big free-tailed bat	--	SSC	Low-lying arid areas in Southern California. Rare in California. Prefers rugged, rocky canyons.	None. Potentially suitable habitat was low quality. Only recorded unconfirmed occurrence was approximately 5 miles north in 1985.
<i>Reithrodontomys raviventris</i> salt-marsh harvest mouse	FE	CE, FP	Only in the saline emergent wetlands of San Francisco Bay and its tributaries.	None. Restricted to saline emergent wetlands. Potentially suitable habitat was absent.
<i>Taxidea taxus</i> American badger	--	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	None. Potentially suitable habitat was absent.

Status Legend

Federal:

FE - Listed as endangered under the Federal Endangered Species Act

FT - Listed as threatened under the Federal Endangered Species Act

FC - Listed as candidate species under the Federal Endangered Species Act

BCC - USFWS Bird of Conservation Concern

State:

CE - Listed as an endangered under the California Endangered Species Act

CT - Listed as a threatened under the California Endangered Species Act

CS - Listed as a candidate species under the California Endangered Species Act

SSC - Species of special concern under the California Endangered Species Act

FP – California fully protected species under the California Endangered Species Act

CNPS Rank:

1A Rare in California and elsewhere; presumed extirpated or extinct

1B Rare in California and elsewhere; rare, threatened, or endangered

2A Rare in California, but not elsewhere; presumed extirpated or extinct

2B Rare in California, but not elsewhere; rare, threatened, or endangered

APPENDIX B

PHOTOGRAPHS OF THE STUDY AREA

199 Arbor Lane
Biological Resources Survey

Photo 1 View of project area from northwest to northeast.



Photo 2 View of project area from northeast to northwest.



Photo 3 View of project area from west to north.



Photo 4 View of project area from north to west.



Photo 5 View from south to west.



Photo 6 Poison oak/California blackberry patch.



Photo 7 View of Dean Creek herbaceous cover from midslope of arroyo. Potentilla species visible running from the mid-right to upper left. Garden nasturtium, stinging nettle and wild radish visible.



Photo 8 View of Monterey cypress understory from top of the arroyo.



Photo 9 View of pipe on streambed. Typha sp. visible; garden nasturtium, cape ivy and wild radish are the dominant plants in photo.



Photo 10 View of Dean Creek upstream.

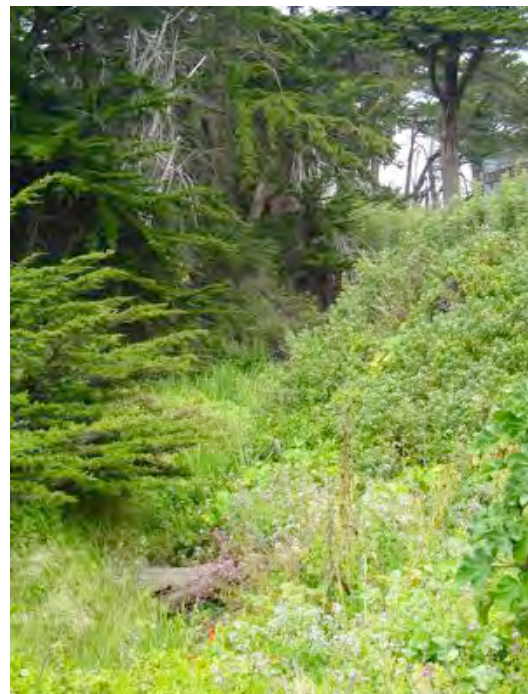


Photo 11 Beach strawberry on the proposed work area.



APPENDIX C
VASCULAR PLANT SPECIES OF 199 ARBOR LANE STUDY AREA

Plant Species List for 199 Arbor Lane, Moss Beach, California

The plant species listed below were observed on the project site during surveys conducted on April 24, 2015. Scientific nomenclature follows *The Jepson Manual* (Baldwin 2012).

* Indicates introduced non-native species.

Common Name	Scientific Name
AIZOACEAE - Fig-Marigold Family	
hottentot fig, iceplant	<i>Carpobrotus edulis</i> *
showy dewflower	<i>Drosanthemum floribundum</i> *
ANACARDIACEAE - Sumac or Cashew Family	
poison oak ⁴	<i>Toxicodendron diversilobum</i>
APIACEAE – Carrot Family	
water parsley ¹	<i>Oenanthe sarmentosa</i>
APOCYNACEAE - Dogbane Family	
periwinkle sp.	<i>Vinca sp.</i>
ASTERACEAE - Sunflower Family	
common soliva ⁴	<i>Soliva sessilis</i> *
common sow thistle ⁵	<i>Sonchus oleraceus</i> *
cotton-batting plant ³	<i>Pseudognaphalium stramineum</i>
gazania	<i>Gazania linearis</i> *
German/cape ivy	<i>Delairea odorata</i> *
pacific/coastal gumplant	<i>Grindelia stricta</i> var. <i>platyphylla</i>
prickly sow thistle	<i>Sonchus asper</i> ssp. <i>asper</i> *
rough cat's-ear ⁴	<i>Hypochaeris radicata</i> *
purple cudweed	<i>Gamochaeta ustulata</i>
Common yarrow ⁴	<i>Achillea millefolium</i>
BRASSICACEAE - Mustard Family	
Watercress ¹	<i>Nasturtium officinale</i>
wild radish	<i>Raphanus sativus</i> *
CARYOPHYLLACEAE - Pink Family	
common catchfly, windmill pink	<i>Silene gallica</i> *
mouse-eared chickweed ⁵	<i>Cerastium glomeratum</i> *
CUCURBITACEAE - Gourd Family	
California man-root	<i>Marah fabaceus</i>
CUPRESSACEAE - Cypress Family	
Monterey cypress	<i>Hesperocyparis macrocarpa</i> *
FABACEAE - Legume Family	
bird's foot trefoil ³	<i>Lotus corniculatus</i> *
Burclover ⁴	<i>Medicago polymorpha</i> *
common vetch ⁴	<i>Vicia sativa</i> *
little hop clover ⁵	<i>Trifolium dubium</i> *
sour clover ⁴	<i>Melilotus indicus</i> *
GERANIACEAE - Geranium Family	
cut-leaved geranium	<i>Geranium dissectum</i> *
red-stemmed filaree	<i>Erodium cicutarium</i> *
white-stemmed storksbill	<i>Erodium moschatum</i> *
LINACEAE - Flax Family	
narrowleaf flax	<i>Linum bienne</i> *
MALVACEAE - Mallow Family	
Cretian mallow	<i>Malva pseudolavatera</i> *

Common Name	Scientific Name
MYRSINACEAE - Myrsine Family	
scarlet pimpernel	<i>Anagallis arvensis</i> *
OXALIDACEAE - Oxalis Family	
Bermuda buttercup	<i>Oxalis pes-caprae</i> *
yellow/ creeping wood sorrel ⁴	<i>Oxalis corniculata</i> *
PAPAVERACEAE - Poppy Family	
California poppy	<i>Eschscholzia californica</i>
PINACEAE - Pine Family	
Italian stone pine	<i>Pinus pinea</i> *
PLANTAGINACEAE - Plantain Family	
cut-leaved plantain ²	<i>Plantago coronopus</i> *
English plantain ³	<i>Plantago lanceolata</i> *
POACEAE - Grass Family	
annual false brome	<i>Brachypodium distachyon</i> *
barnyard foxtail, foxtail barley	<i>Hordeum murinum ssp. leporinum</i> *
California brome	<i>Bromus carinatus var. carinatus</i>
California hairgrass	<i>Deschampsia cespitosa ssp. holciformis</i>
California oatgrass ⁴	<i>Danthonia californica var. californica</i>
pampas grass ⁴	<i>Cortaderia jubata</i> *
ripgut brome	<i>Bromus diandrus</i> *
rye grass	<i>Festuca perennis</i> *
six-week fescue	<i>Festuca bromoides</i> *
slender wild oat	<i>Avena barbata</i> *
soft chess ⁴	<i>Bromus hordeaceus</i> *
upright veldtgrass	<i>Ehrharta erecta</i> *
POLYGONACEAE - Buckwheat Family	
curly dock ³	<i>Rumex crispus</i>
fiddle dock ³	<i>Rumex pulcher</i> *
sheep sorrel ⁴	<i>Rumex acetosella</i> *
ROSACEAE - Rose Family	
beach strawberry ⁴	<i>Fragaria chiloensis</i>
California blackberry ³	<i>Rubus ursinus</i>
cotoneaster	<i>Cotoneaster sp.</i> *
silverweed cinquefoil ¹	<i>Potentilla anserina</i>
RUBIACEAE - Madder Family	
goose grass, bedstraw ⁴	<i>Galium aparine</i>
SALICACEAE – Willow Family	
arroyo willow ²	<i>Salix lasiolepis</i>
SCROPHULARIACEAE - Figwort Family	
California figwort, bee plant ³	<i>Scrophularia californica</i>
TROPAEOLACEAE – Nasturtium Family	
garden nasturtium ⁴	<i>Tropaeolum majus L.</i> *
TYPHACEAE – Cattail Family	
cattail sp. ¹	<i>Typha sp.</i>
URTICACEAE - Nettle Family	
hoary stinging nettle ²	<i>Urtica dioica ssp. holosericea</i>

Arid West Indicator categories

Indicator Code	Indicator Status	Designation	Comment
OBL	Obligate Wetland	Hydrophyte	Almost always occur in wetlands
FACW	Facultative Wetland	Hydrophyte	Usually occur in wetlands, but may occur in non-wetlands
FAC	Facultative	Hydrophyte	Occur in wetlands and non-wetlands
FACU	Facultative Upland	Nonhydrophyte	Usually occur in non-wetlands, but may occur in wetlands
UPL	Obligate Upland	Nonhydrophyte	Almost never occur in wetlands



County of San Mateo - Planning and Building Department

ATTACHMENT H



COAST RIDGE ECOLOGY^{LLC}

BIOLOGICAL SURVEYS • MONITORING • PERMITTING • RESEARCH

October 2, 2017

Carlos Zubieta
1725-A Abbot Kinney Boulevard
Venice, CA 90291

Subject: Update to Biological Resources Assessment Report and Response to Biological Information Requests for 199 Arbor Lane, Moss Beach, CA. (APN 037-123-043).

Dear Mr. Zubieta:

This letter-report provides an update to the Biological Resources Assessment for 199 Arbor Lane, Moss Beach, California (APN 037-123-043), prepared by Kopitov Environmental, LLC in May 2015. Included in this report is an updated CNDDDB map and review of potential presence of special status species on the property, and a map of the adjacent riparian corridor associated with Dean Creek.

This report addresses all biological related comments from the San Mateo County Coastsides Design Review Committee (CDRC letter dated July 24, 2017; PLN 2016-00444), and from the California Coastal Commission (CCC letter dated July 14, 2017; PLN 2016-00444) to the applicant in regards to biological resources on or adjacent to the property. Information reviewed included the following resources:

- County of San Mateo Local Coastal Program Policies (June 18, 2013)
- California Natural Diversity Database (CNDDDB)
- California Native Plant Society (CNPS) Rare Plant Inventory
- Biological Resource Assessment for 199 Arbor Lane, Moss Beach, CA, APN 037-123-043 prepared by Kopitov Environmental LLC, May 2015.

The project area is located on 199 Arbor Lane (a cul-de-sac) approximately 0.17 miles west of Highway 1 (The Cabrillo Highway), in Moss Beach, an unincorporated area of San Mateo County, California. The property is located on a coastal bluff approximately 40 feet from a bluff edge that drops steeply to the beach and the Pacific Ocean. The proposed building envelope is approximately 80 feet from the bluff edge and the Pacific Ocean (Figure 1). The proposed project is the construction of a single-family residence covering an estimated area of 3,198 square feet, plus a two-car garage of approximately 400 square feet.

Map of Riparian Buffer Zone for Dean Creek and Consistency with Section 7 of the San Mateo County LCP

Figure 1 shows a map of Dean Creek and the riparian corridor associated with Dean Creek, in proximity to the property at 199 Arbor Lane. Dean Creek is an intermittent creek that flows near the south side of the property. A Trimble GeoExplorer submeter accuracy GPS unit was used to map the creek, and the adjacent floodplain/riparian corridor on September 22, 2017. A 30-foot buffer from this corridor was measured and delineated from the outside edge of the riparian zone and is shown on Figure 1. Dean Creek is considered an intermittent creek, and the LCP states that for intermittent creeks, a 30-foot buffer is required from the outside edge of the riparian vegetation.

Section 7 of the San Mateo County Local Coastal Program Policies (2013) states the following:

ESTABLISHMENT OF BUFFER ZONES

7.11 a. *On both sides of riparian corridors, from the “limit of riparian vegetation” extend buffer zones 50 feet outward for perennial streams and 30 feet outward for intermittent streams.*

Under the definition of riparian corridors, the following is stated:

RIPARIAN CORRIDORS

7.7 Definition of Riparian Corridors

Define riparian corridors by the “limit of riparian vegetation” (i.e., a line determined by the association of plant and animal species normally found near streams, lakes and other bodies of freshwater: red alder, jaumea, pickleweed, big leaf maple, narrow-leaf cattail, arroyo willow, broadleaf cattail, horsetail, creek dogwood, black cottonwood, and box elder). Such a corridor must contain at least a 50% cover of some combination of the plants listed.

None of the plants listed in the LCP Section 7.7 definition of riparian are present within the riparian corridor section of Dean Creek downslope of the property at 199 Arbor Lane. Plant species within the creek and associated flood zone include a combination of native and non-native plant species such as Bur Reed (*Sparganium sp.*), California blackberry (*Rubus ursinus*), stinging nettle (*Urtica dioica*), wild radish (*Raphanus sp.*), nasturtium (*Tropaeolum majus*), and cape ivy (*Delairea oderata*). To delineate the outside edge of the riparian zone, the outside edge of the riparian wetland floodplain feature of Dean Creek was used. The boundary between the floodplain and upland area is evidenced by a visible soil, slope and vegetative change, and therefore this boundary was used as the practical boundary to measure the 30-foot buffer from the riparian zone (Figure 1, and Photos 1 and 2).

Dean Creek is shown as an unnamed intermittent stream on the USGS Montara Mountain OE W 7.5 minute quadrangle (2015). In most years, Dean Creek has intermittent flow whereas in higher rainfall years, such as 2016/2017, Dean Creek may have year-round flow. Residential land-uses in the area contribute additional flow to the creek, especially during the dry season due to yard irrigation and runoff/seepage to the Creek. During the riparian mapping on September 22, 2017, Dean Creek had some water present, in the low flow channel, and the wetted channel was approximately 1.5 feet wide and 2 inches deep.

The steep canyon upland slope that is in between the property and the riparian zone is dominated by large Monterey Cypress trees. There is very little understory vegetation, with the exception of invasive plants such as cape ivy (Photos 3 and 4). The riparian buffer zone extends upslope from the floodplain area and encompasses a large section of the steep slope dominated by Monterey Cypress trees. The development footprint for the project is located on the top of the coastal bluff, and is well outside of the riparian buffer zone. The distance from the floodplain/riparian boundary to the property line varies from approximately 50 to 70 feet. No impacts are expected to occur to the riparian buffer zone due to the placement of the project site on the top of the bluff. The project as designed is consistent with LCP policies 7.4, 7.9, and 7.10 (Permitted Uses in Riparian Corridors/ Sensitive Areas) as no components of the project are within or adjacent to, the riparian buffer zone (Figure 1).

Impacts to California Wild Strawberry (*Fragaria californica*)

Section 7.49 of the San Mateo County LCP states:

7.49 CALIFORNIA WILD STRAWBERRY (*FRAGARIA CALIFORNICA*)

Require any development, within one-half mile of the coast, to mitigate against the destruction of any California wild strawberry in one of the following ways:

- a. Prevent any development, trampling, or other destructive activity which would destroy the plant; or*
- b. After determining specifically if the plants involved are of particular value, successfully transplant them or have them successfully transplanted to some other suitable site. Determination of the importance of the plants can only be made by a professional doing work in strawberry breeding.*

Botanist Neal Kramer of Kramer Botanical, LLC identified the strawberry plants on the property as California beach strawberry (*Fragaria chiloensis*), and not California wild strawberry (*F. californica*). Mr. Kramer is a leading expert on coastside flora and made this determination based on the following:

*The leaflets of the beach strawberry (*Fragaria chiloensis*) are leathery, generally shiny and hairless on the upper surface, the marginal serrations are rounded obtuse and the central tooth on the tip of the leaflet is generally much smaller than adjacent teeth. Flower petals on the beach strawberry are generally 10-18mm, are larger than the those of the wood strawberry (*Fragaria vesca*), generally only 5-8mm. Leaflets on the wood strawberry are thinner, upper surface is sparsely hairy - not shiny and veins are distinctly depressed, marginal serrations are obtuse to acute and the central tooth may be larger to only slightly smaller than adjacent teeth.*

Wood strawberry (*Fragaria vesca*) is the currently accepted Jepson Manual 2012 name for the California wild strawberry (*F. californica*) referred to in the San Mateo County LCP. Based on this information, no mitigation requirements should apply to the property due to the lack of California wild strawberry on site.

Updated CNDDDB Report and Review of Special Status Species

A CNDDDB report and maps of special status plants and animals was included in the Biological Resource Assessment prepared by Kopitov Environmental in May 2015 for the property. An updated CNDDDB map for 2017 showing special status plants and animals within a 3-mile radius of the site is shown in [Figure 2](#).

The project site was surveyed for rare plants by local coastside botanical expert, Neal Kramer of Kramer Botanical, LLC on April 24, 2015 as part of the biological resource assessment prepared by Kopitov Environmental. No rare plants were documented on the site during Mr. Kramer's survey. Additional information based on more recent special status plant observation data in the CNDDDB (2017) is provided below.

Additional information based on more recent special status animal and plant records in the CNDDDB (as of September 2017) is provided below.

California red-legged frog

The California red-legged frog (CRF) was evaluated for its potential on site and was determined to have a potential for occurrence within Dean Creek, though Dean Creek does not provide suitable breeding habitat (Kopitov Environmental, 2015). One additional observation of CRF was found in our recent (September 2017) CNDDDB search, and this location is approximately 0.8 miles north of the project area.

There are no recommended changes to the mitigation measures listed for CRF in the BRA prepared by Kopitov Environmental.

San Francisco garter snake

The San Francisco garter snake (SFGS) was evaluated for its potential on site and was determined to have a potential for occurrence within Dean Creek (Kopitov Environmental, 2015). No additional observations of SFGS were found in our recent (September 2017) CNDDDB search, as the nearest locations of the species was found to be 1.5 miles south of the project area. There are no recommended changes to the mitigation measures listed for SFGS in the BRA prepared by Kopitov Environmental.

Fogbelt Bumblebee (*Bombus caliginos*)

This species was not discussed in the 2015 BRA report for the project. The fogbelt bumblebee does not have federal or state listing protection, but is ranked as an S1/S2 (State Critically Imperiled/ State Imperiled) by the state of California. Based on the CNDDDB, this bumblebee has not been seen in the region since the late 1920's, when it was recorded in the Moss Beach, Pacifica and Hillsborough areas. This species is unlikely to be present on site as it has likely been extirpated from the region for decades.

Blasdale's bent grass

Blasdale's bent grass (*Agrostis blasdalei*) was observed approximately 0.2 miles north of the site in May 2015 (CNDDDB 2017). This species is not expected to be present on the property, as this species was not detected when surveyed by a knowledgeable botanical expert in April 2015.

Perennial goldfields

Perennial goldfields (*Lasthenia californica* ssp. *macrantha*) was observed approximately 1.0 mile north of the site at Montara State Beach in May 2015. This species is not expected to be present on the property, as this species was not detected when surveyed by a knowledgeable botanical expert in April 2015.

No additional special status plant or animal species were determined to have any potential for presence in the project area, other than those identified in the 2015 BRA report.

Impact of Story Pole Installation

Story poles were installed on the site on July 3rd 2017. The contractors that installed the story poles mowed the vegetation within the building footprint area to install the story poles. Vegetation that was mowed looked to be primarily California blackberry. No evidence of San Francisco dusky-footed woodrat (SFDFW) middens was found within the mowed area during a site inspection on September 14, 2017 (Photos 5 and 6). In addition, no SFDFW middens were observed on the remainder of the parcel or within the riparian corridor of Dean Creek downslope of the property.

Tree Removals Proposed for Removal on Site, and Potential Impacts to Dean Creek:

Two Monterey Cypress trees are to be removed, (27" and 36" Diameter Breast Height (DBH)). These will be replaced with two Monterey Cypress trees on the east end of the property. These trees are located on the flat bluff top, within the building envelope (Photo 5). Removal of these trees would not cause any impact to Dean Creek, as there would be no disturbance to the steep slope that slopes down to Dean Creek.

Recommendations on Plantings for Landscape Plan

The site is a coastal bluff, and a combination of native grasses and shrubs as proposed in the landscape plan is appropriate for the site based on the native plant community in this habitat type. There are no

invasive species on the proposed plan, (Delta # 3 Plan), which has incorporated changes in response to comments in the CDRC letter dated July 24, 2017.

If you have any questions or require further information, please contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Patrick Kobernus".

Patrick Kobernus
Senior Biologist/ Managing Member
Coast Ridge Ecology, LLC

References

Kopitov Environmental, LLC 2015. Biological Resource Assessment for 199 Arbor Lane, Moss Beach, CA. Prepared May, 2015.

San Mateo County Local Coastal Program Policies (2013). <http://planning.smcgov.org/documents/local-coastal-program>

USGS Montara Mountain OE W 7.5 minute quadrangle (2015).



Photo 1. View of lighter green vegetation below taller darker green Monterey Cypress trees. Riparian boundary runs along approximately the lower 1/3 of the photo. Photo date: 09/14/2017.



Photo 2. Far right side of photo shows boundary between riparian floodplain and upland at Dean Creek. Photo date: 09/22/2017.



Photo 3. Understory vegetation is lacking on the steep slope underneath the Monterey Cypress trees. Photo date: 09/14/2017.



Photo 4. Understory of Monterey cypress trees. Photo date: 09/22/17.

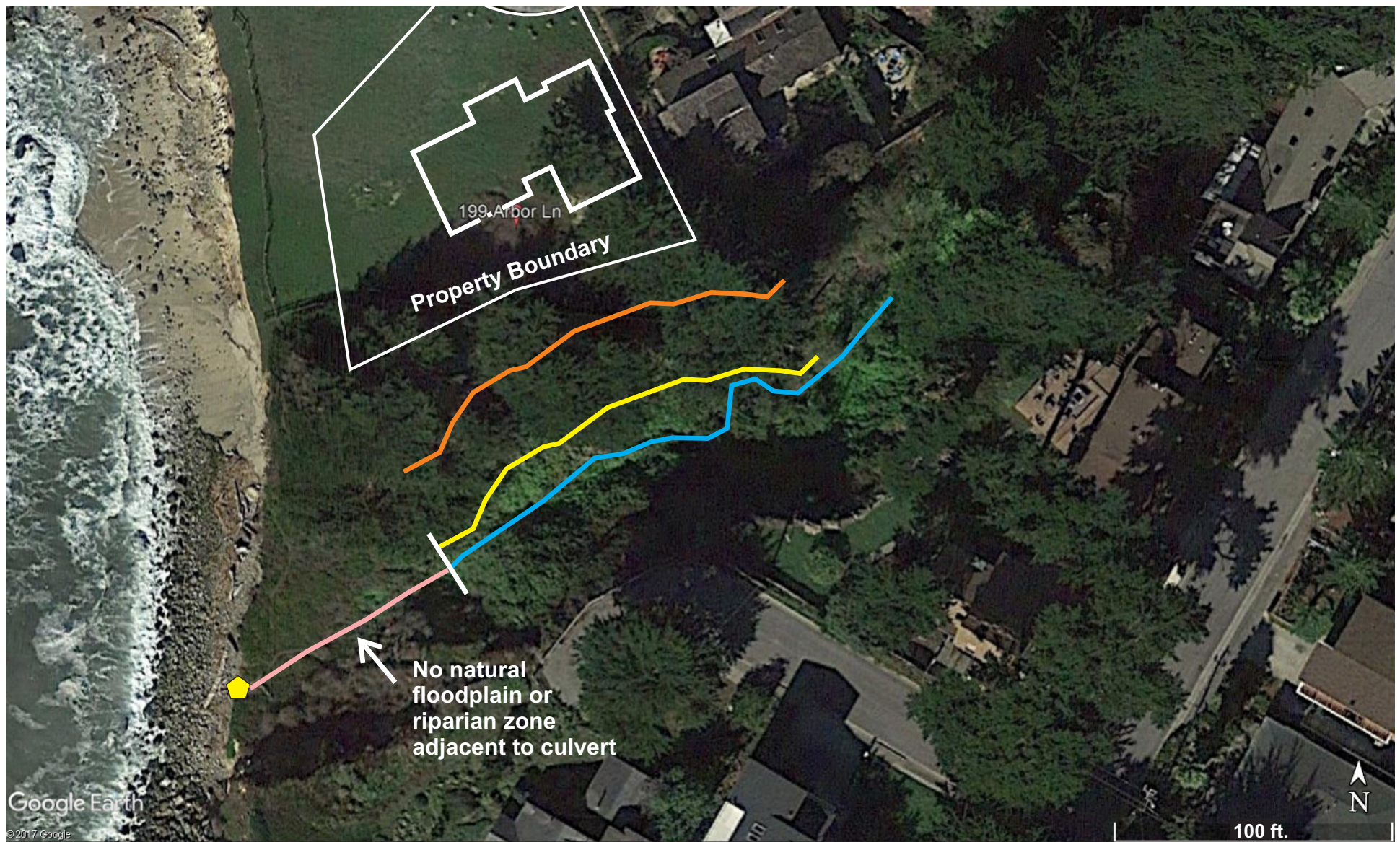


Photo 5. View of property where brush was mowed and story poles were erected. Monterey Cypress Tree on right side of photo would be removed as part of project. Photo date: 09/14/2017.



Photo 6. View of property where brush was mowed and story poles were erected. Monterey Cypress Tree on right side of photo would be removed as part of project. Photo date: 09/14/2017.

Figure 1. Approximate 30-foot buffer from riparian zone associated with Dean Creek for 199 Arbor Lane, Moss Beach, CA.



- Dean Creek - low flow channel
- Dean Creek - high flow channel / riparian edge (boundary on north side of creek shown)
- 30 foot buffer from Dean Creek riparian edge
- Dean Creek underground culvert pipe
- Dean Creek culvert outlet



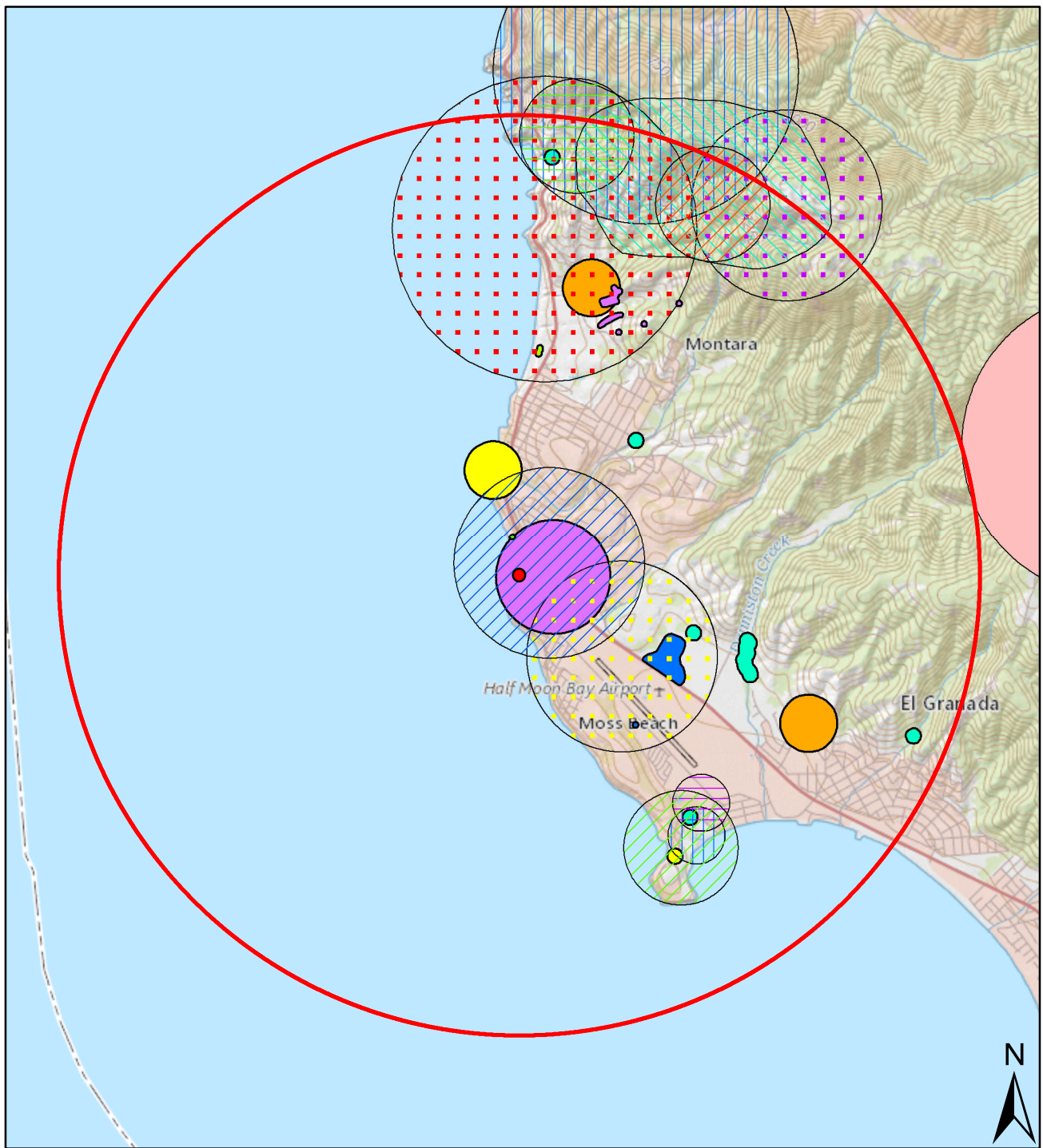


Figure 2: CNDDDB Occurrences Map

0 0.4 0.8 1.6 2.4 3.2 Miles

Legend

- | | |
|---|--|
| ● Project Location | <i>Horkelia cuneata</i> var. <i>sericea</i> |
| 3 Mile Buffer | <i>Lasthenia californica</i> ssp. <i>macrantha</i> |
| <i>Agrostis blasdalei</i> | <i>Leptosiphon croceus</i> |
| <i>Arctostaphylos regismontana</i> | <i>Leptosiphon rosaceus</i> |
| <i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i> | <i>Limnanthes douglasii</i> ssp. <i>omduffii</i> |
| <i>Bombus caliginosus</i> | Northern Coastal Salt Marsh |
| <i>Calliphrys mossii bayensis</i> | <i>Potentilla hickmanii</i> |
| <i>Cirsium andrewsii</i> | <i>Rana draytonii</i> |
| <i>Danaus plexippus</i> pop. 1 | <i>Silene verecunda</i> ssp. <i>verecunda</i> |
| <i>Geothlypis trichas sinuosa</i> | <i>Taxidea taxus</i> |
| <i>Grindelia hirsutula</i> var. <i>maritima</i> | <i>Triphysaria floribunda</i> |





County of San Mateo - Planning and Building Department

ATTACHMENT I



COAST RIDGE ECOLOGY^{LLC}

BIOLOGICAL SURVEYS • MONITORING • PERMITTING • RESEARCH

November 3, 2017

Carlos Zubieta
1725-A Abbot Kinney Boulevard
Venice, CA 90291

Subject: *Response to Comments on Update to Biological Resources Assessment Report for 199 Arbor Lane, Moss Beach, CA. (APN 037-123-043).*

Dear Mr. Zubieta:

This letter provides a response to a comments on the *Update to the Biological Resources Assessment for 199 Arbor Lane, Moss Beach, California (APN 037-123-043)*, prepared by Coast Ridge Ecology, October 2, 2017.

In a letter dated October 22, 2017 from the adjacent property owner at 191 Arbor Lane, three (3) comments were made in regards to the Updated Biological Resources Assessment:

Comment #1:

The commenter says there is one 'obvious error' in the Updated BRA. The commenter is referring to a statement that the distance between the edge of the bluff and the Pacifica Ocean was estimated to be 80 feet. The commenter says that the distance is actually between 62 and 67 feet.

Response to Comment #1:

Based on the site plan for 199 Arbor Lane dated October 14, 2016; the estimated distance from the wood deck (which forms the western edge of the building envelope), the distance to the top of the bluff above the Pacific Ocean varies between 88.9 feet and 71.3 feet. This distance was averaged and estimated to be 80 feet.

Comment #2:

The commenter says there is 'one taxonomic classification that is in dispute'.

Response to Comment #2:

The commenter does not provide any additional information to back up the statement that a 'taxonomic classification' in the Update to the BRA is 'in dispute'. No example of a taxonomic classification is given, and it's not clear what the commenter is referring to.

Comment #3a:

The commenter states that the report misrepresents "photograph 5" as stating that it 'shows two trees 27" and 36" DBH', whereas "Photograph 5 actually only depicts the smaller of the two trees".

Response to Comment #3a:

Photograph 5 was referenced in the Update to the BRA to primarily show the story pole installation and mowing that had been done, the flat bluff top, as well as the trees on site. The commenter is correct in that it only shows one of the trees due to the angle the photo was taken. This was not meant to

misrepresent the location of the trees. The trees are shown on the site plan for the project, and they are both located on the flat area of the bluff top.

Comment #3b:

The commenter questions the statement in the Update to the BRA that 'removal of the trees would not cause any impact to Dean Creek, as there would be no disturbance to the steep slope that slopes down to Dean Creek'. The commenter also states that 'the author does not have the qualifications' to make this evaluation. The commenter also states that there was 'careful omission of the reality of bluff top erosion',

Response to Comment #3b:

The two Cypress trees referred to by the commenter are both located on the flat bluff top within the proposed building envelope, and are not located along the edge of the bluff. As a biologist with over 22 years of professional experience, having observed tree removals in many types of terrains, I am sure these trees could be easily removed without causing erosion to the edge of the bluff and Dean Creek, based on their distance from the edge of the bluff; however the project's Civil Engineer and Geologist should evaluate this. There was no 'careful omission of the reality of bluff top erosion' as the commenter states.

It should be noted that in some areas near the property at 199 Arbor Lane, the bluff edge that borders the slope that descends to Dean Creek is steep, but not too steep to walk down. I traversed the slope several times when taking distance measurements between the property boundary and the riparian corridor and Dean Creek itself. The bluff edge is well vegetated with native brush (California blackberry) in places and Monterey cypress trees. The project's Civil Engineer and Geologist should provide an evaluation for the potential for erosion of this slope and any potential for impact from the proposed development.

If you have any questions or require further information, please contact me.

Sincerely,



Patrick Kobernus
Senior Biologist/ Managing Member
Coast Ridge Ecology, LLC



County of San Mateo - Planning and Building Department

ATTACHMENT J

GEOTECHNICAL AND GEOLOGIC INVESTIGATION

*Proposed New Residence
Vacant Lot on Arbor Lane
APN# 037-123-430
Moss Beach, San Mateo County, California*

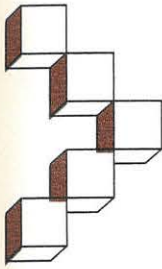
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APR 03 2017

San Mateo County
Planning Division

*Prepared for:
Carlos Zubieta Architect
Attn: Carlos Zubieta*

July 6, 2016



Michelucci & Associates, Inc.
Geotechnical Consultants

Joseph Michelucci, G.E.
joe@michelucci.com

Richard Quarry
rich@michelucci.com

July 6, 2016
Job No. 16-4572

via e-mail: Carlos.zubieta@gmail.com

Carlos Zubieta Architect
Attn: Carlos Zubieta
1725-A Abbot Kinney Boulevard
Venice, CA 90291

Re: Geotechnical and Geologic Investigation
Proposed New Residence
Vacant Lot on Arbor Lane
APN# 037-123-430
Moss Beach, San Mateo County, California

Dear Mr. Zubieta:

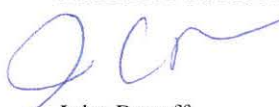
As authorized, we have completed geotechnical and geologic investigations at the site of the planned new residence on the currently vacant lot (APN #037-123-430) on Arbor Lane in Moss Beach, San Mateo County, California. The property is referred to as 199 Arbor Lane on various documents.

The purpose of our study was to provide general geotechnical recommendations and design criteria related to the new residence that is planned at the property. We have also evaluated the geologic setting, as the site is located within a complex geologic area where active ocean bluff retreat is occurring immediately west of the property and a strand of the Seal Cove (San Gregorio) Fault is located immediately offshore west of the site. The primary geologic hazard to the site is coastal bluff retreat. In our opinion, the project is feasible from a geologic and geotechnical viewpoint, provided that the recommendations contained in the report are incorporated into the final plans and followed during construction.

As will be discussed in the accompanying report, it is our basic conclusion that the site is located adjacent to a coastal bluff that has been impacted by bluff erosion which has occurred historically at a reported average rate on the order of 1.25 feet per year (as measured between 1866 and 1971 by Griggs & Savoy, 1985). However, our re-analysis of the published bluff retreat rate as well as further analysis of subsequent aerial photographs, results in our conclusion that a more reasonable average retreat rate is about 0.8 feet per year. The measured average rates of bluff retreat and resulting estimate of bluff retreat impact to the proposed residence are discussed within the body of this report.

We are pleased to have been of service to you on this project, and will be available to review our findings with you and your other consultants at the earliest convenience.

Very truly yours,
MICHELUCCI & ASSOCIATES, INC.


John Petroff
Staff Geologist


David F. Hoexter
Certified Engineering Geologist #1158
(expires 11/30/17)




Joseph Michelucci
Geotechnical Engineer #593
(expires 3/31/17)

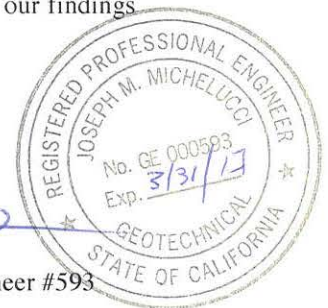


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GEOTECHNICAL AND GEOLOGIC INVESTIGATIONS

Proposed New Residence
Vacant Lot on Arbor Lane
APN# 037-123-430
Moss Beach, San Mateo County, California

INTRODUCTION

This report addresses the geotechnical and engineering geologic conditions that occur at the site of the planned new residence on the vacant lot on Arbor Lane (APN# 037-123-430) in Moss Beach, San Mateo County, California (Site Vicinity Map, Figure 1). The property is referred to as 199 Arbor Lane on some documents.

A Regional Geologic Map of the site area is presented as Figure 2. It is noted that the site is located within a sensitive geologic area where bluff retreat/erosion is affecting the cliffs west of the property, and the site is also located within close proximity to a strand of the active Seal Cove (San Gregorio) Fault.

The purpose of our study was to evaluate the soil and geologic conditions that occur at the site, and if found geologically feasible, to provide geotechnical recommendations and design criteria pertaining to building foundations, site grading, retaining walls, drainage, and other items that relate to the site soil and geologic conditions. An overview of the property, including the location of test borings performed in conjunction with our study, is included on the attached Site Plan/Engineering Geologic Map, Figure 3.

DESCRIPTION OF PROJECT

We understand that future development plans will call for the construction of a new 2-story residence. We understand that a reinforced concrete slab-on-grade floor is desired.

SCOPE OF SERVICES

Our study included:

1. Detailed site inspections by our geotechnical and geologic personnel;
2. A review of our files for other projects our firm has completed in the site vicinity;
3. A review of preliminary architectural drawings by Carlos Zubieta Architecture, depicting a plan view of the proposed new residence;
4. Discussions with the architect Carlos Zubieta;
5. A review of available published geologic maps and literature;
6. Stereoscopic interpretation of aerial photographs taken between 1941 and 2005; evaluation of bluff retreat in the site vicinity;
7. The excavation of 3 exploratory test borings with a truck mounted drill rig;
8. The recovery of samples from the borings, and the performance of a variety of engineering tests upon the various soil layers encountered;
9. The performance of engineering geologic and geotechnical engineering analysis utilizing the above items; and,
10. The preparation of this report.

FIELD INVESTIGATION AND LABORATORY TESTS

In order to evaluate the geotechnical engineering characteristics of the soil layers which underlie the site, 3 borings were drilled at the approximate locations indicated on the attached Figure 3. The borings were drilled by Hew Drilling of Palo Alto on April 20, 2016, with hollow stem augering equipment. Relatively undisturbed samples were recovered in thin brass tubes from the borings at selected intervals with a free-falling, 140-pound automatic hammer advancing modified California, and in some cases standard penetration, drive samplers 18 inches into the subsurface soil layers. The brass tube encased samples were labeled in the field and carefully sealed to preserve their in-situ moisture content.

As the borings were excavated, logs of the materials encountered were prepared based upon an inspection of the recovered samples and auger cuttings. The final Boring Logs, as presented on the attached Figures 4 through 6, are based upon the field logs with occasional modifications made upon further laboratory examinations of the recovered samples and laboratory test results.

Laboratory tests were performed upon samples that were extruded from the brass tubes. These tests, which are useful in evaluation of the general strength properties of the materials tested, including the determinations of moisture content, dry density and unconfined compressive strength of selected samples. The results of these tests, along with the resistance to penetration of the sampler, are listed opposite the corresponding sample location on Figures 4 through 6. A Boring Log Key is also included as Figure 7.

We also performed a plasticity index test upon a representative near surface sample from Boring 3. The result of this test, which is useful in evaluating the shrink/swell properties of the soils, is included on Figure 8.

SITE CONDITIONS

The site is located on an elevated bluff adjacent to the Pacific Ocean in Moss Beach, in unincorporated San Mateo County, California. The subject property is accessed at the southeast corner of the cul-de-sac ending of Arbor Lane. It is irregularly shaped and comprises approximately 0.32 acres. The site is essentially flat lying and is bound by a slope down to Dean Creek, an ephemeral creek channel along the south side, and by Fitzgerald Marine Preserve, a natural wildlife preserve to the west and northwest. It should be noted that the subject property does not extend directly to the ocean bluff; an intervening lot extending from the termination of Arbor Lane, reportedly owned by the neighborhood association, is situated between the subject lot and the ocean bluff/beach.

An approximately 35 to 40 foot tall near-vertical bluff exists along the west side of the preserve, and the beach is at the base of the bluff. The slope at the ocean bluff is inclined at approximately 0.53 to 1.0 (feet to feet horizontal to vertical), equivalent to 189 percent at the location of Cross Section A-A' (Figure 9). The maximum ocean bluff slope is approximately 0.2 to 1.0 (feet to feet horizontal to vertical), equivalent to 490 percent. The southerly slope adjacent to the drainage is inclined at approximately 1.56 to 1.0 feet to feet (horizontal to vertical) at the location of Cross Section B-B' (Figure 10), equivalent to 64 percent; and 2.2 to 1.0 feet to feet, equivalent to 46 percent, at the location of Cross Section C-C' (Figure 11).

The topography in the area to be developed with the proposed residence is generally level. Presently, the lot is covered with seasonal low-lying grasses and brush.

There are also two wells that were previously installed on the north end of the property. Well #1 was reportedly completed to approximately 200 feet and the deeper well (Well #2) reportedly extends 550 feet below grade (California Department of Water Resources (CDWR), Well Drillers Log, 1998).

REGIONAL GEOLOGIC SETTING

The site is located within the central region of the Coast Ranges Geomorphic Province, which extends from the Oregon border south to the Transverse Ranges. Sub-parallel, northwest trending mountain ranges and intervening valleys characterize the general topography. The region has undergone a complex geologic history of sedimentation, volcanic activity, folding, faulting, uplift and erosion. The Santa Cruz Mountains are located northeast of the site; the Pacific Ocean is located to the west.

The site is located within the Montara Mountain 7.5' Quadrangle. A California Geological Survey (CGS) Seismic Hazard Zone Map has not (to date) been prepared for this quadrangle. The site is not located within a CGS Fault Rupture Hazard Zone.

SITE GEOLOGY

The geologic setting of the site area is shown on the attached Regional Geologic Map, Figure 2. As indicated on Figure 2, the site vicinity is primarily underlain by Marine Terrace Deposits (Qmt) (Brabb, Graymer and Jones, 1998; Pampeyan, 1994). These sediments are commonly poorly to moderately consolidated marine, eolian (wind deposited), and alluvial sand, silt, gravel and clay in various proportions and combinations, in distinct to indistinct lenses and beds, and are commonly as much as 40 to 50 feet thick; based on visual observation of the adjacent bluff and on our exploratory borings, we estimate that these sediments are essentially flat-lying and on the order of 50 feet thick in maximum thickness at the site. The Marine Terrace Deposits are underlain by Purisima Formation sediments, consisting of thinly bedded and highly fractured siltstone, shale and sandstone. At greater depth are plutonic rocks known as the Montara Mountain Granite or Quartz Diorite.

The Well #2 drillers log that we reviewed indicates the presence of 5 feet of "topsoil" and apparent terrace deposits consisting of sand and clay and sand to a depth of 45 feet; underlain by gray clay with shells and gray sand to a depth of 145 feet, likely the Purisima Formation; and thence by "granite" (Montara Mountain Granite/Quartz Diorite) to the total depth drilled of 550 feet.

A layer of beach sand mantles the Purisima Formation sediments between the shoreline and the base of the bluff. The occurrence of beach sand varies over the course of the year. Talus or bluff fall material is commonly present at the base of the bluff.

Some artificial fill was also placed in the area of the ephemeral creek channel along the south side of the property. The fill is of unknown origin and composition, although we did observe that there were cobbles and boulders present at the ground surface in the area of the fill.

The nearby Seal Cove Fault is discussed in the Seismic Setting section of this report.

AERIAL PHOTOGRAPHIC INTERPRETATION

Sixteen sets of aerial photographic stereo pairs taken between 1941 and 2005 were interpreted for this investigation. Imagery scales ranged from 1:7,200 to 1:24,000. The photos are referenced at the conclusion of this report. We also viewed and compared periodic imagery from the website NETRonline.com dating from 1946 through 2012.

Arbor Lane is not present in 1941. The site and nearby vicinity are the location of row crops. The ground surface is level, with a slight slope and thus drainage discharge to the northwest towards the ocean bluff. An incised drainage/ephemeral creek is immediately adjacent to the south. The creek bank adjacent to the site is exposed and slopes down to the creek channel; the slope exhibits minor slumping and sloughing of soil but not landsliding or active bluff retreat. The western ocean bluff is near vertical near the subject site with exposed sedimentary bedrock along the beach in the adjacent tidal zone. The adjacent offshore bedrock sedimentary syncline, located in the surf zone, is visible. There are no landslides or rotational failures along the bluff; past bluff retreat appears to be due to periodic sloughing of relatively loose soil.

Subsequent imagery through 2005 indicates periodic sloughing/falling of soil from the exposed ocean bluff face both directly west of the site as well as to the north and the south. The imagery depicts The Strand, a road along the bluff to the south, as it is gradually undercut by ocean bluff retreat until no longer passable by 1969. The imagery also depicts bluff retreat adjacent to the three residences constructed between 1955 and 1969 off of Reef Point Road to the north.

Arbor Lane was constructed between 1969 and 1975, with five residences under or recently constructed near the subject site indicated on the 1975 images; the subject site remains vacant in 1975. Slope protection measures (shotcrete) have been instituted for the Reef Point Road residences. By 1976 there is apparent fill and a culvert near the beach immediately south of the site to convey the lateral drainage flow. The purpose of this fill and culvert is not evident, as there are no indications of erosion or bluff failure along the lateral drainage at this location which would necessitate placement of the fill.

A retaining wall is present by 1991 along the ocean bluff adjacent to the residence north of the adjacent Arbor Lane cul-de-sac (newly constructed in the 1976 imagery). This appears to be the wall which is currently present at this location.

In general, the subject site remains essentially unchanged during the period from 1941 through 2005 (and to the present). The sloping bluff to the south along the lateral drainage is subject to minor sloughing and erosion, and to a growth of dense vegetation, but the top of the bluff does not appear to retreat. However, the aerial imagery indicates periodic retreat of the bluff face and top adjacent to the beach to the west. The western ocean bluff retreat is further discussed in the following section of this report. *

OCEAN BLUFF RETREAT

There are no indications of landsliding within or on property adjacent to the subject site. However, the adjacent bluffs to the south along the adjacent lateral drainage (to a minor degree) and to the west along the Pacific Ocean (to a much greater degree) are actively retreating by periodically sloughing along the exposed bluff face.

The southern ephemeral drainage bluff is covered with vegetation and mature trees, and it is not feasible to view the ground surface on aerial photographs. A comparison of the 1997 and 2016 site surveys indicates negligible/minor slope retreat, which, based on the general slope appearance in historic aerial photographs, is applicable to a longer period of time. The southern bluff retreat does not appear to be direct hazard to the proposed residence.

We observed indications of failure of the ocean bluff during the past winter, with debris from the slope present at the base of the slope and a bare "scar" on the bluff face at the location of the debris fall. The failure mechanism of the ocean bluff face appears to be undercutting of the relatively weak, unconsolidated bluff sediments by wave action at the beach level.

We identified one published calculation of average annual ocean bluff retreat at or near the site, prepared by Griggs and Savoy (1985). Griggs & Savoy, as shown on Figure 11.14, estimate an average rate of 15 inches (1.25 feet) per year over a 105-year period. This estimate is based on approximate measurements of the distance of prominent rocks shown on a 1866 Coast and Geodetic Survey map (and remaining to the present) to the base of the sea cliff, in comparison to the cliff location on a 1971 map (source of the map not indicated). We obtained a copy of the 1866 map, and measured the magnitude of bluff erosion at three locations adjacent to the subject site, using the current 2016 Google Earth image to compare with the 1866 map. Our three measurements were 144, 133 and 51 feet respectively for the three locations, corresponding to 0.96, 0.89, and 0.34 feet/year for the 150-year intervening period, an average of 109 feet (0.73 feet/year).

We then compared the location of the top edge of the ocean bluff in 1946 and 2012, using downloaded scaled imagery purchased from the website NETR Online/Historic Aerials (<http://www.historicaerials.com>). We measured at two locations, with magnitudes of retreat of 14 and 26 feet. The average rate of bluff retreat for the 26 feet measurement within this 66 period was approximately 0.40 feet/year.

We also compared the location of the bluff base as shown on 2005 stereo pair imagery supplied by Pacific Aerial Surveys of Oakland, California with the 1866 survey. Based on measuring from the center of the offshore rocks and from the eastern edge of the rocks, we measured bluff retreat of 80 and 108 feet, respectively, corresponding to average retreat rates of 0.58 and 0.78 feet/year.

Based on the 2016 topographic survey of the site when compared to the earlier 1997 site survey, the bluff retreat at four representative locations from the north to the south was 8, 16, 12, and 6 feet, an average of 10.5 feet, corresponding to an average retreat rate of 0.55 feet/year.

The western property line is currently located about 30 feet at its closest point from the edge of the ocean bluff. Assuming the most conservative average bluff retreat rate (of Griggs & Savoy), 1.25 feet/year, we would project the bluff to retreat 30 feet to the western property line in approximately 24 years. At this rate, the ocean bluff would retreat to the western building setback line (an additional 30 feet) in approximately 48 years, and to the current closest point of the proposed residence, approximately 17 feet further inland, in approximately 14 additional years, resulting in bluff retreat at the maximum rate of 1.25 feet/year reaching the proposed residence in approximately 62 years.

However, in our opinion, this period of time (62 years), based on the Griggs and Savoy measurement, is unnecessarily conservative inasmuch as our calculations, based on the same 1866 survey as Griggs & Savoy, result in a lower average rate (0.73 versus 1.25 feet/year). Additional calculations based on aerial photographs and site-specific surveys, albeit for shorter periods of time, also result in lower average rates of retreat, ranging from 0.40 to 0.78 feet/year. Thus, the actual rate of retreat is likely to be slower. Utilizing an average retreat rate of 0.78 feet/year, which in our opinion is a more reasonable rate, the ocean bluff retreat would reach the western property line, western building setback line, and closest point of the proposed residence in approximately 38, 76 and 99 years, respectively.

Note that the calculated rates of bluff edge retreat are based on an assumption that the rate of retreat is constant. However, ocean bluff failures occur episodically and not uniformly through time. Therefore, the measured/calculated rates of retreat must be assumed to be indicative but not strictly representative of the long-term rates. Furthermore, any one-failure episode is likely to involve considerably greater retreat than the average. In other words, an individual failure episode may involve several feet of bluff edge retreat, followed by many years and even decades of no retreat.

We also qualitatively evaluated the ocean bluff seismic stability. A brief evaluation of the geologic literature suggests that ocean bluff failures have occurred along the San Mateo County coast during earthquakes, in particular the 1906, 1957 and 1989 San Francisco, Daly City and Loma Prieta events. The events appear to generally consist of "peeling" or "slumping" of bluff face material similar to undercutting by wave erosion, as opposed to circular or block glide type failures.

At the subject site, earthquake-caused instability would in our opinion be similar in scope to the periodic primarily winter wave undercut failures, and would likely "replace" or occur at the location of an imminent undercutting failure. Seismic bluff failure would thus be incorporated into as opposed to being additive to the long-term bluff retreat.

SEISMIC SETTING

The closest mapped major active fault zone to the site is the Seal Cove Fault Zone, the main active trace of which is located approximately 0.1 miles (0.2 kilometers) to the northeast. The Seal Cove Fault is the northern extension of the San Gregorio Fault, which extends at least to Monterey Bay on the south and northward into the Pacific Ocean west of San Francisco. The fault is well-defined west of the site where it offsets prominent Purissima Formation bedding. The fault is a minimum of 545 feet at its closest location from the site.

The major active trace of the San Andreas Fault is mapped approximately 9.0 miles (14.5 kilometers) also to the northeast. The Hayward Fault and the Calaveras Fault are located further to the northeast. The San Andreas, Seal Cove, Hayward and Calaveras Faults are all part of the major active San Andreas Fault System and the sources of numerous earthquakes which have impacted the San Francisco Bay Area and throughout California. It is highly probable that the site will experience very strong ground shaking in the future during a moderate to large nearby earthquake on one of these or additional active or potentially active faults that are a part of the San Andreas Fault System.

SOIL AND BEDROCK CONDITIONS

We excavated three test borings on the property at the approximate locations shown on the attached Figure 3. In general the materials encountered in the borings were very consistent. The only differences (and very slightly at that) were the depths to the various soil horizons at each boring location.

In Boring 1, The soil encountered in the uppermost 1 ½ feet was interpreted to be artificial fill (soil A) and consisted of soft to medium stiff dark olive brown fine sandy silty clay to clayey silt with rock fragments and rootlets. The fill was underlain by about 1 foot of native soil (soil B) consisting of medium dense very dark brown silty clayey fine to coarse sand with rootlets and weathered granite fragments. The native soil graded to medium stiff to stiff terrace deposits (soil C) consisting of dark yellowish brown to yellowish brown fine to coarse sandy silt to sandy clay with some fine to coarse sandy lenses. At about 6 ½ feet below grade, the terrace deposits were noted to be stiff to very stiff and consisted of mottled light yellowish brown fine to coarse sandy clay to sandy silt containing granite pebbles/fragments and fine to coarse sandy and silty clay lenses (soil D). At about 18 feet below grade, the terrace deposits graded to generally sandy material consisting of light yellowish brown silty fine to medium sand with yellow and yellowish brown mottling (soil E). The sandy terrace deposits extended to a depth of about 36 ½ feet below grade, where very moist, dense to very dense dark greenish gray silty fine to coarse sand containing scattered shale fragments and lenses of coarse sand and gravel was encountered (soil F). Boring 1 was terminated at 41-1/3 feet below grade where refusal was encountered in the dark greenish gray sandy material.

Boring 2, was the deepest of the three borings. As noted, the various soil horizons we encountered were similar to those encountered in Boring 1. In Boring 2, about 1-½ feet of soil A was encountered at the ground surface, which was underlain by about 2 ½ feet of soil B. Clayey terrace deposits (soil C) were encountered beneath soil B, which extended to about 6 ½ feet below grade. Sandier terrace deposits (soil D) were encountered beneath soil C, and at about 18 feet below grade, the terrace deposits grade to predominantly fine to coarse sandy deposits (soil E). At 40 feet below grade, the dense to very dense dark greenish gray sandy material was encountered (soil F). At about 50 feet below grade, we encountered material we are interpreting as Purisima Formation bedrock, which consisted of hard dark gray sandstone and shale; we should point out that this material strongly resembled the bedrock materials exposed on the beach and in the tide pools below the site immediately to the west. Boring 2 was terminated in the Purisima Formation material at a depth of 50-1/6 feet below grade.

Boring 3, was the shallowest of the three borings and was excavated within close proximity to the cul-de-sac ending of Arbor Lane. Again, similar materials were encountered in this boring. Artificial fill (soil A) extended to a depth of 1 ½ feet below grade, and native soil (soil B), which tested to be non plastic in expansion potential, extended to a depth of about 3 ½ feet below grade. Dense to very dense terrace deposits were encountered beneath the topsoil layer; the terrace deposits extended to the depth explored of 21-1/6 feet below grade.

Groundwater was encountered in Boring 1 at about 40 ½ feet below grade and in Boring 2 at about 49 feet below grade at the time of drilling. Based on our review of the available previously excavated well data, stabilized water in the deep well was measured at 38 feet after it was drilled. Groundwater levels, however, tend to fluctuate seasonally, and could rise to shallower depths in the future.

A plan of the general site features is included on Figure 5. For a more complete description of the soil and bedrock layers encountered in the borings, refer to the final Boring Logs included as Figures 4 through 6 and the Boring Log Key included as Figure 7. The results of our plasticity test on the near surface soil sampled in Boring 3 are included on the attached Figure 8.

CONCLUSIONS

Based upon our study, it is our opinion that the project can be developed as planned, provided that the recommendations contained within this report are followed. The primary geotechnical consideration involves the upper 2 to 4 feet of surface soil that was generally weak. This material, is compressible, and thus, consideration should be given to supporting the planned slab on grade floor on drilled reinforced concrete piers that gain support in the strong Marine Terrace Deposits that were encountered below the weak surface soils in our three test borings. In order to fortify the foundation and make it resistant to bluff retreat one day in the distant future causing a catastrophic failure consideration could be given to constructing deep drilled piers along the edge of the structure closest to the bluff and utilizing the slab and more conventional interior and perimeter piers as "tie backs".

The primary geologic consideration is the rate of ocean bluff retreat, which, based on the most conservative calculated value of 1.25 feet/year, will result in the bluff edge retreating to the proposed residence location in approximately 62 years. However, based on recalculating the published retreat rate and measuring on additional imagery, we conclude that the bluff edge will retreat to the proposed residence location in approximately 99 years.

Specific recommendations follow.

RECOMMENDATIONS

The following recommendations are contingent upon our firm being retained to review the development plans and to observe the geotechnical aspects of construction.

A. Seismic Criteria Per 2013 CBC

As of January 1, 2014, the 2013 CBC is being utilized for projects in California. This new code is based upon the 2012 International Building Code.

It is our opinion that the subject site can be classified as Site Class "D" for the purpose of structural engineering calculations as defined in Section 1613 of the 2013 CBC.

B. Grading

In areas to receive new driveways, patios, or flatwork, the upper 2 to 3 feet of weak surface should be over-excavated exposing strong subgrade soil approved by our representative. The upper 4 to 6 inches of this soil contains organic matter; this material should either be hauled away or stored on the site for possible landscaping purposes. The subgrade should be scarified, brought to a moisture content that will allow proper compaction and then be compacted to a minimum degree of 90 percent, based upon ASTM D1557, latest revision. The existing soil that is free of organics may be recompacted (to a minimum degree of 95 percent) as engineered fill. Any areas to receive flatwork, pavements, or slabs on grade should also be underlain by at least 12 inches of select granular engineered fill (such as class II baserock). The select granular fill should be compacted to a minimum degree of 95 percent, based upon ASTM D1557, latest revision.

C. Drilled Piers

In our opinion the slab on grade should be structural in nature and supported upon drilled piers.

Drilled piers should be designed on the basis of a skin friction value of 500 psf beginning at the top of supporting material. In this case, the top of supporting material should be assumed to begin at a depth of 4 feet, or the top of the marine terrace deposits, whichever is deeper.

Pier depths should be based upon actual design loads. However, as a minimum, the piers should extend 8 feet below the top of supporting material. Therefore, it is anticipated that average pier depths will be on the order of 12 feet below existing grade.

We also suggest that voluntary consideration be given to deepening the piers along the perimeter of the structure that is closet to the bluff.

In addition to vertical loading, such "bluff" piers should be designed to resist a horizontal "creep" load equal to a fluid weighing 45 pounds per cubic foot, projected over 2-½ pier diameters. The load should begin at the ground surface and extend to a depth of 20 feet. The piers can resist the lateral load through a passive resistance of 350 pounds per cubic foot, projected over 2 pier diameters. The creep load could be transmitted to the interior piers through slab reinforcement. It is suggested that the structural engineer contact us during the design phase, so that a specific lateral load criteria can be developed for each pier location.

Reinforcing for the piers should be determined by the structural engineer based upon anticipated loading.

It is possible that water may accumulate in the pier excavations. Therefore, provisions for casing may be necessary. Any water that accumulates in the piers should be pumped out prior to concrete placement. Alternatively concrete may be placed by the "tremie technique".

D. Slab-On-Grade Construction

The slabs should be reinforced with steel bars and supported upon drilled piers. It is recommended that some type of moisture retardant be provided beneath the slabs. We have included a commonly used treatment on the attached Figure 12, however the project architect, or moisture control consultant should provide the final plan. This is critical as the piers could provide a capillary rise of moisture that could by pass conventional systems.

E. Surface Drainage

We recommend that the site be fine-graded to direct water to flow away from the building foundations. As a general requirement, storm water should not be allowed to pond or flow in concentrated streams or channels on the site. Such ponding or flows and the resulting saturation can weaken the soils and perhaps cause some minor site erosion.

It is further recommended that all roof downspouts be led into tightline disposal pipes that deposit water well away from building foundations and into a suitable disposal area, ideally the street gutter.

F. Review of Plans and Construction Observations

It is recommended that all of the plans related to our recommendations be submitted to our office for review. The purpose of our review will be to verify that our recommendations are understood and reflected on the plans, and to allow us to provide supplemental recommendations, if necessary.

It is important that our firm be retained to provide observation and testing services during construction. Our observations and tests will allow us to verify that the materials encountered are consistent with those found during our study, and will allow us to provide supplemental, on-site recommendations, as necessary.

LIMITATIONS

The conclusions and opinions expressed in this report are based upon the exploratory borings that were drilled on the site, spaced as shown on the Site Plan/Engineering Geologic Map, Figure 3. While in our opinion these borings adequately disclose the soil conditions across the site, the possibility exists that abnormalities or changes in the soil conditions, which were not discovered by this investigation, could occur between borings.

This study was not intended to disclose the locations of any existing utilities, septic tanks, leaching fields, hazardous wastes, or other buried structures. The contractor or other people should locate these items, if necessary.

The passage of time may result in significant changes in technology, economic conditions, or site variations that could render this report inaccurate. Accordingly, neither Carlos Zubieta Architect nor any other party shall rely on the information or conclusions contained in this report after 12 months from its date of issuance without the express written consent of Michelucci & Associates, Inc. Reliance on this report after such period of time shall be at the user's sole risk. Should Michelucci & Associates, Inc. be required to review the report after 12 months from its date of issuance, Michelucci & Associates, Inc. shall be entitled to additional compensation at then-existing rates or such other terms as may be agreed upon between Michelucci & Associates, Inc. and Carlos Zubieta Architect.

This report was prepared to provide engineering opinions and recommendations only. It should not be construed to be any type of guarantee or insurance.

REFERENCES

Aerial Photographs

Black and white (unless otherwise noted) vertical stereo pairs.

Source	Image ID	Date	Scale
Fair	6660-5/6	3/23/41	1:24,000
PAS-AV-	9-16-1/2	7/29/46	1:23,600
PAS-AV-	170-01-21/22	5/6/55	1:10,000
PAS-AV-	933-02-25/26	10/29/69	1:12,000
PAS-AV-	1188-01-27/28	4/28/75	1:12,000
Unk	28965-1/2	3/11/76	1:11,760
PAS-AV-	1356-01-15/16	6/2/77	1:12,000
PAS-AV-	2020-01-28/29	6/19/81	1:12,000
PAS-AV-	2265-01-27/28	6/6/83	1:12,000
PAS-AV-	2670-1-29/30	10/14/85	1:12,000
PAS-SMT-AV-	4075-1-17/18	7/2/91	1:12,000
PAS-SMT-AV-	4515-0201-7/8	8/27/93	1:12,000
PAS-AV-	4916-201-8/9	9/7/95	1:12,000
PAS-AV-	5434-201-6/7	6/23/97	1:12,000
PAS-AV-	6600-201-7/8	8/15/00	1:12,000
PAS-KAV-	9200-71-1/2	10/31/05	1:7,200

Fair - Fairchild Aerial Photography Collection, Whittier College

PAS - Pacific Aerial Surveys, Oakland, California

Unk - unknown

KAV - color

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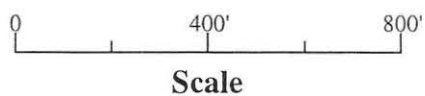
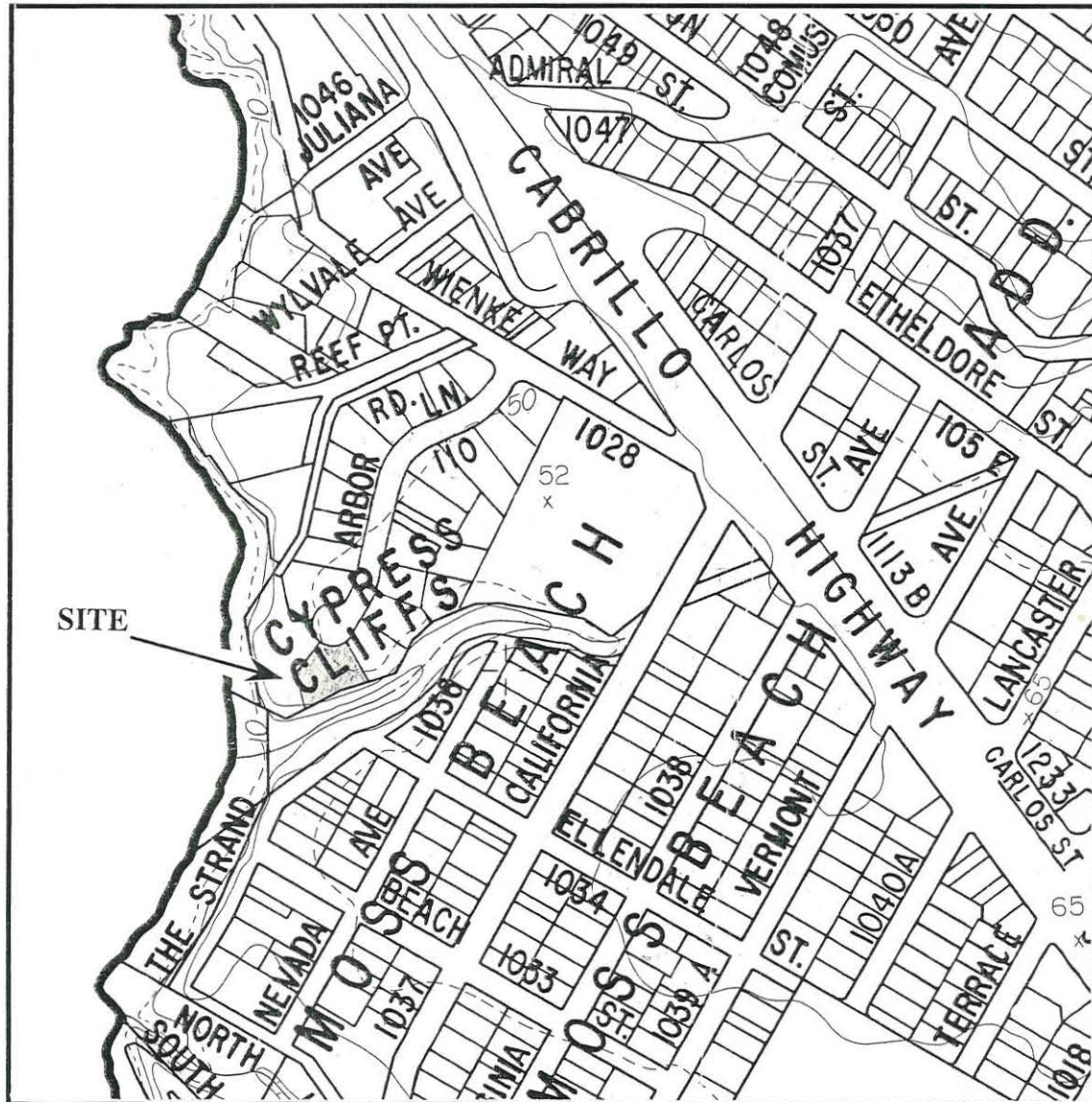
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SITE VICINITY MAP*

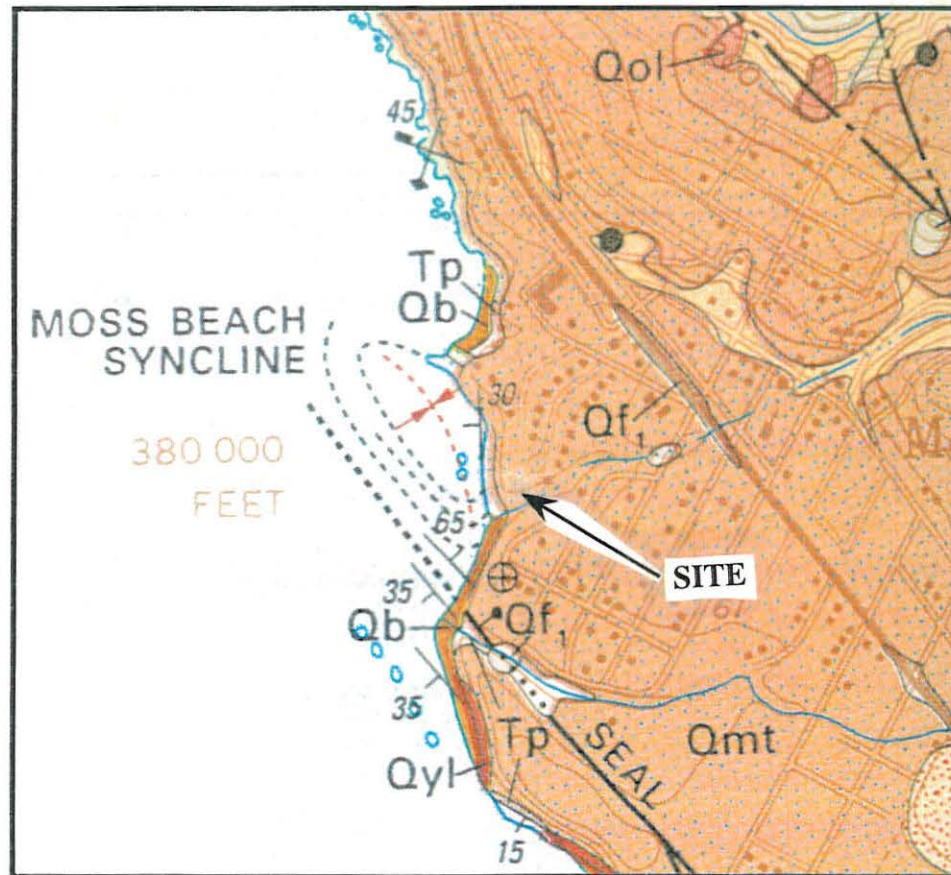
199 Arbor Lane
Moss Beach, San Mateo County, California



*BASE MAP FROM COUNTY OF SAN MATEO CADASTRAL TOPOGRAPHIC SERIES, SHEETS 9A, 1973, (REVISED 1-1-82).



REGIONAL GEOPLOGIC MAP*
199 Arbor Lane
Moss Beach, San Mateo County, California



EXPLANATION

Surficial Deposits

- Qf₁ Artificial Fill (Unit 1)
- Qyl Younger Landslide Deposit
- Qol Older Landslide Deposit
- Qac? Coarse Grained Alluvium
- Qsr Slope Wash, Ravine Fill, and Colluvium
- Qb Beach Deposits
- Qmt Marine Terrace Deposits

Bedrock Deposits

- Tp Purisima Formation
- Km Granitic Rock Of Montara Mountain

Symbols

- Contact
- Fault (dashed where inferred, dotted where concealed, bar and ball on downthrown side)
- Photo-lineament
- Strike And Dip Of Beds
- Syncline
- Borrow Pit
- Shallow Landslide
- Horizontal Beds

0 1000' 2000'

Approximate Scale

*BASE MAP FROM PAMPEYAN (1994)

Job No. 16-4572



Michelucci & Associates, Inc.

Figure 2

Project: **199 Arbor Lane**
 Project Location: **Moss Beach, CA**
 Project Number: **16-4572**

Log of Boring 1
 Sheet 1 of 2

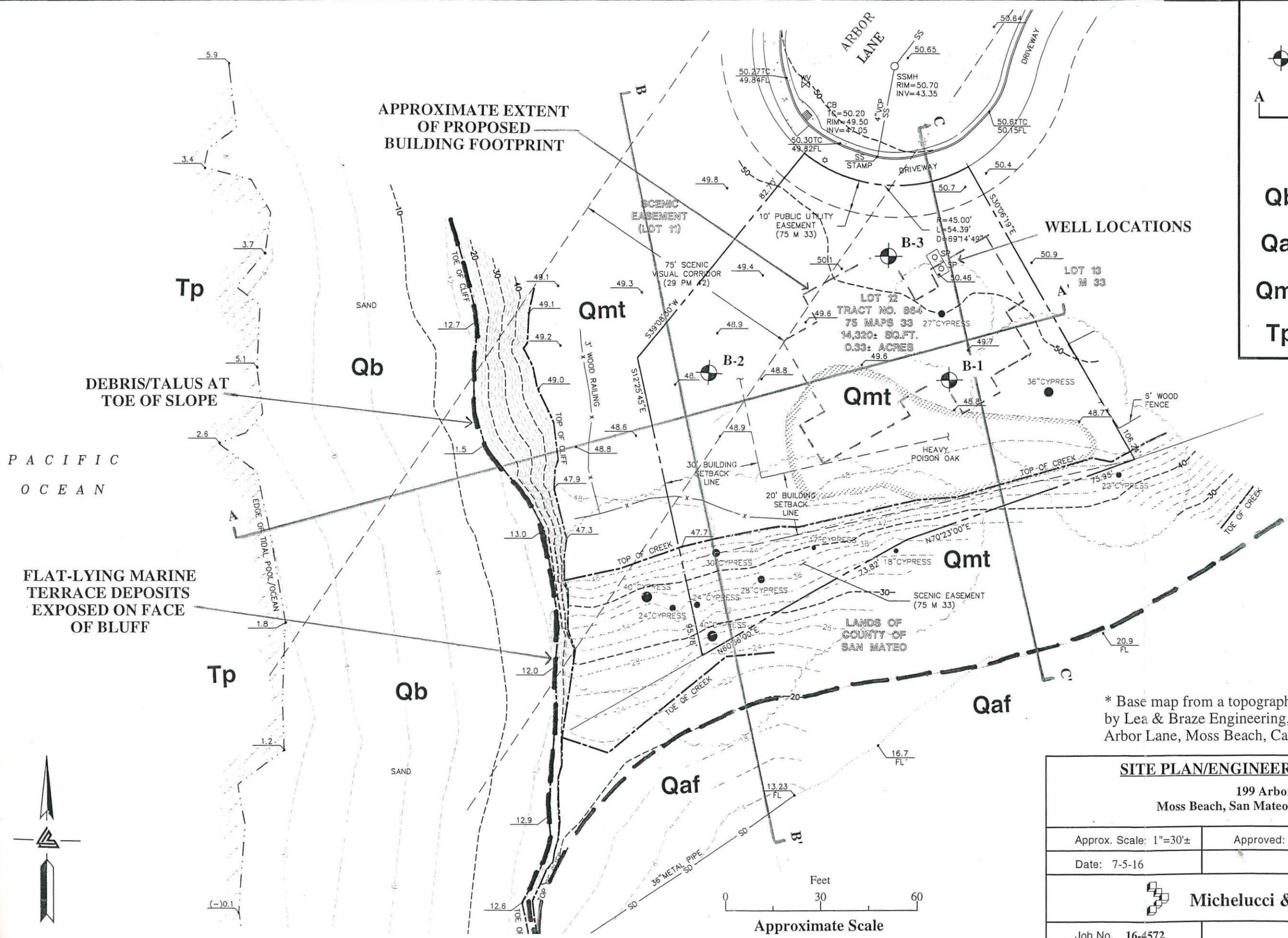
Date(s) Drilled 04/20/16	Logged By J.P	Checked By J.P
Drilling Method 6" hollow stem	Drill Bit Size/Type	Total Depth of Borehole 41.3 feet
Drill Rig Type CME-75 Truck Rig	Drilling Contractor	Approximate Surface Elevation
Groundwater Level and Date Measured Dry	Sampling Method(s) 2.0", SPT	Hammer Data 140 lb; Automatic
Borehole Backfill Grout		

Depth (feet)	Graphic Log	Material Type	MATERIAL DESCRIPTION	Sample Type	Sample Number	Driving Resistance, blows/ft	Dry Unit Weight, pcf	Water Content, %	UC, psf	Deg. of Saturation (%)	PI, %
0		ML	Soft to medium stiff, dark olive brown, fine sandy silty clay to clayey silt with rock fragments and rootlets, moist. (Disturbed/Cultivated Soil)								
		SM-SC			1-1 (2.0")	23					
		GL	Medium dense, very dark brown, silty clayey fine to coarse sand, with rootlets and weathered granite fragments. (Native Soil)								
5			Medium stiff to stiff, dark yellowish brown to yellowish brown, fine to coarse sandy silt to sandy clay, with lenses of fine to coarse sand. (Marine Terrace Deposits)		1-2 (2.0")	24	113.1	15.4	6272	84.9	
		GL									
10			Stiff to very stiff, light yellowish brown, fine to coarse sandy clay to sandy silt, various colors of mottling and weathered granite pebbles/fragments. (Marine Terrace Deposits)		1-3 (2.0")	19	106.2	18.8	3344	86.3	
			- Fine to coarse sandy and thin silty clayey lenses. - Strong brown and light yellowish brown staining.		1-4 (SPT)	44					
15					1-5 (2.0")	49	119.7	12.9	1809	85.7	
20		SM	Dense, light yellowish brown, silty fine to medium sand, with yellow and yellowish brown mottling, moist. (Marine Terrace Deposits)		1-6 (2.0")	40	109.4	19.6		97.9	
					1-7 (SPT)	53					
25					1-8 (2.0")	54	104.8	21.4		95.0	



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Figure 4



EXPLANATION

- B-1 Boring Location & Number (Michelucci & Associates, Inc.)
- A A' Cross Section (Figures 9 - 11)
- Geologic Contact
- Qb** Beach Deposits
- Qaf** Artificial Fill
- Qmt** Marine Terrace Deposits
- Tp** Purisima Formation

* Base map from a topographic survey of the site prepared by Lea & Braze Engineering, Inc., (Sheet SU1) titled, "199 Arbor Lane, Moss Beach, California," dated May 16, 2016.

SITE PLAN/ENGINEERING GEOLOGIC MAP*		
199 Arbor Lne Moss Beach, San Mateo County, California		
Approx. Scale: 1"=30'±	Approved: D. H.	Prepared By: J. P. & D. F.
Date: 7-5-16		Revised:
Michelucci & Associates, Inc.		
Job No. 16-4572		Figure 3

Project: **199 Arbor Lane**
 Project Location: **Moss Beach, CA**
 Project Number: **16-4572**

Log of Boring 1
Sheet 2 of 2

Depth (feet)	Graphic Log	Material Type	MATERIAL DESCRIPTION	Sample Type	Sample Number	Driving Resistance, blows/ft	Dry Unit Weight, pcf	Water Content, %	UC, psf	Deg. of Saturation (%)	PI, %
30		SM	Dense, light yellowish brown, silty fine to medium sand, with yellow and yellowish brown mottling, moist. (Marine Terrace Deposits)		1-9 (2.0')	79	114.1	15.5		88.1	
					1-10 (SPT)	63					
35					1-11 (2.0')	54	96.7	23.9		86.9	
40					1-12 (2.0')	52/5"	114.5	14		80.3	
		SM	Dense, dark greenish gray, silty fine to coarse sand with scattered shale fragments, lenses of coarse sand and pebbles/gravel, very moist. (Marine Terrace Deposits)								
			- Water first observed at 40'6"		1-13 (SPT)	52/5"					
			Boring terminated at 41'4"								
45											
50											



Michelucci & Associates

Figure 4

Project: 199 Arbor Lane	Log of Boring 2
Project Location: Moss Beach, CA	Sheet 1 of 2
Project Number: 16-4572	

Date(s) Drilled 04/20/16	Logged By J.P	Checked By J.P
Drilling Method 6" hollow stem	Drill Bit Size/Type	Total Depth of Borehole 50.16 feet
Drill Rig Type CME-75 Truck Rig	Drilling Contractor	Approximate Surface Elevation
Groundwater Level and Date Measured Dry	Sampling Method(s) 2.0", SPT	Hammer Data 140 lb; Automatic
Borehole Backfill Grout		

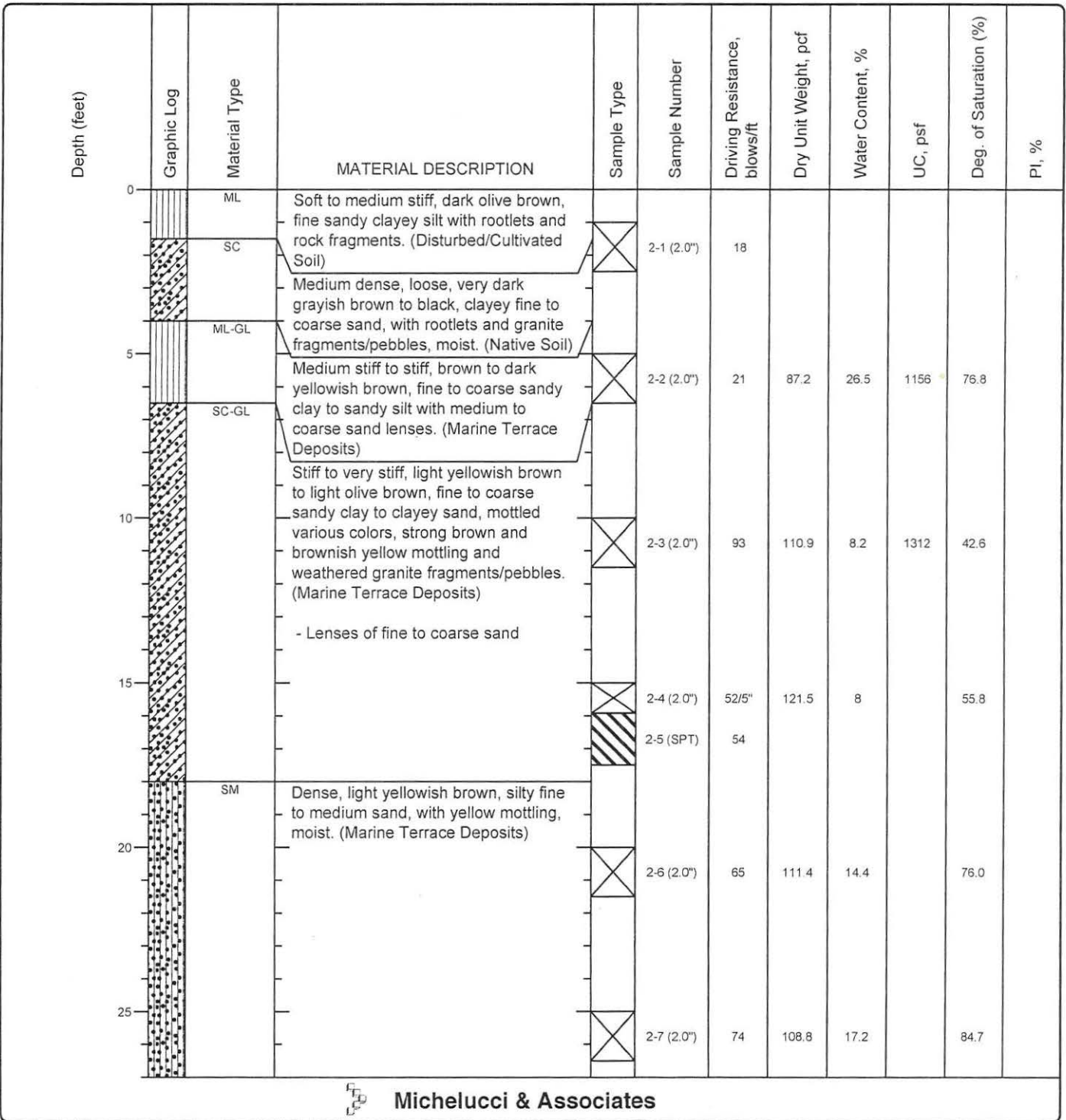


Figure 5

Project: 199 Arbor Lane
 Project Location: Moss Beach, CA
 Project Number: 16-4572

Log of Boring 2
 Sheet 2 of 2

Depth (feet)	Graphic Log	Material Type	MATERIAL DESCRIPTION	Sample Type	Sample Number	Driving Resistance, blows/ft	Dry Unit Weight, pcf	Water Content, %	UC, psf	Deg. of Saturation (%)	PI, %
30		SM	Dense, light yellowish brown, silty fine to medium sand, with yellow mottling, moist. (Marine Terrace Deposits)		2-8 (2.0")	65	108.8	9.5		46.9	
35					2-9 (2.0")	68	104.8	16.3		72.3	
40		SM	Dense, dark greenish gray, silty fine to medium sand with scattered shale fragments, damp. (Marine Terrace Deposits)		2-10 (2.0")	51/4"	96.1	13.6		48.7	
45					2-11 (2.0")	51/6"	108.3	13.8		66.9	
50			Hard, dark gray, sandstone and shale bedrock. (Purisima Formation) Boring terminated at 50'2"		2-12 (SPT)	53/2"					



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Figure 5

Project: 199 Arbor Lane

Project Location: Moss Beach, CA

Project Number: 16-4572

Log of Boring 3

Sheet 1 of 1

Date(s) Drilled	04/20/16	Logged By	J.P	Checked By	J.P
Drilling Method	Continuous flight 6"	Drill Bit Size/Type		Total Depth of Borehole	21.16 feet
Drill Rig Type	CME-75 Truck Rig	Drilling Contractor		Approximate Surface Elevation	
Groundwater Level and Date Measured	Dry	Sampling Method(s)	2.0", SPT	Hammer Data	140 lb; Automatic
Borehole Backfill	Grout				

Depth (feet)	Graphic Log	Material Type	MATERIAL DESCRIPTION	Sample Type	Sample Number	Driving Resistance, blows/ft	Dry Unit Weight, pcf	Water Content, %	UC, psf	Deg. of Saturation (%)	PI, %
0		ML	Soft to medium stiff, dark olive brown, abundantly fine to medium sandy silt, with rootlets and rock fragments. (Disturbed/Cultivated Soil)								
		SC	Medium dense, dark brown, clayey fine to coarse sand with rootlets and weathered granite fragments/pebbles. (Native Soil)		3-1 (2.0")	19					Non-plastic
		SM	Stiff, light yellowish brown to light olive brown, fine to coarse silty clay to sandy silt with lenses of fine to coarse sand, granite pebbles and mottled various colors. (Marine Terrace Deposits)		3-2 (SPT)	13					
5					3-3 (SPT)	19					
10					3-4 (SPT)	41					
15					3-5 (SPT)	36/2"					
20		SM-SC	Dense, light yellowish brown, silty clayey fine to medium sand, with yellow mottling, moist. (Marine Terrace Deposits)								
25											



Michelucci & Associates

Figure 6

Project: **199 Arbor Lane**
 Project Location: **Moss Beach, CA**
 Project Number: **16-4572**

Key to Log of Boring Sheet 1 of 1

Depth (feet)	Graphic Log	Material Type	MATERIAL DESCRIPTION	Sample Type	Sample Number	Driving Resistance, blows/ft	Dry Unit Weight, pcf	Water Content, %	UC, psf	Deg. of Saturation (%)	PI, %
1	2	3	4	5	6	7	8	9	10	11	12

COLUMN DESCRIPTIONS

- | | |
|---|--|
| <p>1 Depth (feet): Depth in feet below the ground surface.</p> <p>2 Graphic Log: Graphic depiction of the subsurface material encountered.</p> <p>3 Material Type: Type of material encountered.</p> <p>4 MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.</p> <p>5 Sample Type: Type of soil sample collected at the depth interval shown.</p> <p>6 Sample Number: Sample identification number.</p> <p>7 Driving Resistance, blows/ft: Number of blows to advance driven sampler one foot (or distance shown) beyond seating interval using the hammer identified on the boring log.</p> <p>8 Dry Unit Weight, pcf: Dry weight per unit volume of soil sample measured in laboratory, in pounds per cubic foot.</p> | <p>9 Water Content, %: Water content of the soil sample, expressed as percentage of dry weight of sample.</p> <p>10 UC, psf: Unconfined compressive strength, in pounds per square foot.</p> <p>11 Deg. of Saturation (%): Deg. of Saturation (%)</p> <p>12 PI, %: Plasticity Index, expressed as a water content.</p> |
|---|--|

FIELD AND LABORATORY TEST ABBREVIATIONS

CHEM: Chemical tests to assess corrosivity
 COMP: Compaction test
 CONS: One-dimensional consolidation test
 LL: Liquid Limit, percent

PI: Plasticity Index, percent
 SA: Sieve analysis (percent passing No. 200 Sieve)
 UC: Unconfined compressive strength test, Qu, in ksf
 WA: Wash sieve (percent passing No. 200 Sieve)

MATERIAL GRAPHIC SYMBOLS



AF



Low plasticity PEAT (OL)



Silty SAND (SM)

TYPICAL SAMPLER GRAPHIC SYMBOLS



Auger sampler



CME Sampler



Bulk Sample



Grab Sample



3-inch-OD California w/ brass rings



2.5-inch-OD Modified California w/ brass liners



Pitcher Sample



2-inch-OD unlined split spoon (SPT)



Shelby Tube (Thin-walled, fixed head)

OTHER GRAPHIC SYMBOLS



Water level (at time of drilling, ATD)



Water level (after waiting)



Minor change in material properties within a stratum



Inferred/gradational contact between strata



Queried contact between strata

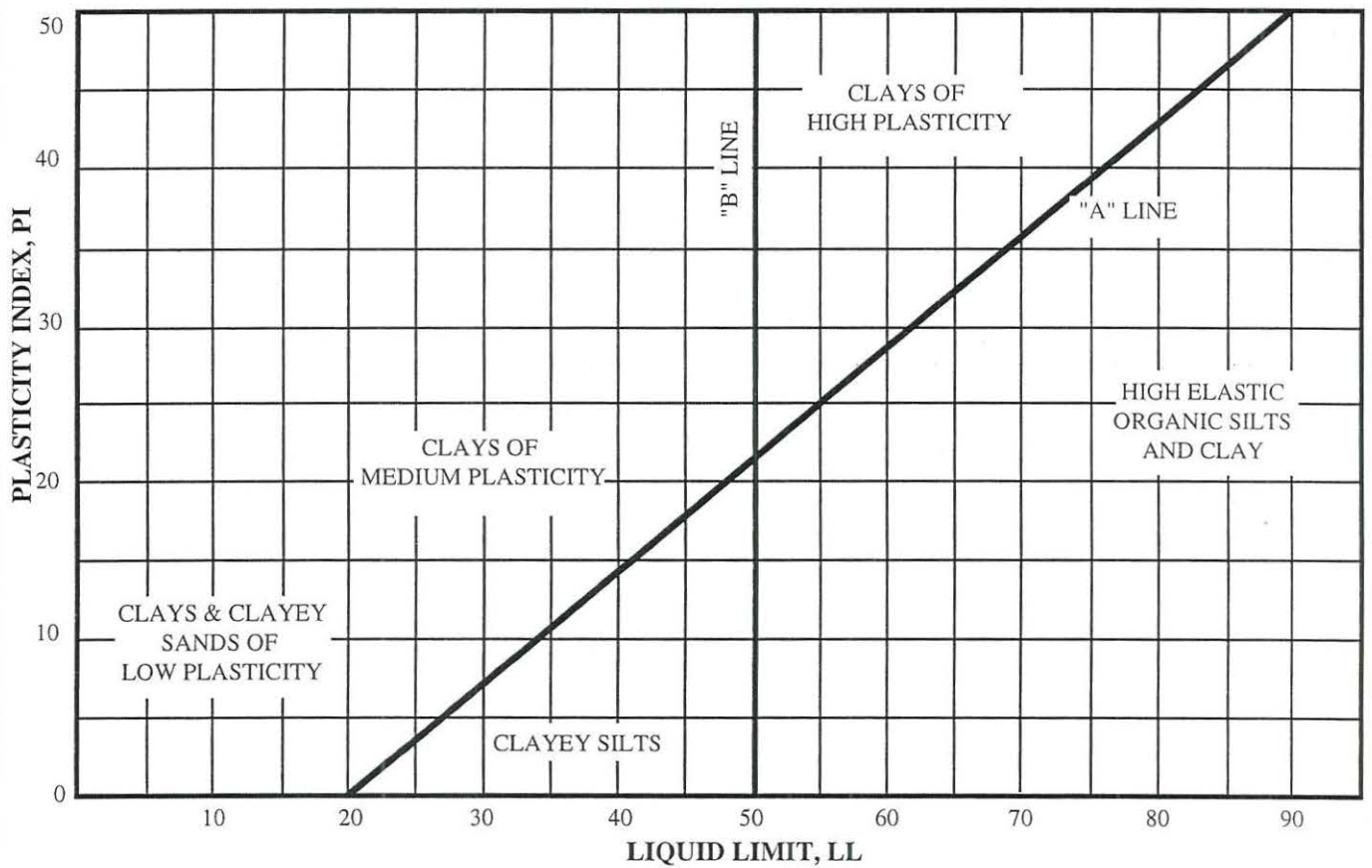
GENERAL NOTES

- Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
- Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.



Michelucci & Associates

Figure 7

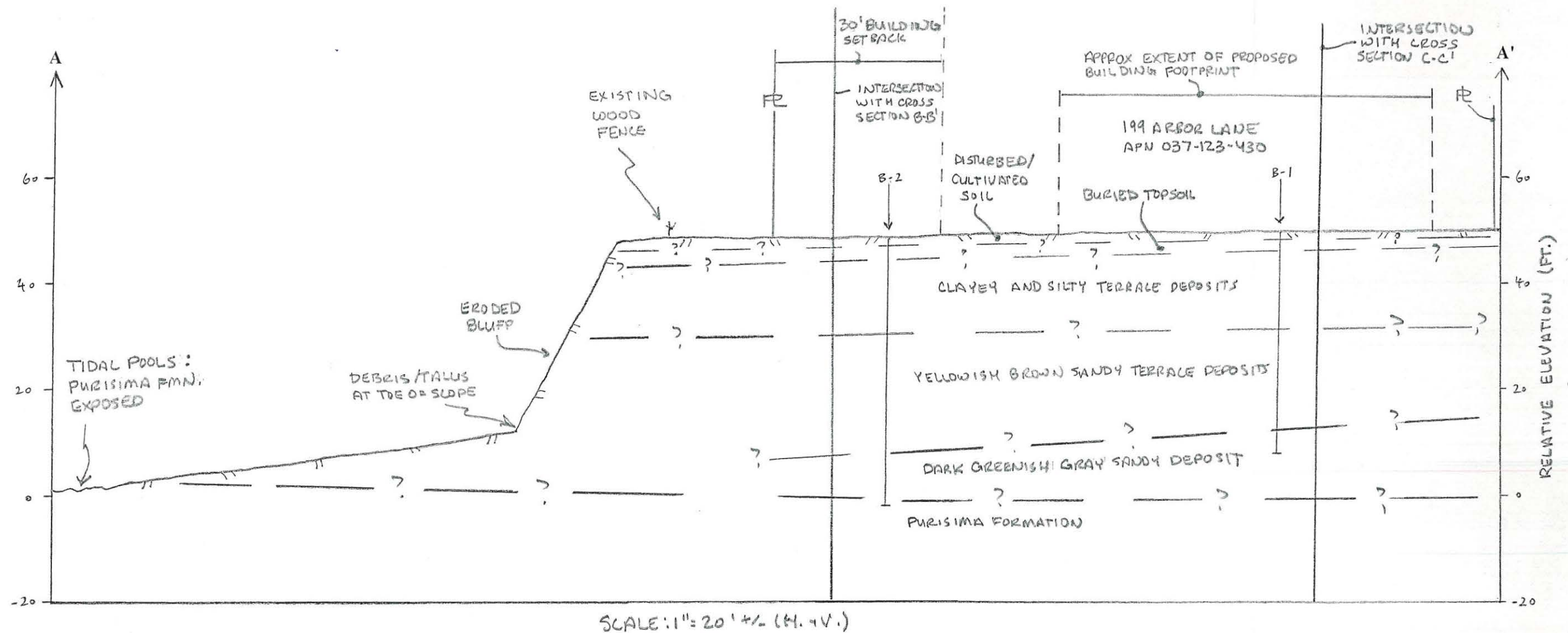


CLASSIFICATION TEST RESULTS									
SAMPLE IDENTIFICATION			ATTERBERG LIMITS			GRAIN SIZES % DRY WT.			
SAMPLE	LETTER DESIGNATION	DESCRIPTION	LIQUID LIMIT	PLASTICITY INDEX	SHRINKAGE LIMIT	SAND	SILT	CLAY	COLLOIDAL
3-1	-	Dark yellowish brown to brown silty clayey fine sand with pebbles (Native Soil)	NON PLASTIC			-	-	-	-

PLASTICITY CLASSIFICATION



CROSS SECTION A-A'



* Existing topography based on topographic contours shown on a topographic survey of the site prepared by Lea & Braze Engineering, Inc., (Sheet SU1) titled, "199 Arbor Lane, Moss Beach, California," dated May 16, 2016.

CROSS SECTION A-A'*

199 Arbor Lane
Moss Beach, San Mateo County, California

Scale: 1"=20'± (H. & V.) Approved: J. M. Prepared By: D. F. & J. P.

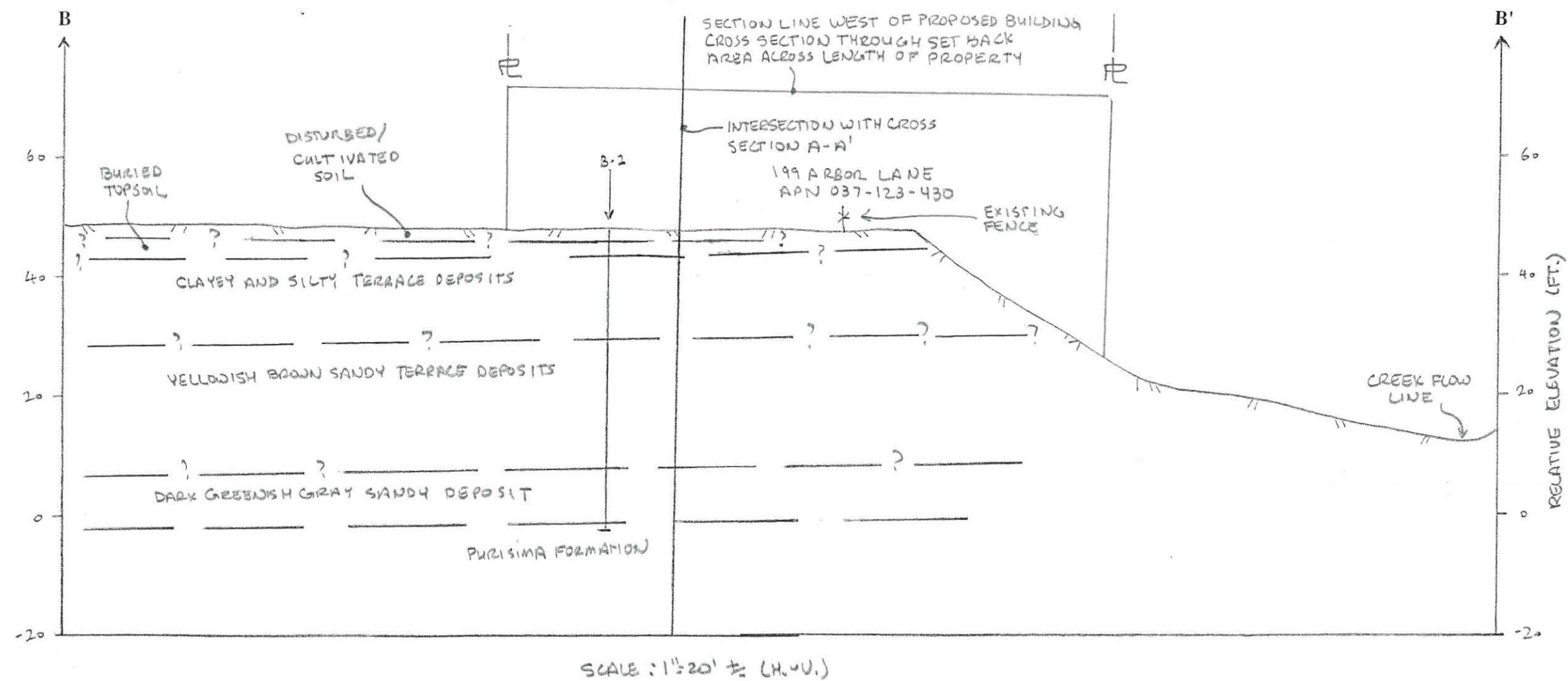
Date: 7-5-16 Revised:



Michelucci & Associates, Inc.

Job No. 16-4572 Figure 9

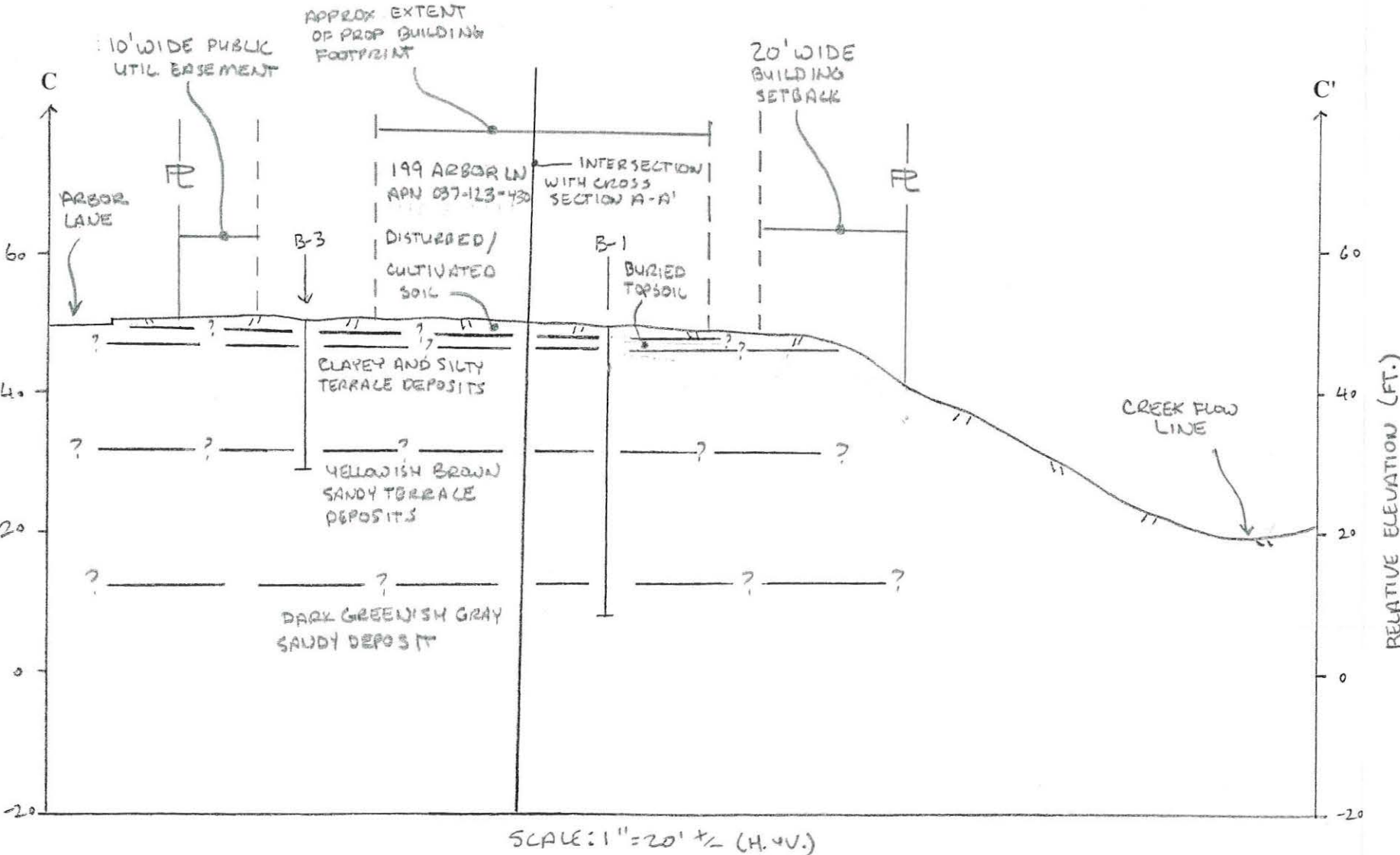
CROSS SECTION B-B'



* Existing topography based on topographic contours shown on a topographic survey of the site prepared by Lea & Braze Engineering, Inc., (Sheet SU1) titled, "199 Arbor Lane, Moss Beach, California," dated May 16, 2016.

CROSS SECTION B-B'*		
199 Arbor Lane Moss Beach, San Mateo County, California		
Scale: 1"=20'± (H. & V.)	Approved: J. M.	Prepared By: D. F. & J. P.
Date: 7-5-16		Revised:
 Michelucci & Associates, Inc.		
Job No. 16-4572		Figure 10

CROSS SECTION C-C'



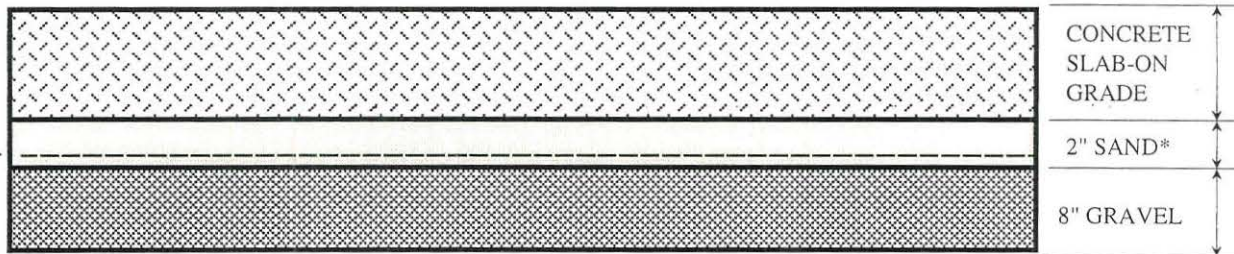
* Existing topography based on topographic contours shown on a topographic survey of the site prepared by Lea & Braze Engineering, Inc., (Sheet SU1) titled, "199 Arbor Lane, Moss Beach, California," dated May 16, 2016.

CROSS SECTION C-C'*		
199 Arbor Lane Moss Beach, San Mateo County, California		
Scale: 1"=20'± (H. & V.)	Approved: J. M.	Prepared By: D. F. & J. P.
Date: 7-5-16		Revised:
 Michelucci & Associates, Inc.		
Job No. 16-4572		Figure 11

MOISTURE RETARDANT BENEATH CONCRETE SLABS

TYPICAL SECTION

POLYETHYLENE MEMBRANE



* or pea gravel

A. MATERIALS

The mineral aggregate for use under floor slabs shall consist of clean rounded gravel and sand. The aggregate shall be free from clay, organic matter, loam, volcanic tuff, and other deleterious substances.

B. GRADATIONAL REQUIREMENTS

The mineral aggregate shall consist of such sizes that the percentage composition by dry weight as determined by laboratory sieve (U.S. Series) will conform to the following gradation:

Sieve Size	Percentage Passing	
	Gravel	Sand
1"	100	
3/4"	90-100	
No. 4	0-5	100
No. 50		0-30

NOTES:

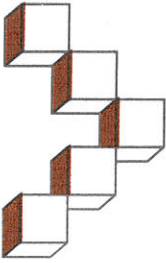
1. The polyethylene membrane should be adequately thick so that it will not be easily damaged during construction. It should be adequately detailed so that there are little or no openings around plumbing at conduit points and near foundations. The membrane should be adequately lapped and sealed at any seams.
2. The sand covering is not a part of the moisture retardant treatment. It is a normally used optional component that gives some protection to the membrane and also aids in curing the concrete. Pea gravel may be used as a substitute for sand.
3. The final moisture retardant detail is to be determined by the project architect.





County of San Mateo - Planning and Building Department

ATTACHMENT K



Michelucci & Associates, Inc.
Geotechnical Consultants

Joseph Michelucci, G.E.
joe@michelucci.com

Richard Quarry
rich@michelucci.com

August 29, 2017
Job No. 16-4572

Via e-mail: Carlos.zubieta@gmail.com

Carlos Zubieta Architect
Attn: Carlos Zubieta
1725-A Abbot Kinney Boulevard
Venice, CA 90291

Re: Geotechnical and Geologic Investigation Update
Proposed New Residence
Vacant Lot on Arbor Lane
APN# 037-123-430
Moss Beach, San Mateo County, California

Dear Mr. Zubieta:

INTRODUCTION

As authorized, we have prepared an update of our geotechnical and geologic investigation report dated July 6, 2016 pertaining to the site of the planned new residence on the currently vacant lot (APN #037-123-430) on Arbor Lane in Moss Beach, San Mateo County, California. The property is referred to as 199 Arbor Lane on various documents.

The purpose of our 2016 study was to provide general geotechnical recommendations and design criteria related to the new residence that is planned at the property. We also evaluated the geologic setting, as the site is located within a complex geologic area where active ocean bluff retreat is occurring immediately west of the property and a strand of the Seal Cove (San Gregorio) Fault is located immediately offshore west of the site. As discussed in our 2016 study, the primary geologic hazard to the site is coastal bluff retreat. In our opinion, although retreat of the ocean bluff occurred during the 2016-2017 winter, the project continues to be feasible from a geologic and geotechnical viewpoint, provided that the recommendations contained in the report are incorporated into the final plans and followed during construction.

SCOPE OF SERVICES

Our current services included:

- * Site inspections by our geotechnical and geologic personnel, Project Geologist John Petroff and Certified Engineering Geologist David F. Hoexter, conducted site inspections on July 13 and August 21, 2017; on August 21, 2017 we measured distances from a fixed/surveyed location shown on the 2016 topographic survey to the current top of cliff (bluff), for comparison to the location of the 2016 surveyed top of cliff;
- * Review of our previous investigation report;
- * Discussions with the architect Carlos Zubieta; and,
- * The preparation of this report.

DISCUSSION

Retreat of the ocean bluff face has occurred since issuance of our July 6, 2016 report. Otherwise, the site remains unchanged from the time of our 2016 investigation and field observations. A fence is located along the bluff top. During our July 13, 2017 site visit, we met a nearby property owner, Gaylen Eslinger, who confirmed the previously noted bluff retreat and indicated that he relocated the fence landward following the bluff retreat occurrence.

The slope down from the site to the Dean Creek drainage along the south side of the site remains visually unchanged (i.e. there does not appear to have been further erosion or retreat of the Dean Creek drainage side walls during the winter of 2016-2017).

Landward retreat of the ocean bluff occurred during the winter of 2016-2017. We measured the approximate retreat distance of the top of the bluff (identified as "top of cliff" on the May 16, 2016 topographic survey by Lea & Braze Engineering, Inc.). Our measurements consisted of taping the distance from a fixed point on the survey, (the street light located adjacent to the Arbor Lane cul-de-sac immediately adjacent to the subject property) to the top of the bluff. Our measurements were accomplished at 20-foot intervals initiated at the intersection of the two fences bordering the property near the south slope along Dean Creek and parallel to the ocean bluff, with the measurements progressing in a northerly direction essentially parallel to the bluff fence.

Our measurements indicate that the bluff retreated approximately 6 feet near the current southwest fence corner post, with a maximum of 11 feet retreat further north approximately 60 feet from the corner post. Due to possible differences in interpretation of the top of bluff location, and to the measurement method (a 200 foot tape), we consider our measurements to be accurate to a distance on the order of 1 to 2 feet.

CONCLUSIONS

Our July 2016 report discusses our calculation of the average bluff retreat rate at the site since 1866. Bluff retreat occurs episodically, taking place and then commonly not occurring for years until a subsequent episode occurs. In our opinion, the 2016-2017 bluff retreat is representative of past episodic events (in occurrence, not necessarily in magnitude), and our previous estimates of average annual rates and anticipated time until retreat reaches the planned residence are unchanged.

Therefore, the recommendations contained in our July 2016 report remain applicable and could be utilized during the preparation of design plans for the project.

LIMITATIONS

The conclusions and opinions expressed in this report are based upon our observations and measurements as described herein. While in our opinion these observations adequately disclose the conditions across the site, the possibility exists that abnormalities or changes in the soil conditions, which were not discovered by this evaluation, could occur.

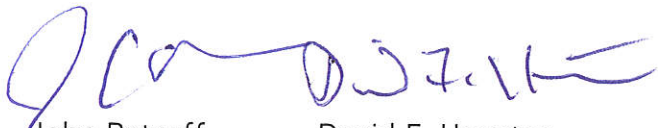
The passage of time may result in significant changes in technology, economic conditions, or site variations that could render this letter inaccurate. Accordingly, neither Carlos Zubieta Architect nor any other party shall rely on the information or conclusions contained in this letter after 12 months from its date of issuance without the express written consent of Michelucci & Associates, Inc. Reliance on this letter after such period of time shall be at the user's sole risk. Should Michelucci & Associates, Inc. be required to review the letter after 12 months from its date of issuance, Michelucci & Associates, Inc. shall be entitled to additional compensation at then-existing rates or such other terms as may be agreed upon between Michelucci & Associates, Inc. and Carlos Zubieta Architect.

This letter was prepared to provide engineering and geologic opinions and recommendations only. It should not be construed to be any type of guarantee or insurance.

CLOSING

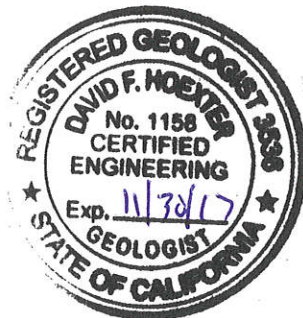
We are pleased to have been of service to you on this project, and will be available to review our findings with you and your other consultants at the earliest convenience.

Very truly yours,
MICHELUCCI & ASSOCIATES, INC.



John Petroff
Project Geologist

David F. Hoexter
Certified Engineering Geologist #1158
(Expires 11/30/17)



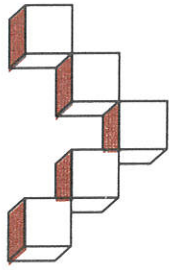
Joseph Michelucci
Geotechnical Engineer #593
(Expires 3/31/19)





County of San Mateo - Planning and Building Department

ATTACHMENT L



Michelucci & Associates, Inc.
Geotechnical Consultants

Joseph Michelucci, G.E.
joe@michelucci.com

Richard Quarry
rich@michelucci.com

November 22, 2017
Job No. 16-4572

via e-mail: Carlos.zubieta@gmail.com

Carlos Zubieta Architect
Attn: Carlos Zubieta
1725-A Abbot Kinney Boulevard
Venice, CA 90291

Re: Response to Steven R. King, Ph.D. October 22, 2017 Memo
Proposed New Residence
Vacant Lot on Arbor Lane
APN# 037-123-430
Moss Beach, San Mateo County, California

Dear Mr. Zubieta:

INTRODUCTION

As authorized, we have prepared a response to the October 22, 2017 memo prepared by Steven R. King, Ph.D. Dr. King's memo comments on various matters related to the planned new residence on the currently vacant lot (APN #037-123-430) on Arbor Lane in Moss Beach, San Mateo County, California. The property is referred to as 199 Arbor Lane on various documents, and also as Lot 12. Specifically, Dr. King provides comments on our August 29, 2017 geotechnical and geologic investigation update letter.

Our initial, 2016, geotechnical and geologic investigation provided geotechnical recommendations and design criteria related to the new residence that is planned at the property, and also evaluated the geologic setting, including fault rupture potential and active ocean bluff retreat occurring immediately west of the property and (to a lesser extent), creek bluff erosion occurring immediately south of the property. Our August 29, 2017 update documented the 2016-2017 ocean bluff retreat and concluded that, although retreat of the ocean bluff occurred during the 2016-2107 winter, the project continues to be feasible from a geologic and geotechnical viewpoint.

DISCUSSION

This discussion follows the order of Dr. King's memo.

1a. Dr. King notes the occurrence of "errors". While Dr. King may disagree with our observations and conclusions, he does not substantiate any "errors". Dr. King initially refers to and takes out of context our use of the term "does not appear" in regards to our discussion of the slope down from the site into the Dean Creek drainage; however, he ignores the preceding phrase "the site remains visually unchanged", which is clear and without equivocation. The full sentence is:

*The slope down from the site to the Dean Creek drainage along the south side of the site remains **visually unchanged** (i.e. there **does not appear** to have been further erosion or retreat of the Dean Creek drainage side walls during the winter of 2016-2017).*

Note, we have added the **bolding** (above) to our initial phrasing.

1b. Dr. King states that we are incorrect in our assessment of the site remaining visually unchanged, in that he observed that the slope is "more deeply concave ... due to undercutting" following the 2016/2017 winter. However, we noted no new undercutting at the toe of the slope, along the slope, or at the top of the slope (or "cliff face/bluff top" as termed by Dr. King). We descended the slope at one location from the adjacent flat property, and also observed the slope from The Strand on the opposite side of the drainage. There were no fresh indications of erosion or undercutting of the soil face, and vegetation was essentially as it had appeared prior to the 2016/2017-winter season. Further, Dr. King claims that the top of the slope is eroding due to its southern exposure with wind and rain causing erosion at the top of the "cliff". However, this location is protected by trees, and the ground surface is not or is only minimally exposed to either wind or direct rainfall. Further, there were no indications following the 2016/2017 winter of erosion along the toe of the slope within the Dean Creek drainage.

1c. The memo uses the terms "near vertical wall" and "cliff face" for the slope adjacent to Dean Creek. These terms are inflammatory and inaccurate. In fact, this is a slope of varying inclinations ranging from locally nearly vertical over short distances to accessible by foot, as is shown on our cross sections B-B' and C'C' in our July 6, 2016 report.

1d. Dr. King refers to fallen trees, erosion, and water flow in his photos #1A and 1B, with the implication that they depict recent storm events. These photos do indicate these occurrences; however, they appear to be a number of years old (apparently obtained at the same as other photos included in the memo, which appear to be from 1994 and 1998), and do not reflect recent (2016-2017) conditions. We have included with this letter photos we took from The Strand on April 12, 2016 and July 14, 2017 of what appears to us to be the same locations as Dr. King's photos. There are no indications of erosion or bluff retreat between the time of Dr. King's photos and our April 2016 photos (prior to the 2016/2017 winter), or between our April 2016 photos and our July 2017 photos (after the 2016/2017 winter).

2a. The King memo refers to some documents obtained from a California Coastal Commission file. Only excerpts are included in the memo, so we do now know what was excluded or taken out of context. Dr. King discusses the bluff erosion along Lot 10 (now protected by ocean front armoring), and seems to imply a similarity in conditions with the subject, Lot 12. However, Lot 10 is located along the ocean bluff where the retreat rate is more significant than along the creek bluff adjacent to Lot 12.

2b. The memo refers to the 1974 consultant author using the term "cliff top". The 1974 consultant's use of this term does not make it correct or appropriate.

2c. We note that the 1974 "projected top of cliff after 50 years" (Dr. King's photos 2D and 2E) proved to be overly conservative, particularly along the ocean bluff and to a lesser extent along the creek bluff. In reality, the 1974 report predicted almost no creek bluff recession and assuming the accuracy of the 1974 report, the Dean Creek slope base and top appear essentially unchanged in the intervening 43 years.

3. The King memo refers to various 1997 documents related to the then proposed and currently present well. The county at that time required a 50-foot setback from the "creek bluff top edge" (June 4, 1997 letter), in lieu of a geotechnical investigation being performed to rationalize a lesser setback. The owner chose to locate the well at the 50-foot setback as opposed to (presumably) the expense of an unnecessary geotechnical investigation required to reduce the setback. It is not clear, but the 50-foot distance appears to derive from a county regulation, which is generalized and in no way reflects site-specific calculations or conditions. What is clear is that this 50-foot distance in no way applies to the current site specific conditions.

CONCLUSIONS

In summary:

1. While the Dean Creek slope is relatively steep, objections to the proposed residence location based solely on steepness are inapplicable. Of importance is the rate of retreat, and there are no indications that the past or potential Dean Creek slope retreat rate will imperil the proposed residence.
2. Significant erosion along the Dean Creek slope during the winter of 2016-2017 does not appear to have occurred.
3. Comparison of the 1974 Lowney Kaldveer figure with the recent site topographic survey and with the site as recently viewed indicates that little to no recession of the creek bank top occurred during the intervening years along the Dean Creek bluff.
4. The 50-foot setback from Dean Creek for the well location has no bearing on any Dean Creek setback for the proposed residence.

CLOSING

We are pleased to have been of service to you on this project, and will be available to review our findings with you and your other consultants at the earliest convenience.

Very truly yours,
MICHELUCCI & ASSOCIATES, INC.



David F. Hoexter
Certified Engineering Geologist #1158
(expires 11/30/19)



Joseph Michelucci
Geotechnical Engineer #593
(expires 3/31/19)



Attached: Photographs 1 and 2.



Photo 1: View from The Strand, April 12, 2016



*Photo 2: View from The Strand, same apparent location on July 13, 2017
as King January 1998 (?) Photos 1A and 1B.*



County of San Mateo - Planning and Building Department

ATTACHMENT M

County of San Mateo
Planning and Building Department

INITIAL STUDY
ENVIRONMENTAL EVALUATION CHECKLIST
(To Be Completed by Planning Department)

1. **Project Title:** New Residence at Arbor Lane, Moss Beach
2. **County File Number:** PLN 2016-00444
3. **Lead Agency Name and Address:** County of San Mateo, 455 County Center, 2nd Floor, Redwood City, CA 94063
4. **Contact Person and Phone Number:** Carmelisa Morales, 650/363-1873, cimorales@smcgov.org
5. **Project Location:** Undeveloped Parcel, Arbor Lane, Moss Beach
6. **Assessor's Parcel Number and Size of Parcel:** 037-123-430; 14,320 sq. ft.
7. **Project Sponsor's Name and Address:** Carlos Zubieta, 1725A Abbot Kinney Boulevard, Venice, CA 90291
8. **General Plan Designation:** Medium Density Urban Residential
9. **Zoning:** R-1 Single-Family Residential District / S-17 Combining District / Design Review District / Coastal Development District (R-1/S-17/DR/CD)
10. **Description of the Project:** Construction of a new 3,338 sq. ft. two-story single-family residence with an attached 468 sq. ft. two-car garage on an undeveloped 14,320 sq. ft. parcel. Two significant-sized Monterey cypress trees are proposed for removal. Three hundred sixty-eight (368) cubic yards (c.y.) of grading (186 c.y. of excavation and 192 c.y. of fill) is proposed. A water well is located on the subject property and will be formally abandoned and capped prior to construction of the proposed single-family residence. The parcel is constrained by two scenic easements.
11. **Surrounding Land Uses and Setting:** The undeveloped parcel is zoned R-1/S-17/DR/CD and surrounded by single-family residential development with the same zoning to the north, south, and east. The Pacific Ocean is to the west (approximately 30 feet from the western property line of the parcel) with an undeveloped parcel located between the subject parcel and coastal bluffs. A wooden fence separates the adjacent parcel from the coastal bluffs. Dean Creek borders the parcel to the south with the top of the creek line encroaching up to approximately 50 feet into the southwestern corner of the parcel. A grove of mature Monterey cypress trees are located on the steep canyon upland slope separating the property from Dean Creek. Two Monterey cypress trees are also located in the middle and left side yard of the parcel.

A Coastal Development Permit (CDP) (Case No. CDP 96-0045) was approved in 1997 to drill a domestic water well on the parcel, but failed to produce adequate water supply.

An amendment to the CDP was approved in 1998 to drill two additional test wells in an attempt to establish a single on-site potable domestic water source to serve a future single-family residence. There is currently one water well in the front left yard of the parcel.

12. **Other Public Agencies Whose Approval is Required:** None.
13. **Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, has consultation begun?:** No.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" or "Significant Unless Mitigated" as indicated by the checklist on the following pages.

	Aesthetics		Hazards and Hazardous Materials		Recreation
	Agricultural and Forest Resources	X	Hydrology/Water Quality		Transportation/Traffic
X	Air Quality	X	Land Use/Planning	X	Tribal Cultural Resources
X	Biological Resources		Mineral Resources	X	Utilities/Service Systems
X	Cultural Resources	X	Noise	X	Mandatory Findings of Significance
X	Geology/Soils		Population/Housing		
X	Climate Change		Public Services		

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appro-

appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in 5. below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063(c)(3)(D)). In this case, a brief discussion should identify the following:
 - a. Earlier Analysis Used. Identify and state where they are available for review.
 - b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c. Mitigation Measures. For effects that are "Less Than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources. Sources used or individuals contacted should be cited in the discussion.

1. AESTHETICS. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
1.a. Have a significant adverse effect on a scenic vista, views from existing residential areas, public lands, water bodies, or roads?			X	
Discussion: The project parcel is constrained by the following two scenic easements: 1. A scenic easement included as part of the Cypress Cliffs Subdivision (Case No. X6D-448 approved on February 23, 1972 and recorded on May 4, 1972), the subdivision that resulted in the creation of the project parcel, bisects the southern section of the project parcel. The scenic easement requires a 20-ft. setback from the easement's edge and fully covers Lot 11, the adjacent parcel to the west of the project parcel. The subdivision				

map states that the “scenic easement as shown on Lots 11, 12, 13, 14, and 17 shall be kept open and free from buildings or structures of any kind except that sideline fencing may run to top of bank.”

2. A 75-ft. wide scenic easement that starts at Wienke Way and runs west through Arbor Lane to the coastal bluffs bisects the northern section of the project parcel. This scenic easement was enacted by the California Coastal Commission (CCC) as part of Resolution No. 74-270 (approved on July 15, 1974 and recorded on November 24, 1975) in association with a Lot Line Adjustment (LLA) (Case No. X6E-122) affecting Lots 16 through 21 to ensure that future development does not intrude onto the scenic easement. Public access was also granted along this scenic easement at Lot 11.

Although the project parcel is not located within a designated State or County Scenic Corridor and is not visible from Highway 1 (Cabrillo Highway), the proposed 24'-3 7/8" high residence will be visible from the Pacific Ocean and bluff-top area to the west, and residential area to the north and east. A grove of mature Monterey cypress trees will partially screen the proposed residence from the residential area south of Dean Creek. The proposed residence may also be visible from residential areas upslope of the property. However, residential development fronting the bluff tops to the north and south are generally closer to the coastal bluffs than the proposed residence.

On November 9, 2017, as proposed and conditioned, the Coastsides Design Review Committee (CDRC) recommended approval of the proposed residence to the San Mateo County (County) Planning Commission (PC), based on the findings that included compliance with all applicable Design Review (DR) standards. Specifically, the CDRC found that the proposed project complies with Section 6565.20(B) (*Neighborhood Definition and Neighborhood Character*) of the Standards for Design for One-Family and Two-Family Residential Development in the Midcoast (Midcoast DR Standards) as the original design presented to the CDRC on July 13, 2017 was revised with the interest of preserving the views and ensuring compatibility with the surrounding neighborhood. The applicant responded to the CDRC's concerns from the July 13, 2017 meeting with improved massing, articulation, colors and materials, and a slightly reduced height. The second story of the proposed residence was reduced and the second story deck was relocated to the back of the property to preserve privacy and minimize visual impacts from many of the neighboring residences. As a result, the CDRC was able to make the findings to recommend approval of the design of the proposed residence as it complies with all applicable DR standards.

With the constraints of the two scenic easements and as demonstrated by the recommendation of approval by the CDRC, the visual impact of the proposed residence will not be significant.

Source: Project Plans, Project Location, County Geographic Information System (GIS) Maps, Field Observations, 1972 Cypress Cliffs Subdivision Map, CDRC Recommendation Letter (for November 9, 2017 meeting), County Midcoast DR Standards, California Coastal Commission Resolution No. 74-270.

1.b.	Significantly damage or destroy scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
------	--	--	--	--	---

Discussion: The project parcel does not contain and is not located in close proximity to any rock outcroppings or historic buildings within a state scenic highway. Two significant-sized Monterey cypress trees (trees with a diameter at breast height (dbh) of 12 inches or more) are located within the building footprint of the proposed residence and therefore require removal. These trees will be replaced with two Monterey cypress trees (15-gallon size stocks) and be located at the rear of the property to minimize visual impacts for residential areas in the north and east and to create an

opportunity for future vegetative screening of the proposed residence from residential areas south of Dean Creek. Source: Project Plans, Project Location, Field Observations, County GIS Maps, County General Plan Scenic Corridors Map.				
1.c.	Significantly degrade the existing visual character or quality of the site and its surroundings, including significant change in topography or ground surface relief features, and/or development on a ridgeline?			X
Discussion: The proposed project will require 368 c.y. of grading (186 c.y. of excavation and 182 c.y. of fill) to accommodate the proposed residence, landscaping, and drainage features. The proposed grading will not represent a significant change in topography. Additionally, in accordance with the CDRC's recommendation of approval as discussed in Section 1.a. and 1.b., the proposed project will not significantly degrade the existing visual character or quality of the site. Source: Project Plans, Project Location, Field Observations, County GIS Maps, CDRC Recommendation Letter (for November 9, 2017 Meeting), County Zoning Regulations.				
1.d.	Create a new source of significant light or glare that would adversely affect day or nighttime views in the area?			X
Discussion: The project plans recommended for approval by the CDRC include exterior lighting for the proposed residence. The CDRC's recommendation acknowledged the project's compliance with Section 6565.20(E)4 of the Midcoast DR Standards regarding exterior lighting which states: "All exterior, landscape, and site lighting shall be designed and located so that light and glare are directed away from neighbors and confined to the site," "Exterior lighting should be minimized and designed with a specific activity in mind so that outdoor areas will be illuminated no more than is necessary to support the activity designed for that area," and "Minimize light and glare as viewed from scenic corridors and other public view corridors." The proposed locations and design of all such lighting will not create a new source of significant light or glare that would adversely affect day or nighttime views in the area. Source: Project Plans, Project Location, CDRC Recommendation Letter (for November 9, 2017 Meeting), County Midcoast DR Standards.				
1.e.	Be adjacent to a designated Scenic Highway or within a State or County Scenic Corridor?			X
Discussion: The project is not adjacent to a designated State or County Scenic Corridor. The closest County Scenic Corridor is the Cabrillo Highway (Highway 1) County Scenic Corridor which is over 400 feet away. Source: Project Location, County GIS Maps, County General Plan Scenic Corridors Map.				

1.f.	If within a Design Review District, conflict with applicable General Plan or Zoning Ordinance provisions?				X
Discussion: The project parcel is located within a Design Review (DR) District as it is zoned R-1/S-17/DR/CD (R-1 Single-Family Residential District / S-17 Combining District / DR District / Coastal Development District). As discussed in Section 1.a., the CDRC determined that the proposed project is in compliance with all applicable DR standards. The proposed single-family residence is an allowed use in the R-1 Zoning District. The project parcel meets the minimum parcel size and parcel width requirements. The proposed residence will have conforming setbacks (for both the zoning district and scenic easements) and a building height, building floor area, and parcel coverage that are under the maximum allowed. Further, the proposed residence complies with the S-17 Combining District daylight plane requirement. The CD District overlay indicates that the project parcel is located within the Coastal Zone and therefore requires a Coastal Development Permit (CDP) for any proposed development. Approval of a CDP is conditional upon a project's compliance with all applicable San Mateo County Local Coastal Program (County LCP) policies. The proposed project complies with all applicable LCP policies, specifically regarding visual resources which is indicative of the project's recommendation for approval by the CDRC as discussed in Section 1.a. Conclusively, the proposed project is not in conflict with provisions of the R-1 Zoning District, S-17 Combining District, DR District, or CD District. Source: Project Plans, Project Location, CDRC Recommendation Letter (for November 9, 2017 Meeting), County Zoning Regulations, County Midcoast DR Standards, County Local Coastal Program.					
1.g.	Visually intrude into an area having natural scenic qualities?			X	
Discussion: The project parcel is undeveloped and located at the western end of Arbor Lane in Moss Beach. As discussed in Section 1.a., the project parcel is restricted by two scenic easements. One of the easements, created through the 1972 Cypress Cliffs Subdivision (the subdivision that created the project parcel), bisects the southern section of the project parcel and covers all of Lot 11, the adjacent northwestern parcel. Lot 11 will declared to be not a building site and, instead, a lot for exclusive use by the neighborhood's homeowner's association and the property owners of the lots in the resulting subdivision. The subdivision map also states that the "scenic easement as shown on Lots 11, 12, 13, 14, and 17 shall be kept open and free from buildings or structures of any kind except that sideline fencing may run to top of bank." This scenic easement aims to preserve scenic views for the property owners of the lots in the resulting subdivision and for members of the public visiting the neighborhood and surrounding area. The other scenic easement that bisects the northern section of the project parcel runs west along Arbor Lane from Weinke Way. This scenic easement, recorded by the California Coastal Commission in 1975, affected the developments of Lots 16 through 21 to ensure that future development does not intrude onto the scenic easement. This easement also granted public access along the scenic easement on Lot 11. Both scenic easements created larger setbacks for any development proposed on the project parcel. As discussed in Sections 1.a. through 1.f., the proposed project is in compliance with the setback requirements of the scenic easements. In addition to these restrictive scenic easements, the proposed project complies with all applicable zoning regulations, specifically Design Review standards. As discussed in Sections 1.a. through 1.f., the CDRC determined the proposed residence to be in compliance with Midcoast Design					

Review standards and recommended approval to the San Mateo County Planning Commission. The proposed residence was revised from its original design (presented to the CDRC on July 13, 2017) with the interest of preserving the views and ensuring compatibility with the surrounding neighborhood.

Based on these findings, the proposed project will have a less than significant visual impact on natural scenic qualities.

Source: Project Plans, Project Location, County GIS Maps, Field Observations, 1972 Cypress Cliffs Subdivision Map, CDRC Recommendation Letter (for November 9, 2017 Meeting), County Zoning Regulations, County Midcoast DR Standards, California Coastal Commission Resolution No. 74-270.

2. AGRICULTURAL AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State's inventory of forestland, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
2.a. For lands outside the Coastal Zone, convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
Discussion: The project parcel is located within the Coastal Zone. The project parcel is also not within an area that is mapped or designated as Prime or Unique Farmland or Farmland of Statewide Importance. Source: Project Location, County GIS Maps, California Department of Conservation Farmland Mapping and Monitoring Program.				
2.b. Conflict with existing zoning for agricultural use, an existing Open Space Easement, or a Williamson Act contract?				X
Discussion: The project parcel is zoned R-1 (Single-Family Residential District). Agricultural uses are not permitted in the R-1 Zoning District. There is also no Open Space Easement or Williamson Act contract associated with the project parcel.				

Source: Project Location, County Zoning Regulations, County GIS Maps, County Williamson Act Contracts.				
2.c.	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?			X
Discussion: The project parcel is undeveloped and largely surrounded by single-family residential development. The project parcel does not contain, is not adjacent to, or is not near an area designated as Farmland or forestland (land that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits). Therefore, the project parcel will not convert Farmland to a non-agricultural use or forestland to non-forest use. Source: Project Location, County GIS Maps, California Department of Conservation Farmland Mapping and Monitoring Program.				
2.d.	For lands within the Coastal Zone, convert or divide lands identified as Class I or Class II Agriculture Soils and Class III Soils rated good or very good for artichokes or Brussels sprouts?			X
Discussion: Although the project parcel is located within the Coastal Zone, the project parcel does not contain Class I or Class II Agriculture Soils, or Class III Soils rated good or very good for artichokes or Brussels sprouts. Source: Project Location, Natural Resources Conservation Service Web Soil Survey - California Revised Storie Index.				
2.e.	Result in damage to soil capability or loss of agricultural land?			X
Discussion: The project site is located on soils classified with a Storie Index of Grade 2 - Good (Typic Argiustolls, loamy-Urban land association 5 to 15 percent slopes). The proposed project will convert approximately 30 percent of the parcel to a non-agricultural use. However, as discussed in Section 2.b., agriculture is not an allowed use within the project parcel's zoning district (R-1 Single-Family Residential District). The project parcel is also located within a residential neighborhood with the surrounding area also composed of primarily residential uses. With the project parcel's location within the R-1 Zoning District and existing uses in the surrounding neighborhood, the project parcel is not suitable for a future agricultural use and, thus, the proposed project poses no impact. Source: Project Location, Natural Resources Conservation Service Web Soil Survey - California Revised Storie Index, County Zoning Regulations.				

2.f.	Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))? <i>Note to reader: This question seeks to address the economic impact of converting forestland to a non-timber harvesting use.</i>				X
Discussion: The project parcel has not been identified as forestland or timberland, therefore, there is no conflict with existing zoning or cause for rezoning. Source: Project Location, County GIS Maps, County Zoning Regulations.					

3.	AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
		<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
3.a.	Conflict with or obstruct implementation of the applicable air quality plan?			X	
Discussion: The proposed project does not include any conflict with or obstruct implementation of the Bay Area 2010 Clean Air Plan (CAP), an air quality plan created to improve the Bay Area's air quality and protect public health and the climate. Once constructed, ongoing use of the single-family residence would have minimal impacts to the air quality standards set forth for the region by the Bay Area Air Quality Management District (BAAQMD). During construction of the proposed residence, construction vehicles are also required to meet California Air Resources Board regulations to reduce air pollution (e.g., limits on idling). During construction activities, air emissions will be generated from construction equipment and construction worker vehicles. However, any such construction-related emissions would be temporary and localized. Source: Project Plans, Bay Area Air Quality Management District.					
3.b.	Violate any air quality standard or contribute significantly to an existing or projected air quality violation?		X		
Discussion: During project construction, air emissions will be generated from site grading, construction equipment, and construction worker vehicles. However, any such construction-related emissions will be temporary and localized. The BAAQMD has established thresholds of significance for construction emissions and operational emissions. As defined in the BAAQMD's 1999 California Environmental Quality Act (CEQA) Guidelines, the BAAQMD does not require quantification of construction emissions due to the number of variables that can impact the calculation of construction emissions. Instead, the					

BAAQMD emphasizes implementation of all feasible control measures to minimize emissions from construction activities. The BAAQMD provides a list of construction-related control measures that, when fully implemented, would significantly reduce construction-related air emissions to a less than significant level. These control measures are included in the mitigation measure provided below.

Further, Section 2-1-113 (*Exemption, Sources, and Operations*) of the BAAQMD General Requirements exempts sources of air pollution, associated with the construction of a single-family residence, used solely for residential purposes, as well as road construction, from obtaining an Authority to Construct or Permit to Operate.

Mitigation Measure 1: The applicant shall submit an Air Quality Best Management Practices Plan to the Planning and Building Department prior to the issuance of any grading permit "hard card" or building permit that, at a minimum, includes the "Basic Construction Mitigation Measures" as listed in Table 8-1 of the BAAQMD California Environmental Quality Act (CEQA) Guidelines (May 2011). The following Bay Area Air Quality Management District Best Management Practices for mitigating construction-related criteria air pollutants and precursors shall be implemented prior to beginning any grading and/or construction activities and shall be maintained for the duration of the project grading and/or construction activities:

- a. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- b. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- c. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day.
- d. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- e. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485, of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- f. Roadways and building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- g. Idling times shall be minimized either by shutting equipment or vehicles off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485, of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- h. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications.
- i. Minimize the idling time of diesel powered construction equipment to two minutes.
- j. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Source: Project Plans, Bay Area Air Quality Management District.

3.c.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?		X		
Discussion: As of December 2012, San Mateo County is a non-attainment area for PM-2.5. On January 9, 2013, the Environmental Protection Agency (EPA) issued a final rule to determine that the Bay Area attains the 24-hour PM-2.5 national standard. However, the Bay Area will continue to be designated as "non-attainment" for the national 24-hour PM-2.5 standard until the BAAQMD submits a "re-designation request" and a "maintenance plan" to EPA and the proposed re-designation is approved by the EPA. A temporary increase in the project area is anticipated during construction since these PM-2.5 particles are a typical vehicle emission. The temporary nature of the proposed construction and California Air Resources Board vehicle regulations reduce the potential effects to a less than significant impact. Mitigation Measure 1 in Section 3.b. will minimize increases in non-attainment criteria pollutants generated from project construction to a less than significant level. Source: Project Plans, Bay Area Air Quality Management District.					
3.d.	Expose sensitive receptors to significant pollutant concentrations, as defined by BAAQMD?		X		
Discussion: Any pollutant emissions generated from the proposed project will primarily be temporary in nature. The project site is in a medium density urban residential area with few sensitive receptors (i.e., single-family residences) located within the project vicinity. Additionally, the surrounding tree canopy and vegetation in the southern section of the parcel will help to insulate the project area from nearby sensitive receptors. Mitigation Measure 1 will also help in minimizing any potentially significant exposure to nearby sensitive receptors to a less than significant level. Source: Project Plans, Project Location.					
3.e.	Create objectionable odors affecting a significant number of people?			X	
Discussion: The proposed project is to construct a single-family residence in an urban residential area of the Midcoast. Once constructed, the daily use of the residence would not create objectionable odors. The proposed project has the potential to generate odors associated with construction activities. However, any such odors will be temporary and are expected to be minimal. Source: Project Plans.					
3.f.	Generate pollutants (hydrocarbon, thermal odor, dust or smoke particulates, radiation, etc.) that will violate existing standards of air quality on-site or in the surrounding area?		X		

Discussion: Construction of the single-family residence is expected to generate a temporary increase in dust, motor vehicle and diesel particulate matter in the project area, and minimal increase from vehicles of residents and visitors. This increase is not expected to violate existing standards of on-site air quality given the required vehicle emission standards required by the State of California for vehicle operations. The following mitigation measure is provided to ensure that these pollutants during project construction will be less than significant.

Source: Project Plans, California Department of Motor Vehicles.

Mitigation Measure 2: The applicant shall submit a dust control plan to the Planning Department for review and approval prior to the issuance of a building permit for the project. The approved plan shall be implemented for the duration of any grading, demolition, and construction activities that generate dust and other airborne particles. The plan shall include the following control measures:

- a. Water all active construction areas at least twice daily.
- b. Water or cover stockpiles of debris, soil, sand, or other materials that can be blown by the wind.
- c. Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least 2 feet of freeboard.
- d. Apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking, and staging areas at the construction sites. Also, hydroseed or apply non-toxic soil stabilizers to inactive construction areas.
- e. Sweep daily (preferably with water sweepers) all paved access roads, parking, and staging areas at the construction sites.
- f. Sweep adjacent public streets daily (preferably with water sweepers) if visible soil material is carried onto them.
- g. Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).
- h. Limit traffic speeds on unpaved roads within the project parcel to 15 miles per hour (mph).
- i. Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- j. Replant vegetation in disturbed areas as quickly as possible.

Source: Project Plans, Bay Area Air Quality Management District.

4. BIOLOGICAL RESOURCES. Would the project:				
	Potentially Significant Impacts	Significant Unless Mitigated	Less Than Significant Impact	No Impact
4.a. Have a significant adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		X		

Discussion: A biological resources assessment (Kopitov assessment) was prepared by Kopitov Environmental LLC (Kopitov), dated May 9, 2015, for a 1.04-acre biological study area (BSA) centered on the project parcel. An update to the Kopitov assessment (CRE assessment), dated October 2, 2017, was also prepared by Coast Ridge Ecology LLC (CRE) to include an updated California Natural Diversity Database (CNDDDB) map, updated review of the potential presence of special-status species on the property, and a map of the riparian corridor associated with Dean Creek. The immediate surrounding area around the project site includes single-family residences, the Fitzgerald Marine Reserve, and a steep gully with an intermittent creek (Dean Creek).

Special-Status Plant Species

Kopitov identified 56 special-status plant species with a potential to occur within the BSA. No special-status species were observed during Kopitov's field visit of the project site. However, suitable habitat may be present for Hickman's potentilla (*Potentilla hickmanii*) and coastal marsh milk-vetch (*Astragalus pycnostachyus*) in the Dean Creek habitat located south of the project parcel. With field visits conducted during peak bloom season (two referenced populations located within 1 mile of the project site were visited to confirm this), Kopitov concluded that there is no potential for these species to occur in the project area and surrounding vicinity. Kopitov also did not find any United States Fish and Wildlife Service (USFWS) designated critical plant species within 5 miles of the project site.

CRE updated the CNDDDB list in the Kopitov assessment and the resultant list identified 13 special-status plant species within a 3-mile radius of the project site (as shown in Figure 2 of the CRE assessment). More recent special-status plant observation data on Blasdale's bent grass (*Agrostis blasdalei*) and perennial goldfields (*Lasthenia californica* ssp. *macrantha*) was discovered by CRE. An occurrence of Blasdale's bent grass was observed approximately 0.2 miles north of the project site. Perennial goldfields were observed approximately 1.0 miles north of the project site at Montara State Beach. Both species are not expected to be present on the project parcel or surrounding area as these species were not detected during the field visits conducted by Kopitov during peak blooming season. No other additional special-status plant species were determined to have any potential for presence in the project area and surrounding vicinity other than those identified by Kopitov.

Special-Status Wildlife Species

Kopitov identified six special-status or unique wildlife species to have the potential to occur in the BSA (listed below). These species have the potential to occur in the BSA due to nearby occurrences and/or potential suitable habitat.

1. *Monarch Butterfly*: The nearest known roost site for the monarch butterfly is located approximately 2 miles east of the project. Threats to monarch butterflies include loss of winter roost habitat. The Monterey cypress grove has the potential to provide winter roosting habitat. Although two Monterey cypress trees will be removed to accommodate the proposed residence, Kopitov determined that the tree removal would have a less than significant impact to potential winter roosting habitat as the majority of the Monterey cypress grove would not be affected by the project.
2. *California Red-Legged Frog (CRF)*: The CRF, a federally threatened species and a California species of special concern, was previously recorded as moving long distances (occurring mostly at night) over land between water sources during the winter season. CRFs can be threatened by a variety of human-caused actions such as urban development, wetland habitat loss, and habitat fragmentation. Federally designated critical habitat for the CRF is located approximately 0.5 miles east of the study area. CRFs were not observed during the field visit, but have been found to be approximately 1.5 miles south of the project parcel near ponds west of the Half Moon Bay Airport. A sighting was also reported during the construction of the nearby Fitzgerald Marine Reserve Dardenelle Trail in 2012. However, Kopitov did not observe any breeding habitat for the CRF in the project area.
3. *San Francisco Garter Snake (SFGS)*: Historically, the prime habitats of the SFGS, a federal and state listed endangered species and fully protected under Section 5050 of the California Fish and Game Code (CFGF), include aquatic habitats with dense vegetation with preference near open hillsides and habitats with shallow water edges. The SFGS's peak activity occurs during spring and early summer when they are typically found near ephemeral ponds hunting Pacific tree frogs (*Pseudacris regilla*) that use shallow ponds for breeding. As ephemeral ponds dry, SFGS move to more permanent aquatic habitats where CRF breed. The SFGS can also be found in upland habitat characterized as open grassy habitat, coyote bush (*Baccharis pilularis*), wild oat (*Avena fatua*), wild barley (*Hordeum spp.*), and various brome species (*Bromus spp.*). Shrub species likely provide sufficient cover from predators while grasses provide exposed surfaces for basking. The SFGS retreats to shelters for dormant periods which include upland habitats inhabited by fossorial mammals. Mating generally occurs during warm days in early spring as snakes emerge from hibernacula and disperse to nearby aquatic habitat. The SFGS are threatened by a variety of human-caused actions such as urban development, wetland habitat loss, and habitat fragmentation. The SFGS also fall prey to species such as domestic cats, raccoons, and bullfrogs. The historic range for SFGS includes the entirety of San Mateo County. The nearest occurrence was approximately 1.5 miles south of the BSA. Since the project area is within the SFGS dispersal range, there is potential for Dean Creek and the BSA to provide dispersal and upland habitat for this species.
4. *San Francisco Dusky-Footed Woodrat (SFDW)*: The SFDW is a CDFW species of special concern. This species typically inhabits brushy and forested habitats in California. The SFDW builds mounded, multi-chambered stick complexes (often referred to as lodges) ranging from 4 to 8 feet in diameter and up to 6 feet in height. The SFDW structures were not observed in the BSA. However, since the Dean Creek habitat was inaccessible during the field visit, it was not possible to eliminate the potential for this species to occur in the gully. The BSA provides the potential for the SFDW to use the poison oak and Monterey cypress habitat for forage and nesting. The potential threats include habitat loss and anthropogenic disturbance.
5. *Salt Marsh Common Yellowthroat (SMCY)*: The SMCY is a California species of special concern and a year-round resident of San Mateo County. Its primary habitat includes dense vegetation of wetlands, marshes, estuaries, prairies, and riparian areas that are used for nesting and foraging. The nearest recorded occurrence was approximately 1.8 miles south

of the project site in Princeton Marsh. This species was not detected during the field visit. However, Dean Creek has potential suitable habitat to support this species.

6. Hoary Bat: All bat species are given special consideration under the California Environmental Quality Act (CEQA). Bats can roost in nearby structures and Monterey cypress trees and may forage over the project site. Threats include loss of habitat and mortality due to human activities.

Kopitov concluded that construction activities could result in substantial adverse effects to CRF and SFGS. Construction activities, including, but not limited to, vegetation removal, grading, staging, and other construction-related activities, may result in mortality of these species or interference with dispersal. Both species have the potential for dispersal and movement from breeding ponds and creeks into the BSA during significant rain events. Additionally, Kopitov concluded that the proposed project may result in significant adverse effects to SFDW that may be nesting in the poison oak habitat and bats that may roost in the Monterey cypress trees.

CRE visited the project site in September 2017 and found no additional observations of SFGS. The only species not assessed in the Kopitov assessment that was not included in the CRE assessment was fogbelt bumblebee (*Bombus caliginosus*). The fogbelt bumblebee does not have federal or state-listing protection, but is ranked as an S1/S2 (State Critically Imperiled/State Imperiled) by the State of California. This species has not been seen in the region since the late 1920s when occurrences were recorded in the Moss Beach, Pacifica, and Hillsborough areas. CRE determined this species to not likely be present on the project site as it has likely been extirpated from the region for decades. No additional special-status wildlife species were determined to have any potential for presence in the project area and surrounding vicinity other than those identified in the Kopitov assessment.

Story poles were required to be installed 10 days prior to this proposed project being presented to the CDRC at their July 13, 2017 CDRC meeting. Some vegetation, primarily California blackberry, on the project parcel was mowed to accommodate the story poles installation on July 3, 2017. The CRE assessment states that there was no evidence of SFDW middens found within the mowed area during their site inspection on September 14, 2017. Additionally, no SFDW middens were observed on the remainder of the project parcel or within the Dean Creek corridor downslope of the parcel.

Kopitov (with no recommended changes from CRE) has provided the following mitigation measures to ensure that adverse effects to these species are less than significant:

Mitigation Measure 3: Within 48 hours prior to the onset of any project-related activities, a qualified biologist should conduct a pre-construction survey of the project area to ensure that no California red-legged frogs or San Francisco garter snakes are present. In addition, immediately prior to vegetation removal or other construction activities, a qualified biologist familiar with the habitat requirements of California red-legged frogs and San Francisco garter snakes shall conduct a pre-construction survey to determine whether any of these species is located within the project area.

Mitigation Measure 4: A minimum 3-ft. high exclusion fence shall be installed around the limits of construction, including clearing, grading, and staging, unless otherwise directed by San Mateo County, United States Fish and Wildlife Service, or California Department of Fish and Wildlife, to create a barrier to prevent the California red-legged frog and San Francisco garter snake from entering the project site. No polymesh or similar materials shall be used as fencing materials. The fencing should be removed only when all construction equipment is removed from the project site. Fencing shall be inspected and any opening shall be repaired immediately. If openings are found, the project area shall be inspected by a biological monitor to ensure that special-status species have not entered the project area. The designated biological monitor may be a construction team manager or supervisor trained in the identification of special-status species.

Mitigation Measure 5: Vegetation or other materials shall not be stockpiled at the project site as it

provides potential hiding areas for California red-legged frogs, San Francisco garter snakes, and other wildlife species. Vegetation shall be placed directly into a disposal container and removed from the construction area, as practicable. If vegetation is stockpiled on the ground, removal shall be conducted under the supervision of a qualified biologist.

Mitigation Measure 6: To avoid, minimize, and mitigate impacts to the California red-legged frogs, San Francisco garter snakes, and their respective habitats, a worker education program and/or education materials prepared by a qualified biologist shall be provided to all workers prior to onset of construction activities.

Mitigation Measure 7: If required by San Mateo County, California Department of Fish and Wildlife, or United States Fish and Wildlife Service, a biological monitor shall inspect the project area prior to the beginning of construction activities to ensure that the California red-legged frogs and San Francisco garter snakes have not entered the project area. The designated biological monitor may be a construction team manager or supervisor trained in the identification of special-status species.

Mitigation Measure 8: Under no circumstances should California red-legged frogs and San Francisco garter snakes be handled, relocated, or otherwise harmed or harassed at any time. San Mateo County, United States Fish and Wildlife Service, and California Department of Fish and Wildlife shall be notified immediately upon discovery of these species in the project site or surrounding area.

Mitigation Measure 9: Prior to the start of vegetation removal, a qualified biologist familiar with the San Francisco dusky-footed woodrat and its habitat requirements shall survey for their nests within or immediately adjacent to the potential habitat (i.e., poison oak scrub).

- a. If no nests are observed, no further mitigation is required.
- b. If nests are observed, but would not be directly impacted by construction activities, a qualified biologist shall establish a 10-ft. buffer around the nests using exclusion fencing to ensure that they are not accidentally destroyed by construction activities. Exclusion fencing shall remain in place until project completion.
- c. If a nest is observed within the vegetation clearing area, a qualified biologist shall disassemble the nest by hand and relocate and reconstruct the nest away from the construction area.

Mitigation Measure 10: If trees are removed or pruned, a qualified biologist shall conduct a pre-construction bat roost survey to determine if bats are present in the trees on or near the project parcel. If bats are detected, suitable measures to avoid and/or exclude bats shall be determined by the California Department of Fish and Wildlife.

Source: Project Plans, Project Location, County GIS Maps, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015), Coastal Ridge Ecology LLC Update to Biological Resources Assessment (dated October 2, 2017).

4.b. Have a significant adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		X		
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Discussion: The Kopitov assessment identified four sensitive habitats in the BSA: habitats supporting rare and endangered species; Dean Creek; the Fitzgerald Marine Reserve, a State of California ecological reserve; and coastal bluffs. Potential impacts to habitats supporting rare and

endangered species are discussed in Section 4.a. and include mitigation measures to ensure that impacts are reduced. The proposed residence will also be located approximately 70 feet from the top of the coastal bluffs. In addition to the minimum required zoning setbacks and setback required for the 75-ft. scenic easement (as discussed in Section 1.a.) bisecting the northern half of the project parcel, Kopitov determined that the proposed project will not impact the coastal bluffs. Regarding the Fitzgerald Marine Reserve, a State of California designated ecological reserve to protect natural areas with use restricted to scientific research relating to the management and enhancement of marine resources, no disturbance or taking of marine life, archaeological resources, or geological formations are allowed, and no fishing or collecting is permitted unless authorization is approved by the CDFW for scientific research. The proposed project does not propose any of these unauthorized activities.

Dean Creek is an intermittent creek that flows adjacent to the project area at the bottom of a steep gully on the southern boundary. Historically, Dean Creek has intermittent flow, but during high rainfall years, such as 2016 and 2017, Dean Creek may have year-round flow. Residential uses in the surrounding area also contribute additional flow, especially during the dry season due to yard irrigation and runoff/seepage to the creek. A portion of Dean Creek flows through underground pipes while a portion flows through an open channel.

The gully along the southern boundary of the project parcel was too steep to safely traverse. However, Kopitov examined the mouth of Dean Creek that flows to Kelp Cove in the Fitzgerald Marine Reserve. An old, rusted, broken metal pipe was identified on the bed of the creek. Kopitov stated that this pipe likely runs the length of the creek until it is undergrounded. During the field visit, the creek bed was damp with no standing water observed in the accessible portion of the creek bed (approximately 60 to 100 feet from the mouth). A shallow amount of water (less than 1-inch deep) was observed inside the pipe at about 100 feet upstream of the mouth. Kopitov also observed hydrophytic plants on the creek bed and bank approximately 60 to 75 feet upstream of the creek mouth to include arroyo willow (*Salix lasiolepis*), *Typha species (sp.)*, hoary stinging nettle (*Urtica sarmentosa*), silver weed cinquefoil (*Potentilla anserine*), and curly dock (*Rumex crispus*). The hydrophytic plants were restricted to the creek bed around the pipe. *Typha sp.* was also observed further upstream covering a larger area which indicates a potential wetland or a wider stream bed. Other plant species observed at the toe of the gully and within the creek bed and bank included Italian stone pine (*Pinus pinea*), garden nasturtium (*Tropaeolum majus*), cape ivy (*Delairea odorata*), pampas grass (*Cortaderia selloana*), periwinkle (*Vince species*), wild radish (*Raphanus sp.*) and inceptant/hottentot fig (*Carpobrotus edulis*). Monterey cypress trees line the top of the gully and continue down slope. A portion of the gully adjacent to the southern project boundary was degraded by human use (i.e., rope swings on the cypress trees). There was no visible understory.

Pursuant to LCP Policy 7.7 (*Definition of Riparian Corridors*), a riparian corridor is defined by the "limit of riparian vegetation" which is a line determined by the association of the following plant and animal species normally found near streams, lakes, and other bodies of freshwater: red alder, jaumea, pickleweed, big leaf maple, narrow-leaf cattail, arroyo willow, broadleaf cattail, horsetail, creek dogwood, black cottonwood, and box elder. This corridor must contain at least a 50% cover of some combination of these plants to be considered a riparian corridor. During their field visit, over two years since Kopitov's field visit, CRE did not identify any of these plants within the corridor section of Dean Creek. CRE identified a combination of native and non-native plant species such as Bur Reed (*Sparganium sp.*), California blackberry (*Rubus ursinus*), stinging nettle (*Urtica dioica*), wild radish (*Raphanus sp.*), nasturtium (*Tropaeolum majus*), and cape ivy (*Delairea oderata*). The outside edge of the riparian wetland floodplain feature of the creek was used to delineate the outside edge of the riparian zone. The boundary between the floodplain and upland area was determined by a visible soil, slope, and vegetative change. The riparian buffer zone extends upslope from the floodplain area and encompasses a large section of the steep slope dominated by Monterey cypress trees. CRE observed very little understory vegetation with the exception of invasive plants such as

cape ivy. Based on these findings and the LCP definition of riparian corridor, Dean Creek does not have a riparian corridor.

Pursuant to LCP Policy 7.11 (*Establishment of Buffer Zones*), for intermittent streams where no riparian vegetation exists along both sides of riparian corridors, a 30-ft. buffer zone is required. The distance from the floodplain/corridor boundary to the project parcel's southern boundary line, a distance closer than from the midpoint of the stream, varies from approximately 50 to 70 feet. CRE determined that the proposed residence complies with this buffer zone requirement and concluded that there would be no impacts to Dean Creek.

The mitigation measures in Section 4.a., recommended by Kopitov, were included to avoid and reduce adverse effects to sensitive or special-status species that have potential suitable habitat in these sensitive habitat areas.

Source: Project Plans, Project Location, County GIS Maps, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015), Coastal Ridge Ecology LLC Update to Biological Resources Assessment (dated October 2, 2017), County Local Coastal Program.

4.c. Have a significant adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

X

Discussion: The Pacific Ocean is located approximately 30 feet west from the western property line of the parcel. An undeveloped parcel owned by the neighborhood's homeowner's association is located between the subject parcel and coastal bluffs. Dean Creek borders the parcel to the south with the top of the creek line encroaching up to approximately 50 feet into the southwestern corner of the parcel. The Kopitov assessment discussed in Section 4.a. concluded that the proposed project would not result in substantial adverse effects to any County, State, or Federal-protected wetlands or streams through direct removal, filling, hydrological interruptions, or other means provided that appropriate buffer areas and construction Best Management Practices are implemented. However, construction activities may increase stormwater runoff to Dean Creek. Implementation of the following mitigation measure is included, as recommended by Koptiov, to reduce any potential effects to wetlands or streams to less than significant by controlling sediment and erosion:

Mitigation Measure 11: Where sediment and erosion control materials are installed, repaired, or removed (i.e., wattles, silt fences, etc.), a qualified biologist should check the work area to ensure that sensitive species are not present or entrapped. Polymesh and/or other similar materials should not be used as these can entrap or snag reptiles, amphibians, or other small animals.

Source: Project Location, County GIS Maps, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015).

4.d. Interfere significantly with the movement of any native resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?

X

Discussion: The Kopitov assessment discussed in Section 4.a. determined that the Monterey cypress and poison oak on the project site provide suitable nesting and foraging habitat for migratory nesting birds and raptors. Kopitov also stated that the project site would result in the loss of some habitat that could potentially be suitable for migration and travel corridors. However, the project site would likely result in less than significant adverse effects to the movement of native resident species or migratory wildlife species or corridors as the gully, coastal bluffs, and adjacent vacant parcel to the northwest (owned by the neighborhood's homeowner's association) would continue to provide connectivity to migration and travel corridors.

If construction activities coincide with the typical bird nesting season (February 1 to September 15), the project has the potential to result in substantial adverse effects to nesting birds as a result of nest abandonment or direct take of birds, young, nests, and eggs. Kopitov recommends that vegetation removal occur during the non-nesting season. The following mitigation measure was added, as recommended by Kopitov, to reduce impacts to less than significant so that nesting birds are protected from disturbance and harm:

Mitigation Measure 12: If the construction activities coincide with the nesting bird season (February 1 to September 15), pre-construction nesting bird surveys shall be conducted by a California Department of Fish and Wildlife-approved biologist no more than 10 days prior to planned construction activities in order to locate nests within and adjacent to the proposed construction area. For all migratory bird species, the survey will include nesting birds within a 100-ft. radius from the project site.

- a. If no active nests are detected, construction activities may take place as scheduled.
- b. If an active nest is observed, the project shall be modified as necessary to avoid direct take of identified nest, eggs, and/or young. Modifications may include establishment of protective buffer as determined by a qualified biologist. Typical protective buffer zones are 50 feet for passerine nests and 250 feet for raptors. If construction activities are significantly impacted by the buffer zones, California Department of Fish and Wildlife shall be contacted to request a reduced buffer that would still protect nesting birds.

Source: Project Location, County GIS Maps, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015).

4.e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (including the County Heritage and Significant Tree Ordinances)?			X	
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Discussion: A grove of mature Monterey cypress trees are located on the steep canyon upland slope separating the property from Dean Creek. Two Monterey cypress trees are also located in the middle and left side yard of the project parcel. All the trees on the project parcel are of significant size (12 inches or greater in diameter at breast height) as defined in Section 12,012 of the San Mateo County Significant Tree Ordinance. The two Monterey cypress trees located in the middle and left side yard of the project parcel will be removed to accommodate the proposed residence.

The ECR assessment states that the removal of these two trees would not impact Dean Creek as they are located on the flat bluff top within the proposed building envelope, approximately 21 feet and 55 feet from the top of the creek. ECR states the removal of these trees would cause no disturbance to the steep slope downward to Dean Creek. In response to public comments received during the 10-day commenting period prior to the November 9, 2017 CDRC meeting, a response letter (CRE response letter) was prepared by CRE, dated November 3, 2017, stating that the trees

can be easily removed without causing erosion to the edge of the coastal bluffs and Dean Creek. The other trees on the property will be preserved with proper tree protection measures (i.e., fiber rolls and tree protection fencing). Fencing will also be used to delineate the construction area, providing an adequate physical barrier and buffer zone between the trees and construction activities.

A 2:1 tree replacement is required for parcels within a Design Review District in the Coastsides. Four trees of at least 15-gallon size each are required for the two trees proposed for removal. The applicant requested an exception to this requirement. The proposed landscape plan shows two Monterey cypress trees to be planted at the rear left corner of the project parcel and a combination of native grasses and shrubs in the open areas on the west and south sides of the proposed residence. The proposed landscaping aims to reduce further impacts to surrounding neighboring properties. Another reason for the requested exception is the constraint in feasible locations for additional trees due to the scenic easements along the west and south sides of the proposed residence. These easements do not permit development, including trees, within their boundaries. Additionally, the CDRC recommended approval of the proposed project which includes the proposed landscape plan.

Based on the discussion above, with the exception of tree replacement, the proposed project does not conflict with any local policies or ordinances protecting biological resources including the County Significant Tree Ordinance.

Source: Project Plans, Project Location, County GIS Maps, County Significant Tree Ordinance, Coastal Ridge Ecology LLC Update to Biological Resources Assessment (dated October 2, 2017), Coastal Ridge Ecology LLC Response to Comments on Update to Biological Resources Assessment (dated November 3, 2017).

4.f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, other approved local, regional, or State habitat conservation plan?		X		
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Discussion: The project site is located within the Fitzgerald Marine Reserve (Reserve), a 402-acre natural resource area extending along San Mateo County's north coast, 3 miles south from Point Montara (at the northern end of Vallemar Street) to the south end of Pillar Point and 1,000 feet west into the ocean from the mean high tide line. Part of the Monterey Bay National Marine Sanctuary, the Reserve covers 402 acres and includes 370 acres of intertidal and subtidal marine habitat below the high tide line and 32 acres of upland coastal bluffs. The Reserve is under joint custodianship of the County Parks Department and the California Department of Fish and Wildlife, and is operated pursuant to the policies and guidelines of the 2002 Final Fitzgerald Marine Reserve Master Plan. The Reserve is both a "Marine Life Refuge" and an "Area of Biological Significance (ASBS)", designated by the State of California.

The boundary of the Reserve includes coastal bluffs to the west of the project parcel and all of Arbor Lane which is designated as a "trail easement" in the Final Draft of the Fitzgerald Marine Reserve Master Plan. The western boundary of the project parcel is approximately 30 feet from the top of the coastal bluff. A vacant parcel is located between the coastal bluffs and project parcel. There is also a wooden fence located along the coastal bluff top. Activities within the Fitzgerald Marine Reserve are restricted to scientific research relating to the management and enhancement of marine resources, no disturbance or taking of marine life, archaeological resources or geological formations is allowed, and no fishing or collecting is permitted unless authorization is approved by the CDFW for scientific research. As discussed in Section 4.b., the proposed project does not propose any of these unauthorized activities. The mitigation measures in Sections 4.a., 4.c., and 4.d., recommended by Kopitov, were included to avoid and reduce adverse effects to sensitive or

special-status species with potential suitable habitat in the sensitive habitat areas discussed in Section 4.b., including the Fitzgerald Marine Reserve. With these mitigation measures, project impacts to the Reserve area will be less than significant. Source: Project Plans, Project Location, 2002 Final Fitzgerald Marine Reserve Master Plan.				
4.g. Be located inside or within 200 feet of a marine or wildlife reserve?		X		
Discussion: The project parcel is located within the Fitzgerald Marine Reserve. As discussed in Sections 4.a. and 4.b., the proposed project does not propose any unauthorized activities and the mitigation measures in Section 4.a., 4.c, and 4.d. are included to ensure that any such impacts are less than significant. Source: Project Location, County GIS Maps, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015).				
4.h. Result in loss of oak woodlands or other non-timber woodlands?				X
Discussion: The project parcel includes no oak woodlands or other timber woodlands. Thus, the project poses no impact. Source: Project Location, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015).				

5. CULTURAL RESOURCES. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
5.a. Cause a significant adverse change in the significance of a historical resource as defined in CEQA Section 15064.5?				X
Discussion: The State of California Office of Historic Preservation has not identified any known historical resources on the project parcel or surrounding area. Therefore, the project poses no impact. Source: Project Location, County GIS Maps, California Register of Historical Resources.				
5.b. Cause a significant adverse change in the significance of an archaeological resource pursuant to CEQA Section 15064.5?		X		
Discussion: The project parcel is also surrounded by residential development and is the last of the undeveloped parcels on Arbor Lane with the exception of the adjacent parcel to the northwest of the project parcel which has been deemed a non-building site in the 1972 Cypress Cliffs Subdivision Map. Based on the project parcel's existing surrounding land uses, it is not likely that the project parcel and surrounding area would host any archaeological resources. However, the following				

mitigation measure is provided in the event that any cultural, paleontological, or archeological resources are encountered during construction and excavation activities:

Mitigation Measure 13: In the event that should cultural, paleontological, or archaeological resources be encountered during site grading or other site work, such work shall immediately be halted in the area of discovery and the project sponsor shall immediately notify the Community Development Director of the discovery. The applicant shall be required to retain the services of a qualified archaeologist for the purpose of recording, protecting, or curating the discovery as appropriate. The cost of the qualified archaeologist and of any recording, protecting, or curating shall be borne solely by the project sponsor. The archaeologist shall be required to submit to the Community Development Director for review and approval a report of the findings and methods of curation or protection of the resources. No further grading or site work within the area of discovery shall be allowed until the preceding has occurred. Disposition of Native American remains shall comply with CEQA Guidelines Section 15064.5(e).

Source: Project Location, County GIS Maps, 1972 Cypress Cliffs Subdivision Map.

5.c.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		
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Discussion: Based on the project parcel's existing surrounding land uses, it is not likely that the project parcel and surrounding area would host any paleontological resource or site or unique geologic feature. However, Mitigation Measure 13 in Section 5.b. is provided to ensure that the impact is less than significant if any resources are encountered.

Source: Project Location, County GIS Maps.

5.d.	Disturb any human remains, including those interred outside of formal cemeteries?		X		
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Discussion: No known human remains are located within the project area or surrounding vicinity. In case of accidental discovery, Mitigation Measure 13 in Section 5.b. is recommended.

Source: Project Location, County GIS Maps.

6. GEOLOGY AND SOILS. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
6.a. Expose people or structures to potential significant adverse effects, including the risk of loss, injury, or death involving the following, or create a situation that results in:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other significant evidence of a known fault? <i>Note: Refer to Division of Mines and Geology Special Publication 42 and the County Geotechnical Hazards Synthesis Map.</i>		X		

Discussion: A geotechnical report (Michelucci report) was prepared by Michelucci & Associates, Inc. (Michelucci), dated July 6, 2016. A geotechnical update and review of structural plans and calculations (updated Michelucci reports) were also prepared by Michelucci, dated August 29, 2017 and November 22, 2017, respectively. Michelucci determined the closest mapped major active fault zone to the project site is Seal Cove Fault Zone with its main active trace located approximately 0.1 miles to the northeast of the project parcel. The Seal Cove Fault is at the northern extension of the San Gregorio Fault which extends south of Monterey Bay and northward into the Pacific Ocean, west of San Francisco. The major active trace of the San Andreas Fault is mapped approximately 9.0 miles northeast of the project parcel while the Hayward and Calaveras Faults are located further northeast. The Seal Cove, San Andreas, and Calaveras Faults are all part of the major active San Andreas Fault System and the sources of numerous earthquakes that have impacted the San Francisco Bay Area and throughout California. Although it is highly probable that the proposed project will experience very strong ground shaking during a moderate to large nearby earthquake, Michelucci states that the proposed project can be developed as planned, provided that the geotechnical recommendations from their report be implemented. Therefore, since the project location and its distance from the cited fault zones can result in strong seismic ground shaking in the event of an earthquake, the following mitigation measure is recommended to ensure that such impacts are less than significant:

Mitigation Measure 14: The design of the proposed development (upon submittal of the building permit) on the subject parcel shall generally follow the recommendations cited in the Geotechnical and Geologic Investigation prepared by Michelucci & Associates, Inc. and its subsequent updates regarding seismic criteria, grading, drilled piers, slab-on grade construction, and surface drainage. Any such changes to the recommendations by the project geotechnical engineer cited in this report and subsequent updates shall be submitted for review and approval by the County's geotechnical engineer.

Source: Project Plans, Project Location, San Mateo County Hazards Maps, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016), Michelucci & Associates, Inc. Geotechnical and Geologic Investigation Update (dated August 29, 2017).

ii. Strong seismic ground shaking?		X		
Discussion: Pursuant to the discussion in Section 6.a.i., strong seismic ground shaking may occur in the event of an earthquake. However, the mitigation measure provided in Section 6.a.i. will ensure that impacts are less than significant. Source: Project Plans, Project Location, San Mateo County Hazards Maps, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016), Michelucci & Associates, Inc. Geotechnical and Geologic Investigation Update (dated August 29, 2017).				
iii. Seismic-related ground failure, including liquefaction and differential settling?		X		
Discussion: The project parcel is located within an area designated as “very low” potential for liquefaction. However, pursuant to the discussion in Section 6.a.i., its respective mitigation measure is provided to ensure that any impacts are less than significant. Source: Project Location, San Mateo County Hazards Maps, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016), Michelucci & Associates, Inc. Geotechnical and Geologic Investigation Update (dated August 29, 2017).				
iv. Landslides?		X		
Discussion: The project parcel is located within an area designated as “few existing landslides.” Further, the Michelucci report determined that there are no indications of landsliding within or near the project parcel. However, pursuant to the discussions in Section 6.a.i. and 6.a.iii., the mitigation measure in Section 6.a.i. is provided to ensure that impacts from landslides are less than significant. Source: Project Location, San Mateo County Hazards Maps, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016), Michelucci & Associates, Inc. Geotechnical and Geologic Investigation Update (dated August 29, 2017).				
v. Coastal cliff/bluff instability or erosion?		X		
<i>Note to reader: This question is looking at instability under current conditions. Future, potential instability is looked at in Section 7 (Climate Change).</i>				
Discussion: The Michelucci report includes an aerial photographic interpretation discussing sixteen sets of aerial photographic stereo pairs taken from 1941 and 2005. In 1941, the project site and surrounding area were row crops with a leveled ground surface and slight slope causing drainage discharge to flow northwest toward the coastal bluffs. Past bluff retreat appeared to be due to periodic sloughing of relatively loose soil. The creek bank of Dean Creek was exposed and sloped down to the creek channel with the slope exhibiting minor slumping and sloughing of soil, but no indication of landslides or active bluff retreat. Subsequent imagery through 2005 indicated periodic sloughing and falling of soil from the exposed ocean bluff face both directly west of the project site and to the north and south. By 1991, a retaining wall was present along the ocean bluff at the western boundary of the existing residence north of the project parcel which still exists today. <u>Dean Creek</u> The Michelucci report states that the sloping creek bluff to the south of the project parcel is subject to minor sloughing and erosion, and growth of dense vegetation, but that the top of the bluff does not				

appear to retreat. Michelucci compared 1997 and 2016 site surveys and found that they indicated negligible, minor slope retreat, which, based on the general slope appearance in the historical aerial photographs, is applicable to a longer period of time. Michelucci determined that the creek bluff retreat does not appear to be a direct hazard to the proposed residence.

Coastal Bluffs

Michelucci observed indications of failure of the ocean bluffs during the winter of 2015-2016 with debris from the slope present at the base of the slope and a bare "scar" on the bluff face at the location of where the debris fell. The failure mechanism of the ocean bluff face appears to be undercutting of the relatively weak, unconsolidated bluff sediments by wave action at the beach level. Comparing the 1997 and 2016 site surveys, the bluff retreat at four representative locations from the north to the south were 8, 16, 12, and 6 feet, an average of 10.5 feet corresponding to an average retreat rate of 0.55 feet per year. The western property line of the project parcel is located approximately 30 feet at its closest point from the edge of the ocean bluffs. The Michelucci report states that the most conservative average bluff retreat rate of 1.25 feet per year (taken from a published calculation of average annual ocean bluff retreat prepared by Gary Griggs and Lauret Savoy in 1985) was used in their projection, resulting in approximately 24 years for the bluff to reach the western property line of the project parcel. At this rate, the ocean bluff would retreat an additional 30 feet to the western building setback line in approximately 48 years, and to the closest point of the proposed residence, approximately 17 feet further inland, in approximately 14 additional years. At the maximum rate of 1.25 feet per year, Michelucci estimated that the bluff would reach the proposed residence in approximately 62 years.

The Michelucci report acknowledges that the 62 year period is conservative and that their calculations (based on the same 1866 site survey used by Griggs and Savoy) resulted in a lower average rate of 0.73 feet per year. Further, additional calculations based on the historical aerial photographs and site surveys also resulted in lower average rates of retreat ranging from 0.40 to 0.78 feet per year. The Michelucci report concluded that the average retreat rate is likely slower and with a more reasonable rate of 0.78 feet per year, the ocean bluffs would reach the western property line, western building setback line, and closest point of the proposed residence in approximately 38, 76, and 99 years, respectively. Michelucci notes that these calculated rates of bluff retreat are based on an assumed constant retreat rate. Ocean bluff failures occur episodically and not uniformly through time. Therefore, the measured/calculated rates of retreat must be assumed to be indicative, but not strictly representative of long-term rates. An individual failure episode may involve several feet of bluff retreat followed by many years, even decades, of no retreat.

The Michelucci report also discusses a qualitative evaluation of ocean bluff seismic stability. Michelucci states that geologic literature suggests that ocean bluff failures have occurred along the San Mateo County coast during earthquakes, specifically during the 1905, 1957, and 1989 San Francisco, Daly City, and Loma Prieta events. The events appear to generally consist of "peeling" and "slumping" of bluff face material similar to undercutting by wave erosion, as opposed to circular or block glide-type failures. The Michelucci report concluded that earthquake-caused instability would be similar in scope to the periodic, primarily winter wave undercut failures, and would likely replace or occur at the location of an imminent undercutting failure. Thus, seismic bluff failure would be incorporated into as opposed to being additive to the long-term bluff retreat.

Based on these findings, the Michelucci report concludes that the project can be developed as planned, provided that the recommendations in their report are followed. Their primary geotechnical consideration involves the upper 2 to 4 feet of surface soil that is generally weak. This material is compressible and consideration should be given to supporting the planned slab on grade floor. Drilled reinforced concrete piers will gain support in the strong Marine Terrace Deposits that were encountered below the weak surface soils in the three test borings conducted by Michelucci. In order to fortify the foundation and make it resistant to bluff retreat, consideration should be given to

constructing deep drilled piers along the edge of the structure closest to the bluffs and utilizing the slab and more conventional interior and perimeter piers as “tie backs.”

Updates to Geotechnical Report

The updated Michelucci reports, as mentioned in Section 6.a.i., found that the slope down from the project site to Dean Creek was visually unchanged with no indication of further erosion or retreat from the 2016-2017 winter season. Michelucci descended the slope of the cliff at one location from the adjacent flat parcel and also observed the slope from The Strand, a road along the bluff to the south, on the opposite side of the creek. There were no fresh indications of erosion or undercutting of the soil face, and the vegetation did not change. The top of the slope continues to be protected by trees with ground surface only minimally exposed to wind and direct rainfall.

Regarding the ocean bluff, Michelucci observed a retreat of approximately 6 feet closer to the existing fence on the adjacent parcel (specifically, the fence post at the southwest corner), and a maximum of 11 feet further north, approximately 60 feet from the corner post since the original report was prepared in 2016. The updated Michelucci reports state that their measurements are accurate to a distance on the order of 1 to 2 feet due to the possible differences in interpretation of the top of bluff location. Michelucci states that the 2016-2017 bluff retreat is representative of past episodic events (in occurrence, not necessarily in magnitude), and their previous estimates of average annual rates and anticipated time until the retreat reaches the proposed residence remain unchanged. Based on these findings, the updated Michelucci reports concluded that the proposed project continues to be feasible from a geologic and geotechnical viewpoint provided that the recommendations in the original Michelucci report are incorporated into the final building plans and followed during construction.

Mitigation Measure 14 in Section 6.a.i. has been included to ensure the recommendations from the Michelucci report and its subsequent updates are implemented, thus ensuring that impacts are less than significant.

Source: Project Plans, Project Location, San Mateo County Hazards Maps, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016), Michelucci & Associates, Inc. Geotechnical and Geologic Investigation Update (dated August 29, 2017), Michelucci & Associates, Inc. Response to Steven R. King, Ph.D, October 22, 2017 Memo (dated November 22, 2017).

6.b. Result in significant soil erosion or the loss of topsoil?		X		
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Discussion: Pursuant to the discussion in Section 6.a.v. regarding the soil conditions of the project site, the mitigation measures in Sections 3.b., 3.f., and 4.a., and the following mitigation measure are included to control erosion during both project construction activities. With these mitigation measures, the project impact will be less than significant.

Mitigation Measure 15: Prior to the issuance of the building permit for the proposed project, the applicant shall submit to the Planning Department and the Department of Public Works, for review and approval, erosion and drainage control plans that show how the transport and discharge of soil and pollutants from and within the project site will be minimized. The plans shall be designed to minimize potential sources of sediment, control the amount of runoff and its ability to carry sediment by diverting incoming flows and impeding internally generated flows, and retain sediment that is picked up on the project site through the use of sediment-capturing devices. The plans shall also limit application, generation, and migration of toxic substances, ensure the proper storage and disposal of toxic materials, and apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface waters. Said plan shall adhere to the San Mateo Countywide Stormwater Pollution Prevention Program “General Construction and Site

Supervision Guidelines," including:

- a. Sequence construction to install sediment-capturing devices first, followed by runoff control measures and runoff conveyances. No construction activities shall begin until after all proposed measures are in place.
- b. Minimize the area of bare soil exposed at one time (phased grading).
- c. Clear only areas essential for construction.
- d. Within five (5) days of clearing or inactivity in construction, stabilize bare soils through either non-vegetative Best Management Practices (BMPs), such as mulching, or vegetative erosion control methods, such as seeding. Vegetative erosion control shall be established within two (2) weeks of seeding/planting.
- e. Construction entrances shall be stabilized immediately after grading and frequently maintained to prevent erosion and to control dust.
- f. Control wind-born dust through the installation of wind barriers such as hay bales and/or sprinkling.
- g. Soil and/or other construction-related material stockpiled on-site shall be placed a minimum of 200 feet, or to the extent feasible, from all wetlands and drain courses. Stockpiled soils shall be covered with tarps at all times of the year.
- h. Intercept runoff above disturbed slopes and convey it to a permanent channel or storm drains by using earth dikes, perimeter dikes or swales, or diversions. Use check dams where appropriate.
- i. Provide protection for runoff conveyance outlets by reducing flow velocity and dissipating flow energy.
- j. Use silt fence and/or vegetated filter strips to trap sediment contained in sheet flow. The maximum drainage area to the fence should be 0.5 acres or less per 100 feet of fence. Silt fences shall be inspected regularly and sediment removed when it reaches 1/3 the fence height. Vegetated filter strips should have relatively flat slopes and be vegetated with erosion-resistant species.
- k. Throughout the construction period, the applicant shall conduct regular inspections of the condition and operational status of all structural BMPs required by the approved erosion control plan.
- l. No erosion or sediment control measures will be placed in vegetated areas.
- m. Environmentally-sensitive areas shall be delineated and protected to prevent construction impacts.
- n. Control of fuels and other hazardous materials, spills, and litter during construction.
- o. Preserve existing vegetation whenever feasible.

Source: Project Plans, Project Location, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016), Michelucci & Associates, Inc. Geotechnical and Geologic Investigation Update (dated August 29, 2017), Michelucci & Associates, Inc. Response to Steven R. King, Ph.D, October 22, 2017 Memo (dated November 22, 2017), San Mateo Countywide Stormwater Pollution Prevention Program.

6.c.	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, severe erosion, liquefaction or collapse?		X		
Discussion: Pursuant to the discussions in Sections 3.b., 4.a., and 6.a., their associated mitigation measures will assure that the proposed project does not result in on- or off-site landslide, lateral spreading, subsidence, severe erosion, liquefaction, or collapse. Therefore, these mitigation measures will assure that the project impact will be less than significant. Source: Project Plans, Project Location, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016), Michelucci & Associates, Inc. Geotechnical and Geologic Investigation Update (dated August 29, 2017), Michelucci & Associates, Inc. Response to Steven R. King, Ph.D, October 22, 2017 Memo (dated November 22, 2017).					
6.d.	Be located on expansive soil, as noted in the 2010 California Building Code, creating significant risks to life or property?				X
Discussion: The project geotechnical report concludes that the project parcel is not located on expansive soils. Thus, the project poses no impact. Source: Project Location, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016).					
6.e.	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X
Discussion: The proposed residence will have sanitary sewer service connections from the Montara Water and Sanitary District and therefore does not require or include any septic tanks or wastewater disposal systems. Thus, the project poses no impact. Source: Project Plans, Project Location, County GIS Maps, Montara Water and Sanitary District.					

7. CLIMATE CHANGE. Would the project:				
	Potentially Significant Impacts	Significant Unless Mitigated	Less Than Significant Impact	No Impact
7.a. Generate greenhouse gas (GHG) emissions (including methane), either directly or indirectly, that may have a significant impact on the environment?		X		
Discussion: Greenhouse Gas Emissions (GHG) include hydrocarbon (carbon monoxide; CO₂) air emissions from vehicles and machines that are fueled by gasoline. Project-related grading and construction of the proposed residence will result in the temporary generation of GHG emissions along travel routes and at the project site. In general, construction involves GHG emissions mainly from exhaust from vehicle trips (e.g., construction vehicles and personal vehicles of construction workers). Even assuming construction vehicles and workers are based in and traveling from urban areas, the potential project GHG emission levels from construction would be considered minimal. Although the project scope is not likely to generate significant amounts of greenhouse gases, the mitigation measure is provided in Section 3.b. to ensure that any impacts are less than significant. Source: Project Plans, Project Location.				
7.b. Conflict with an applicable plan (including a local climate action plan), policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				X
Discussion: The proposed project does not conflict with the County of San Mateo Energy Efficiency Climate Action Plan (EECAP). Source: Project Plans, 2013 San Mateo County Energy Efficiency Climate Action Plan.				
7.c. Result in the loss of forestland or conversion of forestland to non-forest use, such that it would release significant amounts of GHG emissions, or significantly reduce GHG sequestering?				X
Discussion: The project parcel is not considered forest land, nor does it host any such forest canopy. Therefore, the project poses no impact. Source: Project Plans, Project Location, County GIS Maps.				
7.d. Expose new or existing structures and/or infrastructure (e.g., leach fields) to accelerated coastal cliff/bluff erosion due to rising sea levels?		X		
Discussion: The discussion in Section 6.a.v. acknowledges the conditions of the project parcel and surrounding area and potential impacts related to coastal bluff erosion. The Michelucci report and subsequent updated reports concluded that the most conservative average retreat rate of the				

adjacent coastal bluffs is 0.73 feet per year, resulting in 62 years before the bluffs reach the closest point of the proposed residence. Additional calculations, which Michelucci believes is more accurate, determined the average retreat rate to range from 0.40 to 0.78 feet per year, concluding that the ocean bluffs would reach the western property line, western building setback line, and closest point of the proposed residence in approximately 38, 76, and 99 years, respectively. Michelucci notes that these calculated rates of bluff retreat are based on an assumed constant retreat rate as ocean bluff failures occur episodically and not uniformly through time. Therefore, the measured/calculated rates of retreat must be assumed to be indicative and not strictly representative of long-term rates. Conclusively, Michelucci stated that the proposed project can be developed as planned provided that their recommendations are implemented. Mitigation Measure 12 in Section 6.a.i. was provided to ensure that these recommendations are implemented to ensure that impacts are less than significant.

Furthermore, the EECAP dedicates substantive discussion around the issues of rising sea levels. While the project parcel is located on the flat top of a coastal bluff, at an elevation of approximately 50 feet above sea level, projected rising sea levels would be expected to contribute to greater erosion to the non-hardened shoreline cliffs from higher wave activity. With the LCP's requirement that the integrity along coastal bluff sites meet a minimum of 50 years, the EECAP projects rising sea levels to increase (based on estimates from 2050 to 2100) an average of about 27 inches along the County's coastline. The project includes no leach fields or other new infrastructure within this area. Therefore, the projected sea rise and associated erosion occurring to the bluff face should not impact the project development in the cited 50-year time frame. Based on these findings and with Mitigation Measures 1, 14, and 15, potential impacts will be less than significant.

Source: Project Plans, Project Location, San Mateo County Hazards Maps, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016), Michelucci & Associates, Inc. Geotechnical and Geologic Investigation Update (dated August 29, 2017), Michelucci & Associates, Inc. Response to Steven R. King, Ph.D, October 22, 2017 Memo (dated November 22, 2017), 2013 County Energy Efficiency Climate Action Plan, County Local Coastal Program.

7.e. Expose people or structures to a significant risk of loss, injury or death involving sea level rise?

X

Discussion: Pursuant to the discussion in Section 7.d., the projected sea rise along this portion of the County coastline will not pose a significant risk to the proposed residence and people (i.e., future residents and their guests) to a significant risk of loss, injury, or death that involves sea level rise. With the mitigation measures cited in that discussion, the project impact will be less than significant.

Source: Project Plans, Project Location, 2013 County Energy Efficiency Climate Action Plan.

7.f. Place structures within an anticipated 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

X

Discussion: The project parcel is not located in an anticipated 100-year flood hazard area as mapped by the Federal Emergency Management Agency (FEMA). The project parcel is located in FEMA Flood Zone X, which is considered a minimal flood hazard (Panel No. 06081C0119F, effective August 2 2017). FEMA Flood Zone X areas have a 0.2% annual chance of flooding, with areas with 1% annual chance of flooding with average depths of less than 1 foot. The FEMA flood

Designation for the coast, just beyond the coastal bluffs, is Flood Zone VE which covers coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones. The Zone VE designated area west of the project parcel has a base flood elevation of 29 feet. The project parcel is at an elevation of approximately 50 feet above the mean sea level, with the closest point of the proposed residence set back approximately 70 feet from the bluff edge. Therefore, the project impact would be less than significant.

Source: Project Plans, Project Location, County GIS Maps, Federal Emergency Management Agency Flood Insurance Rate Map 06081C0119F, effective August 2 2017.

7.g. Place within an anticipated 100-year flood hazard area structures that would impede or redirect flood flows?

X

Discussion: The project parcel is not located in an anticipated 100-year flood hazard area as mapped by FEMA. Pursuant to the discussion in Section 7.f. and given the topography of the project parcel and surrounding area, the project poses no impact.

Source: Project Location, County GIS Maps, Federal Emergency Management Agency Flood Insurance Rate Map 06081C0119F, effective August 2 2017.

8. HAZARDS AND HAZARDOUS MATERIALS. Would the project:

	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
8.a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (e.g., pesticides, herbicides, other toxic substances, or radioactive material)?				X

Discussion: The project does not involve the use, transport, or disposal of hazardous materials.

Source: Project Plans.

8.b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

X

Discussion: The use of hazardous materials is not proposed for this project.

Source: Project Plans.

8.c.	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
Discussion: The emission of hazardous materials, substances, or waste is not proposed for this project. The project parcel is also not located within one-quarter mile of an existing or proposed school. Source: Project Plans, Project Location.					
8.d.	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
Discussion: The project site is not included on a list of hazardous materials compiled pursuant to Government Code Section 65962.5 and therefore would not result in the creation of a significant hazard to the public or the environment. Source: Project Location, California Department of Toxic Substances Control.					
8.e.	For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area?				X
Discussion: The project parcel is located approximately 2,500 feet (0.47 miles) northwest of the northerly boundary of the Half Moon Bay Airport, a public airport operated by the County Department of Public Works. Development within certain proximities of the airport are regulated by applicable policies and requirements of the Final Half Moon Bay Airport Land Use Compatibility Plan (ALUCP), as adopted by the City/County Association of Governments (C/CAG) on October 9, 2014. The overall objective of the ALUCP safety compatibility guidelines is to minimize the risks associated with potential aircraft accidents for people and property on the ground in the event of an aircraft accident near an airport and to enhance the chances of survival of the occupants of an aircraft involved in an accident that occurs beyond the runway environment. The ALUCP has safety zone land use compatibility standards that restrict land use development that could pose particular hazards to the public or to vulnerable populations in case of an aircraft accident. The project site is located in the Airport Influence Area (Runway Safety Zone 2), the Inner Approach/Departure Zone (IADZ), where accident risk level is considered to be high encompassing approximately 10 percent of general aviation aircraft accidents. The IADZ Zone prohibits residential land uses except for very low residential and infill in developed areas. Pursuant to Section 4.2.2.3 of the ALUCP, the project parcel meets all the criteria for infill development, thus allowing the residential use to occur even if the land use is prohibited in the IADZ Zone. Additionally, the proposed residential use complies with the other IADZ Zone development conditions in the Safety Criteria Matrix of the ALUCP such as locating the structure a maximum distance from extended runway centerline and maintaining a less than 35-ft. building height. The proposed residence will					

have a maximum height of 24'-3 7/8" and be located 21 feet from the front property line, the northern most location, while still being in compliance with the zoning setbacks and setbacks for the scenic easements.

Based on the discussion above, staff has determined that the proposed project complies with the safety compatibility criteria and poses no impact.

Source: Project Plans, Project Location, 2014 Final Half Moon Bay Airport Land Use Compatibility Plan.

8.f. For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area?

X

Discussion: Pursuant to the discussion in Section 8.e., the proposed project poses no impact.

Source: Project Plans, Project Location, 2014 Final Half Moon Bay Airport Land Use Compatibility Plan.

8.g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

X

Discussion: The proposed project will be located on a privately-owned parcel where all improvements will be located within the parcel boundaries. The proposed residence will have direct access from Arbor Lane, a public maintained street. The proposed project would not impede, change, or close any roadways that could be used for emergency purposes. All roads would remain unchanged. Therefore, the project poses no impact.

Source: Project Plans, Project Location, County GIS Maps.

8.h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

X

Discussion: The project site is not located within a Fire Hazard Severity Zone (State Responsibility Area). The project was reviewed by the Coastsides Fire Protection District (CFPD) and received conditional approval subject to compliance with the California Building Code for hard wired smoke detectors, an automatic fire sprinkler system, and ignition resistant construction and materials, among other fire prevention requirements. No further mitigation, beyond compliance with the standards and requirements of the CFPD are necessary. Thus, the project poses no impact.

Source: Project Location, California State Fire Severity Zones Maps, Coastsides Fire Protection District.

8.i.	Place housing within an existing 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
Discussion: The project parcel is not located in such an area. Source: Project Plans, County GIS Maps, Federal Emergency Management Agency Flood Insurance Rate Map 06081C0119F, effective August 2 2017.					
8.j.	Place within an existing 100-year flood hazard area structures that would impede or redirect flood flows?				X
Discussion: As discussed in Section 7.f., the project site is located in Flood Zone X, an area of minimal flood hazard. The project would not place structures within a 100-year flood hazard area as the project site is not located within a flood hazard zone that will be inundated by a 100-year flood. Source: Project Plans, County GIS Maps, Federal Emergency Management Agency Flood Insurance Rate Map 06081C0119F, effective August 2 2017.					
8.k.	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
Discussion: In addition to the discussion Section 8.j., no dam or levee is located in close proximity to the project parcel, therefore there is no risk of flooding onto this parcel due to failure of a dam or levee. Source: Project Plans, Project Location, County GIS Maps, San Mateo County Hazards Maps.					
8.l.	Inundation by seiche, tsunami, or mudflow?			X	
Discussion: The project parcel is not located within a San Mateo County General Plan tsunami and seiche inundation area. According to the California Office of Emergency Services Tsunami Inundation Map for Emergency Planning, the southwestern corner of the project parcel is located within a tsunami inundation area. However, this inundation map was prepared to assist cities and counties in identifying their tsunami hazard areas and only for local jurisdictional, coastal evacuation planning uses only. The inundation map represents the maximum considered tsunami run up from a number of extreme, yet realistic, tsunami sources (i.e., "worst-case" scenarios) and therefore cannot be used for making land-use decisions. The inundation map also does not reflect the abrupt shift in elevation at the top of the coastal bluff where the proposed residence will be located, approximately 50 feet above sea level. There are also no recorded tsunamis in the Half Moon Bay area since 1812 with a height greater than 14 feet. Further, in an email correspondence dated April 20, 2018, the project geologist, Dexter F. Hoexter, from Michelucci, provided a response stating the only scenario that may cause inundation would be if the proposed residence blocks a narrow flow channel which would result in adjacent tsunami flow being forced around the obstruction at a higher elevation than if the channel was not blocked. Hoexter stated that since the proposed residence will sit atop the coastal bluff on a flat, wide area, any postulated tsunami flow at this location would be minimal in volume and flow around the building. The height of the flow would not significantly increase due to					

the proposed residence and there will be ample space available to accommodate the flow around the structure. Based on these findings, the project poses a less than significant impact.

Source: Project Plans, Project Location, San Mateo County General Plan Natural Hazards Map, California Emergency Management Agency Tsunami Inundation Map for Emergency Planning (dated June 15, 2009), 1812-2012 California Department of Conservation Historic Tsunamis in California Chart, Email Correspondence from David F. Hoexter of Michelucci & Associates, Inc. (dated April 20, 2018).

9. HYDROLOGY AND WATER QUALITY. Would the project:

	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
9.a. Violate any water quality standards or waste discharge requirements (consider water quality parameters such as temperature, dissolved oxygen, turbidity and other typical stormwater pollutants (e.g., heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash))?			X	
Discussion: The proposed project has the potential to generate polluted stormwater runoff during site grading and construction-related activities. The permanent project will be required to comply with the County's Drainage Policy requiring post-construction stormwater flows to be at, or below, pre-construction flow rates. A drainage report was prepared by Berry & Associates, dated August 24, 2017, detailing the proposed drainage system. The proposed system will accommodate the proposed residence, driveway, and hardscape features, and ensure pre-construction runoff levels are maintained. The proposed tight-line system will collect roof and surrounding hardscape runoff which will connect to an on-site retention facility with an energy reduction box and cleanout and overflow pipe. The drainage report states that the system was designed to capture and store the increased runoff from the residence and allow infiltration into the subgrade. In the event of intense runoff (i.e., greater than a 100-year storm), the overflow will bubble out and dissipate within the flat area at the west side of the project site. The runoff will be further reduced with a pervious driveway that will allow direct infiltration into the soil. The proposed project, including the discussed drainage report and plans, were reviewed and approved by the Department of Public Works. Based on these findings, the project impact will be less than significant. Source: Project Plans, Project Location, County GIS Maps, Berry & Associates Drainage Report (dated August 24, 2017).				
9.b. Significantly deplete groundwater supplies or interfere significantly with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a			X	

level which would not support existing land uses or planned uses for which permits have been granted)?				
Discussion: In order to evaluate the geotechnical engineering characteristics of the soil layers underlying the project site, the Michelucci report (discussed in Section 6.a.i.) discussed the three borings drilled on the project parcel. Groundwater was encountered in Boring 1 at about 40.5 feet below grade and in Boring 2 at about 49 feet below grade at the time of the drilling. Michelucci also reviewed the available data on the previously excavated well and found that stabilized water in the well was measured at 38 feet after it was drilled. Michelucci notes that water levels tend to fluctuate seasonally and could rise to shallowed depths in the future. Although groundwater was encountered, the proposed project is not expected to deplete any groundwater supplies or interfere with groundwater recharge as the proposed residence will receive water and sanitary sewer services from the Montara Water and Sanitary District. The existing well will also be capped and formally abandoned as required by the County Environmental Health Division. Thus, the project will have a less than significant impact. Source: Project Plans, Project Location, County GIS Maps, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016).				
9.c. Significantly alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in significant erosion or siltation on- or off-site?		X		
Discussion: The proposed project does not involve the alteration of the course of a stream or river. Dean Creek, an intermittent creek, is located at the bottom of a steep gully south of the project site. Water flows through Dean Creek from the east and deposits into Kelp Cove in the Fitzgerald Marine Reserve. The project parcel is at an elevation of approximately 50 feet above sea level while the survey flow line of Dean Creek is at 22 feet above sea level at the toe of the creek and 12 feet above sea level at the toe of the cliff. Furthermore, the proposed development on the project parcel will include drainage features that have been approved by the Department of Public Works. With Mitigation Measures 1, 2, and 15 to address potential impacts during construction activities, the project will have a less than significant impact. Source: Project Plans, Project Location, County GIS Maps, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015), Department of Public Works.				
9.d. Significantly alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or significantly increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?		X		
Discussion: Pursuant to the discussion in Section 9.c. and the cited mitigation measure, the proposed project will have a less than significant impact. Source: Project Plans, Project Location, County GIS Maps, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015), Department of Public Works.				

9.e.	Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide significant additional sources of polluted runoff?			X	
Discussion: Pursuant to the discussion in Section 9.a., the proposed project will have a less than significant impact. Source: Project Plans, Project Location, County GIS Maps, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015), Department of Public Works.					
9.f.	Significantly degrade surface or ground-water water quality?			X	
Discussion: Pursuant to Section 9.b., no degradation of surface or groundwater water quality is expected. Thus, the project poses a less than significant impact. Source: Project Plans, Project Location, County GIS Maps, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016).					
9.g.	Result in increased impervious surfaces and associated increased runoff?		X		
Discussion: Pursuant to the discussion in Section 9.c. and the cited mitigation measure, the proposed project will have a less than significant impact. Source: Project Plans, Project Location, County GIS Maps, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015), Department of Public Works.					

10. LAND USE AND PLANNING. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
10.a.	Physically divide an established community?			X
Discussion: The proposed single-family residence will infill within an urban area surrounded by existing single-family residential uses. The project parcel is the last parcel left to be developed on Arbor Lane. The project does not include a proposal to divide lands or include development that would result in the division of an established community. Source: Project Plans.				

10.b. Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X
Discussion: The proposed project has been reviewed for conformance and is not in conflict with any applicable policies of the County Local Coastal Program and applicable R-1, S-17, and design review zoning regulations as discussed in Section 1.f. With the project proposed pursuant to the project plans recommended for approval by the CDRC, the project poses no impact. Source: Project Plans, County General Plan, County Midcoast DR Standards, County Zoning Regulations.				
10.c. Conflict with any applicable habitat conservation plan or natural community conservation plan?		X		
Discussion: The project site is not located in an area with a habitat conservation or natural community conservation plan. As discussed in Section 4.f., the project site is located within the Fitzgerald Marine Reserve. However, the project, as proposed with the mitigation measures in Sections 4.a., 4.c., and 4.d., will not adversely affect the Reserve and therefore the impact will be less than significant. Source: Project Plans, Project Location, 2002 Final Fitzgerald Marine Reserve Master Plan.				
10.d. Result in the congregating of more than 50 people on a regular basis?				X
Discussion: With the project comprised of the construction of one single-family residence, it is not expected that their occupancy capacity would result in the congregating of over 50 people on a regular basis. Therefore, the project poses no impact. Source: Project Plans, Project Location.				
10.e. Result in the introduction of activities not currently found within the community?				X
Discussion: The proposed residence will not result in the introduction of activities not already found within the community. The project site is surrounded by similar single-family residential development to the north, east, and south. Therefore, the project poses no such impact. Source: Project Plans, Project Location, County Zoning Regulations, County Midcoast DR Standards, Coastsides Design Review Committee Recommendation Letter (dated November 9, 2017).				

10.f. Serve to encourage off-site development of presently undeveloped areas or increase development intensity of already developed areas (examples include the introduction of new or expanded public utilities, new industry, commercial facilities or recreation activities)?				X
Discussion: The proposed project is to construct a new single-family residence completely within the parcel boundaries. The proposed residence will be infilling into an urban area surrounded by existing residential uses. Furthermore, the project parcel is the last parcel on Arbor Lane available to be developed as the adjacent vacant parcel is owned by the neighborhood's homeowner's association and was deemed "not a building site" in the 1972 Cypress Cliffs Subdivision, the subdivision that created the Arbor Lane neighborhood including the subject parcel. The proposed project will not serve to encourage off-site development of undeveloped areas or increase the development intensity of surrounding developed areas. Therefore, the project poses no impact. Source: Project Plans, Project Location, County GIS Maps, 1972 Cypress Cliffs Subdivision Map.				
10.g. Create a significant new demand for housing?				X
Discussion: The proposed project does not create any new demand for housing and, thus, poses no impact. Source: Project Plans, Project Location.				

11. MINERAL RESOURCES. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
11.a. Result in the loss of availability of a known mineral resource that would be of value to the region or the residents of the State?				X
Discussion: The proposed project neither involves nor results in any extraction or loss of mineral resources. Therefore, the project poses no impact. Source: Project Plans.				

11.b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X
Discussion: There are no known mineral resources on the project parcel, therefore, the proposed project will not result in the loss of availability of a locally important mineral resource recovery site as delineated on a local general plan, specific plan, or other land use plan. Source: Project Plans.				

12. NOISE. Would the project result in:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
12.a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
Discussion: The proposed project would not produce any long-term audible noise. However, the project will generate short-term noise associated with grading and construction activities. The short-term noise during grading and construction activities will be temporary, where volume and hours are regulated by Section 4.88.360 (<i>Exemptions</i>) of the San Mateo County Ordinance Code for Noise Control. While the proposed project is expected to produce minimal noise, the following mitigation measure is recommended to limit any potential impacts to a less than significant level: Mitigation Measure 16: Noise sources associated with demolition, construction, repair, remodeling, or grading of any real property shall be limited to the hours from 7:00 a.m. to 6:00 p.m., weekdays and 9:00 a.m. to 5:00 p.m., Saturdays. Said activities are prohibited on Sundays, Thanksgiving, and Christmas (San Mateo Ordinance Code Section 4.88.360). Noise levels produced by construction activities shall not exceed the 80-dBA level at any one moment. Source: Project Plans, Project Location, San Mateo County Ordinance.				
12.b. Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?		X		
Discussion: Exposure of persons to or generation of excessive ground-borne vibration or noise levels is expected during construction activities. Mitigation Measure 16 in Section 12.a. is provided to ensure that the impact is less than significant. Source: Project Plans, Project Location, San Mateo County Ordinance.				

12.c. A significant permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
Discussion: A temporary increase in ambient noise levels during construction activities is expected. Otherwise, increased permanent ambient noise levels will be minimal as it would be limited to the typical noise generated from a single-family residence. Therefore, the project poses a less than significant impact. Source: Project Plans, Project Location.				
12.d. A significant temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
Discussion: Pursuant to the discussion in Section 12.c., the project poses a less than significant impact. Source: Project Plans, Project Location.				
12.e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, exposure to people residing or working in the project area to excessive noise levels?			X	
Discussion: The project parcel is located approximately 0.47 miles northwest of the northerly boundary of the Half Moon Bay Airport, a public airport operated by the County Department of Public Works. The project parcel is not located within the airport's noise exposure contours designated as "Extremely noise-sensitive areas," an area where the airport-generated noise levels are less than 60 CNEL (Community Noise Equivalent Level; a weighted average of noise level over time). Thus, people residing or working in the project area will not be exposed to excessive noise levels. Therefore, the project poses a less than significant impact. Source: Project Plans, Project Location, 2014 Final Half Moon Bay Airport Land Use Compatibility Plan.				
12.f. For a project within the vicinity of a private airstrip, exposure to people residing or working in the project area to excessive noise levels?				X
Discussion: As discussed in Sections 8.e. and 12.e., the project parcel is located within the vicinity of the Half Moon Bay Airport, a public-operated airport. In addition, there are no known privately owned or operated airstrips within close proximity to the project site. Source: Project Plans, Project Location, 2014 Final Half Moon Bay Airport Land Use Compatibility Plan.				

13. POPULATION AND HOUSING. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
13.a. Induce significant population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
Discussion: The improvements associated with the proposed project are completely within the project parcel's boundaries and are only sufficient to serve the proposed single-family residence. The additional population of the future occupants of the proposed residence will not be significant, nor would the proposed development induce any significant population growth or necessitate any additional or expanded roads or other infrastructure. Source: Project Plans, Project Location.				
13.b. Displace existing housing (including low- or moderate-income housing), in an area that is substantially deficient in housing, necessitating the construction of replacement housing elsewhere?				X
Discussion: The proposed residence will be located on an undeveloped parcel, therefore, no existing housing will be displaced. Additionally, the Midcoast area is not an area that has been designated as substantially deficient in housing. Therefore, the project poses no impact. Source: Project Plans, Project Location, County General Plan.				

14. PUBLIC SERVICES. Would the project result in significant adverse physical impacts associated with the provision of new or physically altered government facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
14.a. Fire protection?				X
14.b. Police protection?				X
14.c. Schools?				X
14.d. Parks?				X
14.e. Other public facilities or utilities (e.g.,				X

hospitals, or electrical/natural gas supply systems)?				
Discussion: The proposed project is to construct a single-family residence in an area characterized by other single-family residential uses. The proposed project does not involve and is not associated with the provision of new or physically altered government facilities, nor will it generate a need for an increase in any such facilities. The project will not disrupt acceptable service ratios, response times or performance objectives of fire (Coastside Fire Protection District has reviewed the plans), police, schools, parks, or any other public facilities or energy supply systems. Therefore, the project poses no impact. Source: Project Plans, Project Location, Coastside Fire Protection District.				

15. RECREATION. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
15.a. Increase the use of existing neighborhood or regional parks or other recreational facilities such that significant physical deterioration of the facility would occur or be accelerated?			X	
Discussion: The proposed single-family residence includes four bedrooms and four bathrooms, expected to serve the future occupants of the residence and their visitors. The impacts of this proposed project on the increase of use of neighborhood or regional parks or other recreational facilities would be less than significant, nor is significant physical deterioration of any such facilities expected to occur or be accelerated. Source: Project Plans, Project Location.				
15.b. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X
Discussion: The project does not include the construction or expansion of recreational facilities. Source: Project Plans.				

16. TRANSPORTATION/TRAFFIC. Would the project:				
	Potentially Significant Impacts	Significant Unless Mitigated	Less Than Significant Impact	No Impact
16.a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?			X	
Discussion: As discussed in previous sections, all proposed development will occur completely on the subject privately owned parcel. The proposed development will provide compliant standard and emergency access to the project parcel. Policy 2.52 (<i>Traffic Mitigation for all Development in the Urban Midcoast</i>) of the County LCP exempts the development of single-family dwellings from the development and implementation of a traffic impact analysis and mitigation plan. The future trips (comprised of both owners of and guests/visitors to) generated by a single-family residence will not introduce any significant increase in vehicles on affected streets (i.e., Arbor Lane, Wienke Way, Cabrillo Highway) and, thus, will pose no significant safety impact to other vehicles, pedestrians, or bicycles. Access from Arbor Lane has been reviewed by both the County Department of Public Works and the Coastside Fire Protection District, who have concluded that such access complies with their respective policies and requirements. Therefore, the project poses a less than significant impact. Source: Project Plans, Project Location, County Department of Public Works, Coastside Fire Protection District, County Local Coastal Program.				
16.b. Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways?			X	
Discussion: Pursuant to the discussion in Section 16.a., the project poses a less than significant impact. Source: Project Plans, Project Location, County Local Coastal Program.				

16.c.	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in significant safety risks?				X
Discussion: The project does not include any element which would result in changes to air traffic patterns. Source: Project Plans, Project Location.					
16.d.	Significantly increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
Discussion: The proposed project does not include any incompatible uses or impacts related to a design feature. A private driveway will be installed and provide vehicular access from Arbor Lane to the proposed residence. Source: Project Plans, Project Location.					
16.e.	Result in inadequate emergency access?				X
Discussion: Upon review of the proposed project, the Coastsides Fire Protection District has conditionally approved the proposed access to the residence including adequate emergency access. Thus, the project poses no impact. Source: Project Plans, Coastsides Fire Protection District.					
16.f.	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?			X	
Discussion: Pursuant to the discussion in Section 16.a., the project poses a less than significant impact. Source: Project Plans, Project Location, County Local Coastal Program.					
16.g.	Cause noticeable increase in pedestrian traffic or a change in pedestrian patterns?			X	
Discussion: The project will not cause a significant increase in pedestrian traffic, nor will it generally change pedestrian patterns around the project site. Therefore, the project poses a less than significant impact. Source: Project Plans, Project Location.					

16.h. Result in inadequate parking capacity?				X
Discussion: Pursuant to Section 6119 (<i>Parking Spaces Required</i>) of the County Zoning Regulations, two covered parking spaces are required for dwelling units having two or more bedrooms. The proposed four-bedroom residence will include an attached two-car garage. Two uncovered tandem parking spaces are also available in the proposed driveway. The proposed project has compliant parking and thus poses no impact. Source: Project Plans, County Zoning Regulations.				

17. TRIBAL CULTURAL RESOURCES. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
17.a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)				X
Discussion: The project site is not listed or eligible for listing in the California Register of Historical Resources. Furthermore, the project is not listed in a local register of historical resources, pursuant to any local ordinance or resolution as defined in Public Resources Code Section 5020.1(k). Source: Project Location, California Register of Historical Resources, County General Plan.				

ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Subdivision (c) of Public Resources Code Section 5024.1. (In applying the criteria set forth in Subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.)		X		
Discussion: The project is not subject to Assembly Bill 52 for California Native American tribal consultation requirements, as no traditionally or culturally affiliated tribe has requested, in writing, to the County to be informed of proposed projects in the geographic project area. However, a "Sacred Lands File and Native American Contacts List Request" was sent to the Native American Heritage Council (NAHC), but as of the date of preparation of this document, no response has been received. Therefore, while the project is not expected to cause a substantial adverse change to any potential tribal cultural resources, the following mitigation measures are recommended to minimize any potential significant impacts to unknown tribal cultural resources: Mitigation Measure 17: Should any traditionally or culturally affiliated Native American tribe respond to the County's issued notification for consultation, such process shall be completed and any resulting agreed upon measures for avoidance and preservation of identified resources be taken prior to implementation of the project. Mitigation Measure 18: In the event that tribal cultural resources are inadvertently discovered during project implementation, all work shall stop until a qualified professional can evaluate the find and recommend appropriate measures to avoid and preserve the resource in place, or minimize adverse impacts to the resource, and those measures shall be approved by the Current Planning Section prior to implementation and continuing any work associated with the project. Mitigation Measure 19: Any inadvertently discovered tribal cultural resources shall be treated with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, protecting the cultural character and integrity of the resource, protecting the traditional use of the resource, and protecting the confidentiality of the resource. Source: Project Plans, Project Location, Native American Heritage Commission, State Assembly Bill 52.				

18. UTILITIES AND SERVICE SYSTEMS. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
18.a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
Discussion: The proposed residence will connect to and receive sewage services from the Montara Water and Sanitary District. The proposed project does not involve or require any water or wastewater treatment facilities that would exceed any requirements of the Regional Water Quality Control Board. Therefore, the project poses no impact. Source: Project Plans, Project Location, Montara Water and Sanitary District.				
18.b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
Discussion: Pursuant to the discussion in Section 18.a., the project poses no impact. Source: Project Plans, Project Location, Montara Water and Sanitary District.				
18.c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?		X		
Discussion: As discussed in Section 9.a., the proposed project has the potential to generate polluted stormwater runoff during site grading and construction-related activities, and the permanent project will be required to comply with the County's Drainage Policy requiring post-construction stormwater flows to be at, or below, pre-construction flow rates. The proposed drainage system design, reviewed and approved by the Department of Public Works, will accommodate the proposed residence, driveway, and hardscape features, and ensure pre-construction runoff levels are maintained. Based on these findings and with the Mitigation Measures 1, 2, and 15, the project impact is expected to be less than significant. Source: Project Plans, Project Location, County GIS Maps, Berry & Associates Drainage Report (dated August 24, 2017), Department of Public Works.				

18.d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
Discussion: The proposed residence will have adequate water service connections from the Montara Water and Sanitary District. Therefore, the project poses no impact. Source: Project Plans, Project Location, Montara Water and Sanitary District.				
18.e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
Discussion: The Montara Water and Sanitary District has indicated that they have adequate capacity to serve the project's sanitary sewerage demands. Therefore, the project poses no impact. Source: Project Plans, Project Location, Montara Water and Sanitary District.				
18.f. Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
Discussion: The construction of the proposed residence will generate some solid waste, both during construction and after completion (on an ongoing basis typical for that generated by residential uses). Similar to all other properties in the Midcoast area, the residence will receive municipal trash and recycling pick-up service by Recology. The County's local landfill facility is the Corinda Los Trancos (Ox Mountain) Landfill, located at 12310 San Mateo Road (State Highway 92), a few miles east of Half Moon Bay. This landfill facility has permitted capacity/service life until 2034. Therefore, the project impact is less than significant. Source: San Mateo County Environmental Health Division.				
18.g. Comply with Federal, State, and local statutes and regulations related to solid waste?			X	
Discussion: Solid waste generated by a new single-family residence is expected to be minimal. The project site will receive solid waste service by Recology. The landfill cited in Section 18.f. is licensed and operates pursuant to all Federal, State and local statutes and regulations as overseen by the San Mateo County Health System's Environmental Health Division. Therefore, the project impact will be less than significant. Source: San Mateo County Environmental Health Division.				

18.h. Be sited, oriented, and/or designed to minimize energy consumption, including transportation energy; incorporate water conservation and solid waste reduction measures; and incorporate solar or other alternative energy sources?			X	
Discussion: The proposed residence will utilize contemporary strategies for incorporating passive solar such as large south facing windows to provide passive solar heating within the house. The proposed two-car attached garage provides vehicular access directly onto Arbor Lane. Further, the proposed residence is required to comply with the California Building Code where building materials must meet minimum insulation and energy conservation requirements, and water conservation fixtures are required. Lastly, as discussed in Section 18.g., solid waste generation is expected to be minimal. Based on these findings, the project poses a less than significant impact. Source: Project Plans.				
18.i. Generate any demands that will cause a public facility or utility to reach or exceed its capacity?				X
Discussion: Pursuant to the discussions throughout Section 18., the proposed project will not cause a public facility or utility to reach or exceed its capacity. Therefore, the project poses no impact. Source: Project Plans, Project Location, San Mateo County Environmental Health Division, Montara Water and Sanitary District.				

19. MANDATORY FINDINGS OF SIGNIFICANCE.				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
19.a. Does the project have the potential to degrade the quality of the environment, significantly reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		

Discussion: The project, as proposed with all the recommended mitigation measures discussed in the previous sections, will ensure that potential impacts to special-status plant and wildlife species with the potential to occur within the project site and surrounding area, as well as all sensitive habitats including Dean Creek and the coastal bluffs, are less than significant.

Source: All Applicable Sources Previously Cited In This Document.

19.b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

X

Discussion: Based on the discussions in the previous sections where the project impact was determined to be less than significant or required mitigation measures to ensure a less than significant impact, the proposed project would not have impacts that are cumulatively considerable. This project will have a less than significant cumulative impact upon the environment and no evidence has been found that the project would result in broader regional impacts. There are also no known approved projects or future projects expected for the project parcel. Conclusively, this project does not introduce any significant impacts that cannot be avoided through mitigation.

Source: All Applicable Sources Previously Cited In This Document.

19.c. Does the project have environmental effects which will cause significant adverse effects on human beings, either directly or indirectly?

X

Discussion: As discussed in the previous sections, the proposed project is to construct a new single-family residence. Based on the discussions in the previous sections where the project impact was determined to be less than significant or required mitigation measures to ensure a less than significant impact, the proposed project would not cause significant adverse effects on human beings, either directly or indirectly.

Source: All Applicable Sources Previously Cited In This Document.

RESPONSIBLE AGENCIES. Check what agency has permit authority or other approval for the project.

AGENCY	YES	NO	TYPE OF APPROVAL
U.S. Army Corps of Engineers (CE)		X	
State Water Resources Control Board		X	
Regional Water Quality Control Board		X	
State Department of Public Health		X	

AGENCY	YES	NO	TYPE OF APPROVAL
San Francisco Bay Conservation and Development Commission (BCDC)		X	
U.S. Environmental Protection Agency (EPA)		X	
County Airport Land Use Commission (ALUC)		X	
Caltrans		X	
Bay Area Air Quality Management District		X	
U.S. Fish and Wildlife Service		X	
Coastal Commission		X	
City		X	
Sewer/Water District:		X	
Other: California Coastal Commission	X		Appeals jurisdiction

MITIGATION MEASURES		
	<u>Yes</u>	<u>No</u>
Mitigation measures have been proposed in project application.	X	
Other mitigation measures are needed.		X
The following measures are included in the project plans or proposals pursuant to Section 15070(b)(1) of the State CEQA Guidelines: Mitigation Measure 1: The applicant shall submit an Air Quality Best Management Practices Plan to the Planning and Building Department prior to the issuance of any grading permit "hard card" or building permit that, at a minimum, includes the "Basic Construction Mitigation Measures" as listed in Table 8-1 of the BAAQMD California Environmental Quality Act (CEQA) Guidelines (May 2011). The following Bay Area Air Quality Management District Best Management Practices for mitigating construction-related criteria air pollutants and precursors shall be implemented prior to beginning any grading and/or construction activities and shall be maintained for the duration of the project grading and/or construction activities: - All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. - All haul trucks transporting soil, sand, or other loose material off-site shall be covered. - All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. - All vehicle speeds on unpaved roads shall be limited to 15 miles per hour. - Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485, of California Code of Regulations). Clear signage shall be		

provided for construction workers at all access points.

- f. Roadways and building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- g. Idling times shall be minimized either by shutting equipment or vehicles off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485, of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- h. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications.
- i. Minimize the idling time of diesel powered construction equipment to two minutes.
- j. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure 2: The applicant shall submit a dust control plan to the Planning Department for review and approval prior to the issuance of a building permit for the project. The approved plan shall be implemented for the duration of any grading, demolition, and construction activities that generate dust and other airborne particles. The plan shall include the following control measures:

- a. Water all active construction areas at least twice daily.
- b. Water or cover stockpiles of debris, soil, sand, or other materials that can be blown by the wind.
- c. Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least 2 feet of freeboard.
- d. Apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking, and staging areas at the construction sites. Also, hydroseed or apply non-toxic soil stabilizers to inactive construction areas.
- e. Sweep daily (preferably with water sweepers) all paved access roads, parking, and staging areas at the construction sites.
- f. Sweep adjacent public streets daily (preferably with water sweepers) if visible soil material is carried onto them.
- g. Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).
- h. Limit traffic speeds on unpaved roads within the project parcel to 15 miles per hour (mph).
- i. Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- j. Replant vegetation in disturbed areas as quickly as possible.

Mitigation Measure 3: Within 48 hours prior to the onset of any project-related activities, a qualified biologist should conduct a pre-construction survey of the project area to ensure that no California red-legged frogs or San Francisco garter snakes are present. In addition, immediately prior to vegetation removal or other construction activities, a qualified biologist familiar with the habitat requirements of California red-legged frogs and San Francisco garter snakes shall conduct a pre-construction survey to determine whether any of these species is located within the project area.

Mitigation Measure 4: A minimum 3-ft. high exclusion fence shall be installed around the limits of

construction, including clearing, grading, and staging, unless otherwise directed by San Mateo County, United States Fish and Wildlife Service, or California Department of Fish and Wildlife, to create a barrier to prevent the California red-legged frog and San Francisco garter snake from entering the project site. No polymesh or similar materials shall be used as fencing materials. The fencing should be removed only when all construction equipment is removed from the project site. Fencing shall be inspected and any opening shall be repaired immediately. If openings are found, the project area shall be inspected by a biological monitor to ensure that special-status species have not entered the project area. The designated biological monitor may be a construction team manager or supervisor trained in the identification of special-status species.

Mitigation Measure 5: Vegetation or other materials shall not be stockpiled at the project site as it provides potential hiding areas for California red-legged frogs, San Francisco garter snakes, and other wildlife species. Vegetation shall be placed directly into a disposal container and removed from the construction area, as practicable. If vegetation is stockpiled on the ground, removal shall be conducted under the supervision of a qualified biologist.

Mitigation Measure 6: To avoid, minimize, and mitigate impacts to the California red-legged frogs, San Francisco garter snakes, and their respective habitats, a worker education program and/or education materials prepared by a qualified biologist shall be provided to all workers prior to onset of construction activities.

Mitigation Measure 7: If required by San Mateo County, California Department of Fish and Wildlife, or United States Fish and Wildlife Service, a biological monitor shall inspect the project area prior to the beginning of construction activities to ensure that the California red-legged frogs and San Francisco garter snakes have not entered the project area. The designated biological monitor may be a construction team manager or supervisor trained in the identification of special-status species.

Mitigation Measure 8: Under no circumstances should California red-legged frogs and San Francisco garter snakes be handled, relocated, or otherwise harmed or harassed at any time. San Mateo County, United States Fish and Wildlife Service, and California Department of Fish and Wildlife shall be notified immediately upon discovery of these species in the project site or surrounding area.

Mitigation Measure 9: Prior to the start of vegetation removal, a qualified biologist familiar with the San Francisco dusky-footed woodrat and its habitat requirements shall survey for their nests within or immediately adjacent to the potential habitat (i.e., poison oak scrub).

- a. If no nests are observed, no further mitigation is required.
- b. If nests are observed, but would not be directly impacted by construction activities, a qualified biologist shall establish a 10-ft. buffer around the nests using exclusion fencing to ensure that they are not accidentally destroyed by construction activities. Exclusion fencing shall remain in place until project completion.
- c. If a nest is observed within the vegetation clearing area, a qualified biologist shall disassemble the nest by hand and relocate and reconstruct the nest away from the construction area.

Mitigation Measure 10: If trees are removed or pruned, a qualified biologist shall conduct a pre-construction bat roost survey to determine if bats are present in the trees on or near the project parcel. If bats are detected, suitable measures to avoid and/or exclude bats shall be determined by the California Department of Fish and Wildlife.

Mitigation Measure 11: Where sediment and erosion control materials are installed, repaired, or removed (i.e., wattles, silt fences, etc.), a qualified biologist should check the work area to ensure that sensitive species are not present or entrapped. Polymesh and/or other similar materials should

not be used as these can entrap or snag reptiles, amphibians, or other small animals.

Mitigation Measure 12: If the construction activities coincide with the nesting bird season (February 1 to September 15), pre-construction nesting bird surveys shall be conducted by a California Department of Fish and Wildlife-approved biologist no more than 10 days prior to planned construction activities in order to locate nests within and adjacent to the proposed construction area. For all migratory bird species, the survey will include nesting birds within a 100-ft. radius from the project site.

- a. If no active nests are detected, construction activities may take place as scheduled.
- b. If an active nest is observed, the project shall be modified as necessary to avoid direct take of identified nest, eggs, and/or young. Modifications may include establishment of protective buffer as determined by a qualified biologist. Typical protective buffer zones are 50 feet for passerine nests and 250 feet for raptors. If construction activities are significantly impacted by the buffer zones, California Department of Fish and Wildlife shall be contacted to request a reduced buffer that would still protect nesting birds.

Mitigation Measure 13: In the event that should cultural, paleontological, or archaeological resources be encountered during site grading or other site work, such work shall immediately be halted in the area of discovery and the project sponsor shall immediately notify the Community Development Director of the discovery. The applicant shall be required to retain the services of a qualified archaeologist for the purpose of recording, protecting, or curating the discovery as appropriate. The cost of the qualified archaeologist and of any recording, protecting, or curating shall be borne solely by the project sponsor. The archaeologist shall be required to submit to the Community Development Director for review and approval a report of the findings and methods of curation or protection of the resources. No further grading or site work within the area of discovery shall be allowed until the preceding has occurred. Disposition of Native American remains shall comply with CEQA Guidelines Section 15064.5(e).

Mitigation Measure 14: The design of the proposed development (upon submittal of the building permit) on the subject parcel shall generally follow the recommendations cited in the Geotechnical and Geologic Investigation prepared by Michelucci & Associates, Inc. and its subsequent updates regarding seismic criteria, grading, drilled piers, slab-on grade construction, and surface drainage. Any such changes to the recommendations by the project geotechnical engineer cited in this report and subsequent updates shall be submitted for review and approval by the County's geotechnical engineer.

Mitigation Measure 15: Prior to the issuance of the building permit for the proposed project, the applicant shall submit to the Planning Department and the Department of Public Works, for review and approval, erosion and drainage control plans that show how the transport and discharge of soil and pollutants from and within the project site will be minimized. The plans shall be designed to minimize potential sources of sediment, control the amount of runoff and its ability to carry sediment by diverting incoming flows and impeding internally generated flows, and retain sediment that is picked up on the project site through the use of sediment-capturing devices. The plans shall also limit application, generation, and migration of toxic substances, ensure the proper storage and disposal of toxic materials, and apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface waters. Said plan shall adhere to the San Mateo Countywide Stormwater Pollution Prevention Program "General Construction and Site Supervision Guidelines," including:

- a. Sequence construction to install sediment-capturing devices first, followed by runoff control measures and runoff conveyances. No construction activities shall begin until after all proposed measures are in place.
- b. Minimize the area of bare soil exposed at one time (phased grading).

- c. Clear only areas essential for construction.
- d. Within five (5) days of clearing or inactivity in construction, stabilize bare soils through either non-vegetative Best Management Practices (BMPs), such as mulching, or vegetative erosion control methods, such as seeding. Vegetative erosion control shall be established within two (2) weeks of seeding/planting.
- e. Construction entrances shall be stabilized immediately after grading and frequently maintained to prevent erosion and to control dust.
- f. Control wind-born dust through the installation of wind barriers such as hay bales and/or sprinkling.
- g. Soil and/or other construction-related material stockpiled on-site shall be placed a minimum of 200 feet, or to the extent feasible, from all wetlands and drain courses. Stockpiled soils shall be covered with tarps at all times of the year.
- h. Intercept runoff above disturbed slopes and convey it to a permanent channel or storm drains by using earth dikes, perimeter dikes or swales, or diversions. Use check dams where appropriate.
- i. Provide protection for runoff conveyance outlets by reducing flow velocity and dissipating flow energy.
- j. Use silt fence and/or vegetated filter strips to trap sediment contained in sheet flow. The maximum drainage area to the fence should be 0.5 acres or less per 100 feet of fence. Silt fences shall be inspected regularly and sediment removed when it reaches 1/3 the fence height. Vegetated filter strips should have relatively flat slopes and be vegetated with erosion-resistant species.
- k. Throughout the construction period, the applicant shall conduct regular inspections of the condition and operational status of all structural BMPs required by the approved erosion control plan.
- l. No erosion or sediment control measures will be placed in vegetated areas.
- m. Environmentally-sensitive areas shall be delineated and protected to prevent construction impacts.
- n. Control of fuels and other hazardous materials, spills, and litter during construction.
- o. Preserve existing vegetation whenever feasible.

Mitigation Measure 16: Noise sources associated with demolition, construction, repair, remodeling, or grading of any real property shall be limited to the hours from 7:00 a.m. to 6:00 p.m., weekdays and 9:00 a.m. to 5:00 p.m., Saturdays. Said activities are prohibited on Sundays, Thanksgiving, and Christmas (San Mateo Ordinance Code Section 4.88.360). Noise levels produced by construction activities shall not exceed the 80-dBA level at any one moment.

Mitigation Measure 17: Should any traditionally or culturally affiliated Native American tribe respond to the County's issued notification for consultation, such process shall be completed and any resulting agreed upon measures for avoidance and preservation of identified resources be taken prior to implementation of the project.

Mitigation Measure 18: In the event that tribal cultural resources are inadvertently discovered during project implementation, all work shall stop until a qualified professional can evaluate the find and recommend appropriate measures to avoid and preserve the resource in place, or minimize adverse impacts to the resource, and those measures shall be approved by the Current Planning Section prior to implementation and continuing any work associated with the project.

Mitigation Measure 19: Any inadvertently discovered tribal cultural resources shall be treated with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, protecting the cultural character and integrity of the resource, protecting the traditional use of the resource, and protecting the confidentiality of the resource.

DETERMINATION (to be completed by the Lead Agency).

On the basis of this initial evaluation:

I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Planning Department.

X

I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because of the mitigation measures in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

(Signature)

Project Planner

May 2, 2018

Date

(Title)

CJM:jlh – CJMCC0193_WJH.DOCX

ATTACHMENTS

- A. Location Map
- B. 1972 Cypress Cliffs Subdivision Map
- C. Project Plans
- D. Coastsides Design Review Committee Letter for the November 9, 2017 Meeting
- E. California Coastal Commission Resolution No. 74-270
- F. Natural Resources Conservation Service Web Soil Survey- California Revised Storie Index
- G. Kopitov Environmental LLC Biological Resources Assessment, dated 5/9/15
- H. Coastal Ridge Ecology LLC Update to Biological Resources Assessment, dated October 2, 2017
- I. Coastal Ridge Ecology LLC Response to Comments on Update to Biological Resources Assessment, dated November 3, 2017
- J. San Mateo County General Plan Natural Hazards Map
- K. California Emergency Management Agency Tsunami Inundation Map for Emergency Planning, dated June 15, 2009
- L. 1812-2012 California Department of Conservation Historic Tsunamis in California Chart
- M. Michelucci & Associates, Inc. Geotechnical and Geologic Investigation, dated July 6, 2016
- N. Michelucci & Associates, Inc. Geotechnical and Geologic Investigation Update, dated August 29, 2017
- O. Michelucci & Associates, Inc. Response to Steven R. King, Ph.D, October 22, 2017 Memo, dated November 21, 2017
- P. Email Correspondence from David F. Hoexter of Michelucci & Associates, Inc. (dated April 20, 2018)
- Q. Federal Emergency Management Agency Flood Insurance Rate Map 06081C0119F, effective August 2 2017
- R. Berry & Associates Drainage Report, dated August 24, 2017

****Please Note:*** Some attachments will be missing from printed versions of this document due to size constraints. The complete version of this document can be viewed at the San Mateo County Planning and Building Department office and will be available to view online on the Planning and Building's website at: <https://planning.smcgov.org/ceqa-docs>.

County of San Mateo
Planning and Building Department

INITIAL STUDY
ENVIRONMENTAL EVALUATION CHECKLIST
(To Be Completed by Planning Department)

1. **Project Title:** New Residence at Arbor Lane, Moss Beach
2. **County File Number:** PLN 2016-00444
3. **Lead Agency Name and Address:** County of San Mateo, 455 County Center, 2nd Floor, Redwood City, CA 94063
4. **Contact Person and Phone Number:** Carmelisa Morales, 650/363-1873, cmorales@smcgov.org
5. **Project Location:** Undeveloped Parcel, Arbor Lane, Moss Beach
6. **Assessor's Parcel Number and Size of Parcel:** 037-123-430; 14,320 sq. ft.
7. **Project Sponsor's Name and Address:** Carlos Zubieta, 1725A Abbot Kinney Boulevard, Venice, CA 90291
8. **General Plan Designation:** Medium Density Urban Residential
9. **Zoning:** R-1 Single-Family Residential District / S-17 Combining District / Design Review District / Coastal Development District (R-1/S-17/DR/CD)
10. **Description of the Project:** Construction of a new 3,338 sq. ft. two-story single-family residence with an attached 468 sq. ft. two-car garage on an undeveloped 14,320 sq. ft. parcel. Two significant-sized Monterey cypress trees are proposed for removal. Three hundred sixty-eight (368) cubic yards (c.y.) of grading (186 c.y. of excavation and 192 c.y. of fill) is proposed. A water well is located on the subject property and will be formally abandoned and capped prior to construction of the proposed single-family residence. The parcel is constrained by two scenic easements.
11. **Surrounding Land Uses and Setting:** The undeveloped parcel is zoned R-1/S-17/DR/CD and surrounded by single-family residential development with the same zoning to the north, south, and east. The Pacific Ocean is to the west (approximately 30 feet from the western property line of the parcel) with an undeveloped parcel located between the subject parcel and coastal bluffs. A wooden fence separates the adjacent parcel from the coastal bluffs. Dean Creek borders the parcel to the south with the top of the creek line encroaching up to approximately 50 feet into the southwestern corner of the parcel. A grove of mature Monterey cypress trees are located on the steep canyon upland slope separating the property from Dean Creek. Two Monterey cypress trees are also located in the middle and left side yard of the parcel.

A Coastal Development Permit (CDP) (Case No. CDP 96-0045) was approved in 1997 to drill a domestic water well on the parcel, but failed to produce adequate water supply.

An amendment to the CDP was approved in 1998 to drill two additional test wells in an attempt to establish a single on-site potable domestic water source to serve a future single-family residence. There is currently one water well in the front left yard of the parcel.

12. **Other Public Agencies Whose Approval is Required:** None.
13. **Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, has consultation begun?:** No.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" or "Significant Unless Mitigated" as indicated by the checklist on the following pages.

	Aesthetics		Hazards and Hazardous Materials		Recreation
	Agricultural and Forest Resources	X	Hydrology/Water Quality		Transportation/Traffic
X	Air Quality	X	Land Use/Planning	X	Tribal Cultural Resources
X	Biological Resources		Mineral Resources	X	Utilities/Service Systems
X	Cultural Resources	X	Noise	X	Mandatory Findings of Significance
X	Geology/Soils		Population/Housing		
X	Climate Change		Public Services		

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appro-

appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in 5. below, may be cross-referenced).
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063(c)(3)(D)). In this case, a brief discussion should identify the following:
 - a. Earlier Analysis Used. Identify and state where they are available for review.
 - b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
 - c. Mitigation Measures. For effects that are "Less Than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources. Sources used or individuals contacted should be cited in the discussion.

1. AESTHETICS. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
1.a. Have a significant adverse effect on a scenic vista, views from existing residential areas, public lands, water bodies, or roads?			X	
Discussion: The project parcel is constrained by the following two scenic easements: 1. A scenic easement included as part of the Cypress Cliffs Subdivision (Case No. X6D-448 approved on February 23, 1972 and recorded on May 4, 1972), the subdivision that resulted in the creation of the project parcel, bisects the southern section of the project parcel. The scenic easement requires a 20-ft. setback from the easement's edge and fully covers Lot 11, the adjacent parcel to the west of the project parcel. The subdivision				

map states that the "scenic easement as shown on Lots 11, 12, 13, 14, and 17 shall be kept open and free from buildings or structures of any kind except that sideline fencing may run to top of bank."

2. A 75-ft. wide scenic easement that starts at Wienke Way and runs west through Arbor Lane to the coastal bluffs bisects the northern section of the project parcel. This scenic easement was enacted by the California Coastal Commission (CCC) as part of Resolution No. 74-270 (approved on July 15, 1974 and recorded on November 24, 1975) in association with a Lot Line Adjustment (LLA) (Case No. X6E-122) affecting Lots 16 through 21 to ensure that future development does not intrude onto the scenic easement. Public access was also granted along this scenic easement at Lot 11.

Although the project parcel is not located within a designated State or County Scenic Corridor and is not visible from Highway 1 (Cabrillo Highway), the proposed 24'-3 7/8" high residence will be visible from the Pacific Ocean and bluff-top area to the west, and residential area to the north and east. A grove of mature Monterey cypress trees will partially screen the proposed residence from the residential area south of Dean Creek. The proposed residence may also be visible from residential areas upslope of the property. However, residential development fronting the bluff tops to the north and south are generally closer to the coastal bluffs than the proposed residence.

On November 9, 2017, as proposed and conditioned, the Coastsides Design Review Committee (CDRC) recommended approval of the proposed residence to the San Mateo County (County) Planning Commission (PC), based on the findings that included compliance with all applicable Design Review (DR) standards. Specifically, the CDRC found that the proposed project complies with Section 6565.20(B) (*Neighborhood Definition and Neighborhood Character*) of the Standards for Design for One-Family and Two-Family Residential Development in the Midcoast (Midcoast DR Standards) as the original design presented to the CDRC on July 13, 2017 was revised with the interest of preserving the views and ensuring compatibility with the surrounding neighborhood. The applicant responded to the CDRC's concerns from the July 13, 2017 meeting with improved massing, articulation, colors and materials, and a slightly reduced height. The second story of the proposed residence was reduced and the second story deck was relocated to the back of the property to preserve privacy and minimize visual impacts from many of the neighboring residences. As a result, the CDRC was able to make the findings to recommend approval of the design of the proposed residence as it complies with all applicable DR standards.

With the constraints of the two scenic easements and as demonstrated by the recommendation of approval by the CDRC, the visual impact of the proposed residence will not be significant.

Source: Project Plans, Project Location, County Geographic Information System (GIS) Maps, Field Observations, 1972 Cypress Cliffs Subdivision Map, CDRC Recommendation Letter (for November 9, 2017 meeting), County Midcoast DR Standards, California Coastal Commission Resolution No. 74-270.

1.b.	Significantly damage or destroy scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
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Discussion: The project parcel does not contain and is not located in close proximity to any rock outcroppings or historic buildings within a state scenic highway. Two significant-sized Monterey cypress trees (trees with a diameter at breast height (dbh) of 12 inches or more) are located within the building footprint of the proposed residence and therefore require removal. These trees will be replaced with two Monterey cypress trees (15-gallon size stocks) and be located at the rear of the property to minimize visual impacts for residential areas in the north and east and to create an

opportunity for future vegetative screening of the proposed residence from residential areas south of Dean Creek. Source: Project Plans, Project Location, Field Observations, County GIS Maps, County General Plan Scenic Corridors Map.				
1.c.	Significantly degrade the existing visual character or quality of the site and its surroundings, including significant change in topography or ground surface relief features, and/or development on a ridgeline?			X
Discussion: The proposed project will require 368 c.y. of grading (186 c.y. of excavation and 182 c.y. of fill) to accommodate the proposed residence, landscaping, and drainage features. The proposed grading will not represent a significant change in topography. Additionally, in accordance with the CDRC's recommendation of approval as discussed in Section 1.a. and 1.b., the proposed project will not significantly degrade the existing visual character or quality of the site. Source: Project Plans, Project Location, Field Observations, County GIS Maps, CDRC Recommendation Letter (for November 9, 2017 Meeting), County Zoning Regulations.				
1.d.	Create a new source of significant light or glare that would adversely affect day or nighttime views in the area?			X
Discussion: The project plans recommended for approval by the CDRC include exterior lighting for the proposed residence. The CDRC's recommendation acknowledged the project's compliance with Section 6565.20(E)4 of the Midcoast DR Standards regarding exterior lighting which states: "All exterior, landscape, and site lighting shall be designed and located so that light and glare are directed away from neighbors and confined to the site," "Exterior lighting should be minimized and designed with a specific activity in mind so that outdoor areas will be illuminated no more than is necessary to support the activity designed for that area," and "Minimize light and glare as viewed from scenic corridors and other public view corridors." The proposed locations and design of all such lighting will not create a new source of significant light or glare that would adversely affect day or nighttime views in the area. Source: Project Plans, Project Location, CDRC Recommendation Letter (for November 9, 2017 Meeting), County Midcoast DR Standards.				
1.e.	Be adjacent to a designated Scenic Highway or within a State or County Scenic Corridor?			X
Discussion: The project is not adjacent to a designated State or County Scenic Corridor. The closest County Scenic Corridor is the Cabrillo Highway (Highway 1) County Scenic Corridor which is over 400 feet away. Source: Project Location, County GIS Maps, County General Plan Scenic Corridors Map.				

1.f.	If within a Design Review District, conflict with applicable General Plan or Zoning Ordinance provisions?				X
Discussion: The project parcel is located within a Design Review (DR) District as it is zoned R-1/S-17/DR/CD (R-1 Single-Family Residential District / S-17 Combining District / DR District / Coastal Development District). As discussed in Section 1.a., the CDRC determined that the proposed project is in compliance with all applicable DR standards. The proposed single-family residence is an allowed use in the R-1 Zoning District. The project parcel meets the minimum parcel size and parcel width requirements. The proposed residence will have conforming setbacks (for both the zoning district and scenic easements) and a building height, building floor area, and parcel coverage that are under the maximum allowed. Further, the proposed residence complies with the S-17 Combining District daylight plane requirement. The CD District overlay indicates that the project parcel is located within the Coastal Zone and therefore requires a Coastal Development Permit (CDP) for any proposed development. Approval of a CDP is conditional upon a project's compliance with all applicable San Mateo County Local Coastal Program (County LCP) policies. The proposed project complies with all applicable LCP policies, specifically regarding visual resources which is indicative of the project's recommendation for approval by the CDRC as discussed in Section 1.a. Conclusively, the proposed project is not in conflict with provisions of the R-1 Zoning District, S-17 Combining District, DR District, or CD District. Source: Project Plans, Project Location, CDRC Recommendation Letter (for November 9, 2017 Meeting), County Zoning Regulations, County Midcoast DR Standards, County Local Coastal Program.					
1.g.	Visually intrude into an area having natural scenic qualities?			X	
Discussion: The project parcel is undeveloped and located at the western end of Arbor Lane in Moss Beach. As discussed in Section 1.a., the project parcel is restricted by two scenic easements. One of the easements, created through the 1972 Cypress Cliffs Subdivision (the subdivision that created the project parcel), bisects the southern section of the project parcel and covers all of Lot 11, the adjacent northwestern parcel. Lot 11 will declared to be not a building site and, instead, a lot for exclusive use by the neighborhood's homeowner's association and the property owners of the lots in the resulting subdivision. The subdivision map also states that the "scenic easement as shown on Lots 11, 12, 13, 14, and 17 shall be kept open and free from buildings or structures of any kind except that sideline fencing may run to top of bank." This scenic easement aims to preserve scenic views for the property owners of the lots in the resulting subdivision and for members of the public visiting the neighborhood and surrounding area. The other scenic easement that bisects the northern section of the project parcel runs west along Arbor Lane from Weinke Way. This scenic easement, recorded by the California Coastal Commission in 1975, affected the developments of Lots 16 through 21 to ensure that future development does not intrude onto the scenic easement. This easement also granted public access along the scenic easement on Lot 11. Both scenic easements created larger setbacks for any development proposed on the project parcel. As discussed in Sections 1.a. through 1.f., the proposed project is in compliance with the setback requirements of the scenic easements. In addition to these restrictive scenic easements, the proposed project complies with all applicable zoning regulations, specifically Design Review standards. As discussed in Sections 1.a. through 1.f., the CDRC determined the proposed residence to be in compliance with Midcoast Design					

Review standards and recommended approval to the San Mateo County Planning Commission. The proposed residence was revised from its original design (presented to the CDRC on July 13, 2017) with the interest of preserving the views and ensuring compatibility with the surrounding neighborhood.

Based on these findings, the proposed project will have a less than significant visual impact on natural scenic qualities.

Source: Project Plans, Project Location, County GIS Maps, Field Observations, 1972 Cypress Cliffs Subdivision Map, CDRC Recommendation Letter (for November 9, 2017 Meeting), County Zoning Regulations, County Midcoast DR Standards, California Coastal Commission Resolution No. 74-270.

2. AGRICULTURAL AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State's inventory of forestland, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
2.a. For lands outside the Coastal Zone, convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X

Discussion: The project parcel is located within the Coastal Zone. The project parcel is also not within an area that is mapped or designated as Prime or Unique Farmland or Farmland of Statewide Importance.

Source: Project Location, County GIS Maps, California Department of Conservation Farmland Mapping and Monitoring Program.

2.b. Conflict with existing zoning for agricultural use, an existing Open Space Easement, or a Williamson Act contract?				X
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Discussion: The project parcel is zoned R-1 (Single-Family Residential District). Agricultural uses are not permitted in the R-1 Zoning District. There is also no Open Space Easement or Williamson Act contract associated with the project parcel.

Source: Project Location, County Zoning Regulations, County GIS Maps, County Williamson Act Contracts.				
2.c.	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?			X
Discussion: The project parcel is undeveloped and largely surrounded by single-family residential development. The project parcel does not contain, is not adjacent to, or is not near an area designated as Farmland or forestland (land that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits). Therefore, the project parcel will not convert Farmland to a non-agricultural use or forestland to non-forest use. Source: Project Location, County GIS Maps, California Department of Conservation Farmland Mapping and Monitoring Program.				
2.d.	For lands within the Coastal Zone, convert or divide lands identified as Class I or Class II Agriculture Soils and Class III Soils rated good or very good for artichokes or Brussels sprouts?			X
Discussion: Although the project parcel is located within the Coastal Zone, the project parcel does not contain Class I or Class II Agriculture Soils, or Class III Soils rated good or very good for artichokes or Brussels sprouts. Source: Project Location, Natural Resources Conservation Service Web Soil Survey - California Revised Storie Index.				
2.e.	Result in damage to soil capability or loss of agricultural land?			X
Discussion: The project site is located on soils classified with a Storie Index of Grade 2 - Good (Typic Argiustolls, loamy-Urban land association 5 to 15 percent slopes). The proposed project will convert approximately 30 percent of the parcel to a non-agricultural use. However, as discussed in Section 2.b., agriculture is not an allowed use within the project parcel's zoning district (R-1 Single-Family Residential District). The project parcel is also located within a residential neighborhood with the surrounding area also composed of primarily residential uses. With the project parcel's location within the R-1 Zoning District and existing uses in the surrounding neighborhood, the project parcel is not suitable for a future agricultural use and, thus, the proposed project poses no impact. Source: Project Location, Natural Resources Conservation Service Web Soil Survey - California Revised Storie Index, County Zoning Regulations.				

2.f.	Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))? <i>Note to reader: This question seeks to address the economic impact of converting forestland to a non-timber harvesting use.</i>				X
Discussion: The project parcel has not been identified as forestland or timberland, therefore, there is no conflict with existing zoning or cause for rezoning. Source: Project Location, County GIS Maps, County Zoning Regulations.					

3.	AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
		<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
3.a.	Conflict with or obstruct implementation of the applicable air quality plan?			X	
Discussion: The proposed project does not include any conflict with or obstruct implementation of the Bay Area 2010 Clean Air Plan (CAP), an air quality plan created to improve the Bay Area's air quality and protect public health and the climate. Once constructed, ongoing use of the single-family residence would have minimal impacts to the air quality standards set forth for the region by the Bay Area Air Quality Management District (BAAQMD). During construction of the proposed residence, construction vehicles are also required to meet California Air Resources Board regulations to reduce air pollution (e.g., limits on idling). During construction activities, air emissions will be generated from construction equipment and construction worker vehicles. However, any such construction-related emissions would be temporary and localized. Source: Project Plans, Bay Area Air Quality Management District.					
3.b.	Violate any air quality standard or contribute significantly to an existing or projected air quality violation?		X		
Discussion: During project construction, air emissions will be generated from site grading, construction equipment, and construction worker vehicles. However, any such construction-related emissions will be temporary and localized. The BAAQMD has established thresholds of significance for construction emissions and operational emissions. As defined in the BAAQMD's 1999 California Environmental Quality Act (CEQA) Guidelines, the BAAQMD does not require quantification of construction emissions due to the number of variables that can impact the calculation of construction emissions. Instead, the					

BAAQMD emphasizes implementation of all feasible control measures to minimize emissions from construction activities. The BAAQMD provides a list of construction-related control measures that, when fully implemented, would significantly reduce construction-related air emissions to a less than significant level. These control measures are included in the mitigation measure provided below.

Further, Section 2-1-113 (*Exemption, Sources, and Operations*) of the BAAQMD General Requirements exempts sources of air pollution, associated with the construction of a single-family residence, used solely for residential purposes, as well as road construction, from obtaining an Authority to Construct or Permit to Operate.

Mitigation Measure 1: The applicant shall submit an Air Quality Best Management Practices Plan to the Planning and Building Department prior to the issuance of any grading permit "hard card" or building permit that, at a minimum, includes the "Basic Construction Mitigation Measures" as listed in Table 8-1 of the BAAQMD California Environmental Quality Act (CEQA) Guidelines (May 2011). The following Bay Area Air Quality Management District Best Management Practices for mitigating construction-related criteria air pollutants and precursors shall be implemented prior to beginning any grading and/or construction activities and shall be maintained for the duration of the project grading and/or construction activities:

- a. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- b. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- c. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day.
- d. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- e. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485, of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- f. Roadways and building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- g. Idling times shall be minimized either by shutting equipment or vehicles off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485, of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- h. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications.
- i. Minimize the idling time of diesel powered construction equipment to two minutes.
- j. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Source: Project Plans, Bay Area Air Quality Management District.

3.c.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?		X		
Discussion: As of December 2012, San Mateo County is a non-attainment area for PM-2.5. On January 9, 2013, the Environmental Protection Agency (EPA) issued a final rule to determine that the Bay Area attains the 24-hour PM-2.5 national standard. However, the Bay Area will continue to be designated as "non-attainment" for the national 24-hour PM-2.5 standard until the BAAQMD submits a "re-designation request" and a "maintenance plan" to EPA and the proposed re-designation is approved by the EPA. A temporary increase in the project area is anticipated during construction since these PM-2.5 particles are a typical vehicle emission. The temporary nature of the proposed construction and California Air Resources Board vehicle regulations reduce the potential effects to a less than significant impact. Mitigation Measure 1 in Section 3.b. will minimize increases in non-attainment criteria pollutants generated from project construction to a less than significant level. Source: Project Plans, Bay Area Air Quality Management District.					
3.d.	Expose sensitive receptors to significant pollutant concentrations, as defined by BAAQMD?		X		
Discussion: Any pollutant emissions generated from the proposed project will primarily be temporary in nature. The project site is in a medium density urban residential area with few sensitive receptors (i.e., single-family residences) located within the project vicinity. Additionally, the surrounding tree canopy and vegetation in the southern section of the parcel will help to insulate the project area from nearby sensitive receptors. Mitigation Measure 1 will also help in minimizing any potentially significant exposure to nearby sensitive receptors to a less than significant level. Source: Project Plans, Project Location.					
3.e.	Create objectionable odors affecting a significant number of people?			X	
Discussion: The proposed project is to construct a single-family residence in an urban residential area of the Midcoast. Once constructed, the daily use of the residence would not create objectionable odors. The proposed project has the potential to generate odors associated with construction activities. However, any such odors will be temporary and are expected to be minimal. Source: Project Plans.					
3.f.	Generate pollutants (hydrocarbon, thermal odor, dust or smoke particulates, radiation, etc.) that will violate existing standards of air quality on-site or in the surrounding area?		X		

Discussion: Construction of the single-family residence is expected to generate a temporary increase in dust, motor vehicle and diesel particulate matter in the project area, and minimal increase from vehicles of residents and visitors. This increase is not expected to violate existing standards of on-site air quality given the required vehicle emission standards required by the State of California for vehicle operations. The following mitigation measure is provided to ensure that these pollutants during project construction will be less than significant.

Source: Project Plans, California Department of Motor Vehicles.

Mitigation Measure 2: The applicant shall submit a dust control plan to the Planning Department for review and approval prior to the issuance of a building permit for the project. The approved plan shall be implemented for the duration of any grading, demolition, and construction activities that generate dust and other airborne particles. The plan shall include the following control measures:

- a. Water all active construction areas at least twice daily.
- b. Water or cover stockpiles of debris, soil, sand, or other materials that can be blown by the wind.
- c. Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least 2 feet of freeboard.
- d. Apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking, and staging areas at the construction sites. Also, hydroseed or apply non-toxic soil stabilizers to inactive construction areas.
- e. Sweep daily (preferably with water sweepers) all paved access roads, parking, and staging areas at the construction sites.
- f. Sweep adjacent public streets daily (preferably with water sweepers) if visible soil material is carried onto them.
- g. Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).
- h. Limit traffic speeds on unpaved roads within the project parcel to 15 miles per hour (mph).
- i. Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- j. Replant vegetation in disturbed areas as quickly as possible.

Source: Project Plans, Bay Area Air Quality Management District.

4. BIOLOGICAL RESOURCES. Would the project:				
	Potentially Significant Impacts	Significant Unless Mitigated	Less Than Significant Impact	No Impact
4.a. Have a significant adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		X		

Discussion: A biological resources assessment (Kopitov assessment) was prepared by Kopitov Environmental LLC (Kopitov), dated May 9, 2015, for a 1.04-acre biological study area (BSA) centered on the project parcel. An update to the Kopitov assessment (CRE assessment), dated October 2, 2017, was also prepared by Coast Ridge Ecology LLC (CRE) to include an updated California Natural Diversity Database (CNDDDB) map, updated review of the potential presence of special-status species on the property, and a map of the riparian corridor associated with Dean Creek. The immediate surrounding area around the project site includes single-family residences, the Fitzgerald Marine Reserve, and a steep gully with an intermittent creek (Dean Creek).

Special-Status Plant Species

Kopitov identified 56 special-status plant species with a potential to occur within the BSA. No special-status species were observed during Kopitov's field visit of the project site. However, suitable habitat may be present for Hickman's potentilla (*Potentilla hickmanii*) and coastal marsh milk-vetch (*Astragalus pycnostachyus*) in the Dean Creek habitat located south of the project parcel. With field visits conducted during peak bloom season (two referenced populations located within 1 mile of the project site were visited to confirm this), Kopitov concluded that there is no potential for these species to occur in the project area and surrounding vicinity. Kopitov also did not find any United States Fish and Wildlife Service (USFWS) designated critical plant species within 5 miles of the project site.

CRE updated the CNDDDB list in the Kopitov assessment and the resultant list identified 13 special-status plant species within a 3-mile radius of the project site (as shown in Figure 2 of the CRE assessment). More recent special-status plant observation data on Blasdale's bent grass (*Agrostis blasdalei*) and perennial goldfields (*Lasthenia californica* ssp. *macrantha*) was discovered by CRE. An occurrence of Blasdale's bent grass was observed approximately 0.2 miles north of the project site. Perennial goldfields were observed approximately 1.0 miles north of the project site at Montara State Beach. Both species are not expected to be present on the project parcel or surrounding area as these species were not detected during the field visits conducted by Kopitov during peak blooming season. No other additional special-status plant species were determined to have any potential for presence in the project area and surrounding vicinity other than those identified by Kopitov.

Special-Status Wildlife Species

Kopitov identified six special-status or unique wildlife species to have the potential to occur in the BSA (listed below). These species have the potential to occur in the BSA due to nearby occurrences and/or potential suitable habitat.

1. Monarch Butterfly: The nearest known roost site for the monarch butterfly is located approximately 2 miles east of the project. Threats to monarch butterflies include loss of winter roost habitat. The Monterey cypress grove has the potential to provide winter roosting habitat. Although two Monterey cypress trees will be removed to accommodate the proposed residence, Kopitov determined that the tree removal would have a less than significant impact to potential winter roosting habitat as the majority of the Monterey cypress grove would not be affected by the project.
2. California Red-Legged Frog (CRF): The CRF, a federally threatened species and a California species of special concern, was previously recorded as moving long distances (occurring mostly at night) over land between water sources during the winter season. CRFs can be threatened by a variety of human-caused actions such as urban development, wetland habitat loss, and habitat fragmentation. Federally designated critical habitat for the CRF is located approximately 0.5 miles east of the study area. CRFs were not observed during the field visit, but have been found to be approximately 1.5 miles south of the project parcel near ponds west of the Half Moon Bay Airport. A sighting was also reported during the construction of the nearby Fitzgerald Marine Reserve Dardenelle Trail in 2012. However, Kopitov did not observe any breeding habitat for the CRF in the project area.
3. San Francisco Garter Snake (SFGS): Historically, the prime habitats of the SFGS, a federal and state listed endangered species and fully protected under Section 5050 of the California Fish and Game Code (CFGF), include aquatic habitats with dense vegetation with preference near open hillsides and habitats with shallow water edges. The SFGS's peak activity occurs during spring and early summer when they are typically found near ephemeral ponds hunting Pacific tree frogs (*Pseudacris regilla*) that use shallow ponds for breeding. As ephemeral ponds dry, SFGS move to more permanent aquatic habitats where CRF breed. The SFGS can also be found in upland habitat characterized as open grassy habitat, coyote bush (*Baccharis pilularis*), wild oat (*Avena fatua*), wild barley (*Hordeum spp.*), and various brome species (*Bromus spp.*). Shrub species likely provide sufficient cover from predators while grasses provide exposed surfaces for basking. The SFGS retreats to shelters for dormant periods which include upland habitats inhabited by fossorial mammals. Mating generally occurs during warm days in early spring as snakes emerge from hibernacula and disperse to nearby aquatic habitat. The SFGS are threatened by a variety of human-caused actions such as urban development, wetland habitat loss, and habitat fragmentation. The SFGS also fall prey to species such as domestic cats, raccoons, and bullfrogs. The historic range for SFGS includes the entirety of San Mateo County. The nearest occurrence was approximately 1.5 miles south of the BSA. Since the project area is within the SFGS dispersal range, there is potential for Dean Creek and the BSA to provide dispersal and upland habitat for this species.
4. San Francisco Dusky-Footed Woodrat (SFDW): The SFDW is a CDFW species of special concern. This species typically inhabits brushy and forested habitats in California. The SFDW builds mounded, multi-chambered stick complexes (often referred to as lodges) ranging from 4 to 8 feet in diameter and up to 6 feet in height. The SFDW structures were not observed in the BSA. However, since the Dean Creek habitat was inaccessible during the field visit, it was not possible to eliminate the potential for this species to occur in the gully. The BSA provides the potential for the SFDW to use the poison oak and Monterey cypress habitat for forage and nesting. The potential threats include habitat loss and anthropogenic disturbance.
5. Salt Marsh Common Yellowthroat (SMCY): The SMCY is a California species of special concern and a year-round resident of San Mateo County. Its primary habitat includes dense vegetation of wetlands, marshes, estuaries, prairies, and riparian areas that are used for nesting and foraging. The nearest recorded occurrence was approximately 1.8 miles south

of the project site in Princeton Marsh. This species was not detected during the field visit. However, Dean Creek has potential suitable habitat to support this species.

6. **Hoary Bat:** All bat species are given special consideration under the California Environmental Quality Act (CEQA). Bats can roost in nearby structures and Monterey cypress trees and may forage over the project site. Threats include loss of habitat and mortality due to human activities.

Kopitov concluded that construction activities could result in substantial adverse effects to CRF and SFGS. Construction activities, including, but not limited to, vegetation removal, grading, staging, and other construction-related activities, may result in mortality of these species or interference with dispersal. Both species have the potential for dispersal and movement from breeding ponds and creeks into the BSA during significant rain events. Additionally, Kopitov concluded that the proposed project may result in significant adverse effects to SFDW that may be nesting in the poison oak habitat and bats that may roost in the Monterey cypress trees.

CRE visited the project site in September 2017 and found no additional observations of SFGS. The only species not assessed in the Kopitov assessment that was not included in the CRE assessment was fogbelt bumblebee (*Bombus caliginos*). The fogbelt bumblebee does not have federal or state-listing protection, but is ranked as an S1/S2 (State Critically Imperiled/State Imperiled) by the State of California. This species has not been seen in the region since the late 1920s when occurrences were recorded in the Moss Beach, Pacifica, and Hillsborough areas. CRE determined this species to not likely be present on the project site as it has likely been extirpated from the region for decades. No additional special-status wildlife species were determined to have any potential for presence in the project area and surrounding vicinity other than those identified in the Kopitov assessment.

Story poles were required to be installed 10 days prior to this proposed project being presented to the CDRC at their July 13, 2017 CDRC meeting. Some vegetation, primarily California blackberry, on the project parcel was mowed to accommodate the story poles installation on July 3, 2017. The CRE assessment states that there was no evidence of SFDW middens found within the mowed area during their site inspection on September 14, 2017. Additionally, no SFDW middens were observed on the remainder of the project parcel or within the Dean Creek corridor downslope of the parcel.

Kopitov (with no recommended changes from CRE) has provided the following mitigation measures to ensure that adverse effects to these species are less than significant:

Mitigation Measure 3: Within 48 hours prior to the onset of any project-related activities, a qualified biologist should conduct a pre-construction survey of the project area to ensure that no California red-legged frogs or San Francisco garter snakes are present. In addition, immediately prior to vegetation removal or other construction activities, a qualified biologist familiar with the habitat requirements of California red-legged frogs and San Francisco garter snakes shall conduct a pre-construction survey to determine whether any of these species is located within the project area.

Mitigation Measure 4: A minimum 3-ft. high exclusion fence shall be installed around the limits of construction, including clearing, grading, and staging, unless otherwise directed by San Mateo County, United States Fish and Wildlife Service, or California Department of Fish and Wildlife, to create a barrier to prevent the California red-legged frog and San Francisco garter snake from entering the project site. No polymesh or similar materials shall be used as fencing materials. The fencing should be removed only when all construction equipment is removed from the project site. Fencing shall be inspected and any opening shall be repaired immediately. If openings are found, the project area shall be inspected by a biological monitor to ensure that special-status species have not entered the project area. The designated biological monitor may be a construction team manager or supervisor trained in the identification of special-status species.

Mitigation Measure 5: Vegetation or other materials shall not be stockpiled at the project site as it

provides potential hiding areas for California red-legged frogs, San Francisco garter snakes, and other wildlife species. Vegetation shall be placed directly into a disposal container and removed from the construction area, as practicable. If vegetation is stockpiled on the ground, removal shall be conducted under the supervision of a qualified biologist.

Mitigation Measure 6: To avoid, minimize, and mitigate impacts to the California red-legged frogs, San Francisco garter snakes, and their respective habitats, a worker education program and/or education materials prepared by a qualified biologist shall be provided to all workers prior to onset of construction activities.

Mitigation Measure 7: If required by San Mateo County, California Department of Fish and Wildlife, or United States Fish and Wildlife Service, a biological monitor shall inspect the project area prior to the beginning of construction activities to ensure that the California red-legged frogs and San Francisco garter snakes have not entered the project area. The designated biological monitor may be a construction team manager or supervisor trained in the identification of special-status species.

Mitigation Measure 8: Under no circumstances should California red-legged frogs and San Francisco garter snakes be handled, relocated, or otherwise harmed or harassed at any time. San Mateo County, United States Fish and Wildlife Service, and California Department of Fish and Wildlife shall be notified immediately upon discovery of these species in the project site or surrounding area.

Mitigation Measure 9: Prior to the start of vegetation removal, a qualified biologist familiar with the San Francisco dusky-footed woodrat and its habitat requirements shall survey for their nests within or immediately adjacent to the potential habitat (i.e., poison oak scrub).

- a. If no nests are observed, no further mitigation is required.
- b. If nests are observed, but would not be directly impacted by construction activities, a qualified biologist shall establish a 10-ft. buffer around the nests using exclusion fencing to ensure that they are not accidentally destroyed by construction activities. Exclusion fencing shall remain in place until project completion.
- c. If a nest is observed within the vegetation clearing area, a qualified biologist shall disassemble the nest by hand and relocate and reconstruct the nest away from the construction area.

Mitigation Measure 10: If trees are removed or pruned, a qualified biologist shall conduct a pre-construction bat roost survey to determine if bats are present in the trees on or near the project parcel. If bats are detected, suitable measures to avoid and/or exclude bats shall be determined by the California Department of Fish and Wildlife.

Source: Project Plans, Project Location, County GIS Maps, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015), Coastal Ridge Ecology LLC Update to Biological Resources Assessment (dated October 2, 2017).

4.b. Have a significant adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		X		
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Discussion: The Kopitov assessment identified four sensitive habitats in the BSA: habitats supporting rare and endangered species; Dean Creek; the Fitzgerald Marine Reserve, a State of California ecological reserve; and coastal bluffs. Potential impacts to habitats supporting rare and

endangered species are discussed in Section 4.a. and include mitigation measures to ensure that impacts are reduced. The proposed residence will also be located approximately 70 feet from the top of the coastal bluffs. In addition to the minimum required zoning setbacks and setback required for the 75-ft. scenic easement (as discussed in Section 1.a.) bisecting the northern half of the project parcel, Kopitov determined that the proposed project will not impact the coastal bluffs. Regarding the Fitzgerald Marine Reserve, a State of California designated ecological reserve to protect natural areas with use restricted to scientific research relating to the management and enhancement of marine resources, no disturbance or taking of marine life, archaeological resources, or geological formations are allowed, and no fishing or collecting is permitted unless authorization is approved by the CDFW for scientific research. The proposed project does not propose any of these unauthorized activities.

Dean Creek is an intermittent creek that flows adjacent to the project area at the bottom of a steep gully on the southern boundary. Historically, Dean Creek has intermittent flow, but during high rainfall years, such as 2016 and 2017, Dean Creek may have year-round flow. Residential uses in the surrounding area also contribute additional flow, especially during the dry season due to yard irrigation and runoff/seepage to the creek. A portion of Dean Creek flows through underground pipes while a portion flows through an open channel.

The gully along the southern boundary of the project parcel was too steep to safely traverse. However, Kopitov examined the mouth of Dean Creek that flows to Kelp Cove in the Fitzgerald Marine Reserve. An old, rusted, broken metal pipe was identified on the bed of the creek. Kopitov stated that this pipe likely runs the length of the creek until it is undergrounded. During the field visit, the creek bed was damp with no standing water observed in the accessible portion of the creek bed (approximately 60 to 100 feet from the mouth). A shallow amount of water (less than 1-inch deep) was observed inside the pipe at about 100 feet upstream of the mouth. Kopitov also observed hydrophytic plants on the creek bed and bank approximately 60 to 75 feet upstream of the creek mouth to include arroyo willow (*Salix lasiolepis*), *Typha species (sp.)*, hoary stinging nettle (*Urtica sarmentosa*), silver weed cinquefoil (*Potentilla anserina*), and curly dock (*Rumex crispus*). The hydrophytic plants were restricted to the creek bed around the pipe. *Typha sp.* was also observed further upstream covering a larger area which indicates a potential wetland or a wider stream bed. Other plant species observed at the toe of the gully and within the creek bed and bank included Italian stone pine (*Pinus pinea*), garden nasturtium (*Tropaeolum majus*), cape ivy (*Delairea odorata*), pampas grass (*Cortaderia selloana*), periwinkle (*Vince species*), wild radish (*Raphanus sp.*) and inceptant/hottentot fig (*Carpobrotus edulis*). Monterey cypress trees line the top of the gully and continue down slope. A portion of the gully adjacent to the southern project boundary was degraded by human use (i.e., rope swings on the cypress trees). There was no visible understory.

Pursuant to LCP Policy 7.7 (*Definition of Riparian Corridors*), a riparian corridor is defined by the "limit of riparian vegetation" which is a line determined by the association of the following plant and animal species normally found near streams, lakes, and other bodies of freshwater: red alder, jaumea, pickleweed, big leaf maple, narrow-leaf cattail, arroyo willow, broadleaf cattail, horsetail, creek dogwood, black cottonwood, and box elder. This corridor must contain at least a 50% cover of some combination of these plants to be considered a riparian corridor. During their field visit, over two years since Kopitov's field visit, CRE did not identify any of these plants within the corridor section of Dean Creek. CRE identified a combination of native and non-native plant species such as Bur Reed (*Sparganium sp.*), California blackberry (*Rubus ursinus*), stinging nettle (*Urtica dioica*), wild radish (*Raphanus sp.*), nasturtium (*Tropaeolum majus*), and cape ivy (*Delairea oderata*). The outside edge of the riparian wetland floodplain feature of the creek was used to delineate the outside edge of the riparian zone. The boundary between the floodplain and upland area was determined by a visible soil, slope, and vegetative change. The riparian buffer zone extends upslope from the floodplain area and encompasses a large section of the steep slope dominated by Monterey cypress trees. CRE observed very little understory vegetation with the exception of invasive plants such as

cape ivy. Based on these findings and the LCP definition of riparian corridor, Dean Creek does not have a riparian corridor.

Pursuant to LCP Policy 7.11 (*Establishment of Buffer Zones*), for intermittent streams where no riparian vegetation exists along both sides of riparian corridors, a 30-ft. buffer zone is required. The distance from the floodplain/corridor boundary to the project parcel's southern boundary line, a distance closer than from the midpoint of the stream, varies from approximately 50 to 70 feet. CRE determined that the proposed residence complies with this buffer zone requirement and concluded that there would be no impacts to Dean Creek.

The mitigation measures in Section 4.a., recommended by Kopitov, were included to avoid and reduce adverse effects to sensitive or special-status species that have potential suitable habitat in these sensitive habitat areas.

Source: Project Plans, Project Location, County GIS Maps, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015), Coastal Ridge Ecology LLC Update to Biological Resources Assessment (dated October 2, 2017), County Local Coastal Program.

4.c. Have a significant adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

X

Discussion: The Pacific Ocean is located approximately 30 feet west from the western property line of the parcel. An undeveloped parcel owned by the neighborhood's homeowner's association is located between the subject parcel and coastal bluffs. Dean Creek borders the parcel to the south with the top of the creek line encroaching up to approximately 50 feet into the southwestern corner of the parcel. The Kopitov assessment discussed in Section 4.a. concluded that the proposed project would not result in substantial adverse effects to any County, State, or Federal-protected wetlands or streams through direct removal, filling, hydrological interruptions, or other means provided that appropriate buffer areas and construction Best Management Practices are implemented. However, construction activities may increase stormwater runoff to Dean Creek. Implementation of the following mitigation measure is included, as recommended by Koptiov, to reduce any potential effects to wetlands or streams to less than significant by controlling sediment and erosion:

Mitigation Measure 11: Where sediment and erosion control materials are installed, repaired, or removed (i.e., wattles, silt fences, etc.), a qualified biologist should check the work area to ensure that sensitive species are not present or entrapped. Polymesh and/or other similar materials should not be used as these can entrap or snag reptiles, amphibians, or other small animals.

Source: Project Location, County GIS Maps, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015).

4.d. Interfere significantly with the movement of any native resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?

X

Discussion: The Kopitov assessment discussed in Section 4.a. determined that the Monterey cypress and poison oak on the project site provide suitable nesting and foraging habitat for migratory nesting birds and raptors. Kopitov also stated that the project site would result in the loss of some habitat that could potentially be suitable for migration and travel corridors. However, the project site would likely result in less than significant adverse effects to the movement of native resident species or migratory wildlife species or corridors as the gully, coastal bluffs, and adjacent vacant parcel to the northwest (owned by the neighborhood's homeowner's association) would continue to provide connectivity to migration and travel corridors.

If construction activities coincide with the typical bird nesting season (February 1 to September 15), the project has the potential to result in substantial adverse effects to nesting birds as a result of nest abandonment or direct take of birds, young, nests, and eggs. Kopitov recommends that vegetation removal occur during the non-nesting season. The following mitigation measure was added, as recommended by Kopitov, to reduce impacts to less than significant so that nesting birds are protected from disturbance and harm:

Mitigation Measure 12: If the construction activities coincide with the nesting bird season (February 1 to September 15), pre-construction nesting bird surveys shall be conducted by a California Department of Fish and Wildlife-approved biologist no more than 10 days prior to planned construction activities in order to locate nests within and adjacent to the proposed construction area. For all migratory bird species, the survey will include nesting birds within a 100-ft. radius from the project site.

- a. If no active nests are detected, construction activities may take place as scheduled.
- b. If an active nest is observed, the project shall be modified as necessary to avoid direct take of identified nest, eggs, and/or young. Modifications may include establishment of protective buffer as determined by a qualified biologist. Typical protective buffer zones are 50 feet for passerine nests and 250 feet for raptors. If construction activities are significantly impacted by the buffer zones, California Department of Fish and Wildlife shall be contacted to request a reduced buffer that would still protect nesting birds.

Source: Project Location, County GIS Maps, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015).

4.e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (including the County Heritage and Significant Tree Ordinances)?			X	
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Discussion: A grove of mature Monterey cypress trees are located on the steep canyon upland slope separating the property from Dean Creek. Two Monterey cypress trees are also located in the middle and left side yard of the project parcel. All the trees on the project parcel are of significant size (12 inches or greater in diameter at breast height) as defined in Section 12,012 of the San Mateo County Significant Tree Ordinance. The two Monterey cypress trees located in the middle and left side yard of the project parcel will be removed to accommodate the proposed residence.

The ECR assessment states that the removal of these two trees would not impact Dean Creek as they are located on the flat bluff top within the proposed building envelope, approximately 21 feet and 55 feet from the top of the creek. ECR states the removal of these trees would cause no disturbance to the steep slope downward to Dean Creek. In response to public comments received during the 10-day commenting period prior to the November 9, 2017 CDRC meeting, a response letter (CRE response letter) was prepared by CRE, dated November 3, 2017, stating that the trees

can be easily removed without causing erosion to the edge of the coastal bluffs and Dean Creek. The other trees on the property will be preserved with proper tree protection measures (i.e., fiber rolls and tree protection fencing). Fencing will also be used to delineate the construction area, providing an adequate physical barrier and buffer zone between the trees and construction activities.

A 2:1 tree replacement is required for parcels within a Design Review District in the Coastsides. Four trees of at least 15-gallon size each are required for the two trees proposed for removal. The applicant requested an exception to this requirement. The proposed landscape plan shows two Monterey cypress trees to be planted at the rear left corner of the project parcel and a combination of native grasses and shrubs in the open areas on the west and south sides of the proposed residence. The proposed landscaping aims to reduce further impacts to surrounding neighboring properties. Another reason for the requested exception is the constraint in feasible locations for additional trees due to the scenic easements along the west and south sides of the proposed residence. These easements do not permit development, including trees, within their boundaries. Additionally, the CDRC recommended approval of the proposed project which includes the proposed landscape plan.

Based on the discussion above, with the exception of tree replacement, the proposed project does not conflict with any local policies or ordinances protecting biological resources including the County Significant Tree Ordinance.

Source: Project Plans, Project Location, County GIS Maps, County Significant Tree Ordinance, Coastal Ridge Ecology LLC Update to Biological Resources Assessment (dated October 2, 2017), Coastal Ridge Ecology LLC Response to Comments on Update to Biological Resources Assessment (dated November 3, 2017).

4.f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, other approved local, regional, or State habitat conservation plan?

X

Discussion: The project site is located within the Fitzgerald Marine Reserve (Reserve), a 402-acre natural resource area extending along San Mateo County's north coast, 3 miles south from Point Montara (at the northern end of Vallemar Street) to the south end of Pillar Point and 1,000 feet west into the ocean from the mean high tide line. Part of the Monterey Bay National Marine Sanctuary, the Reserve covers 402 acres and includes 370 acres of intertidal and subtidal marine habitat below the high tide line and 32 acres of upland coastal bluffs. The Reserve is under joint custodianship of the County Parks Department and the California Department of Fish and Wildlife, and is operated pursuant to the policies and guidelines of the 2002 Final Fitzgerald Marine Reserve Master Plan. The Reserve is both a "Marine Life Refuge" and an "Area of Biological Significance (ASBS)", designated by the State of California.

The boundary of the Reserve includes coastal bluffs to the west of the project parcel and all of Arbor Lane which is designated as a "trail easement" in the Final Draft of the Fitzgerald Marine Reserve Master Plan. The western boundary of the project parcel is approximately 30 feet from the top of the coastal bluff. A vacant parcel is located between the coastal bluffs and project parcel. There is also a wooden fence located along the coastal bluff top. Activities within the Fitzgerald Marine Reserve are restricted to scientific research relating to the management and enhancement of marine resources, no disturbance or taking of marine life, archaeological resources or geological formations is allowed, and no fishing or collecting is permitted unless authorization is approved by the CDFW for scientific research. As discussed in Section 4.b., the proposed project does not propose any of these unauthorized activities. The mitigation measures in Sections 4.a., 4.c., and 4.d., recommended by Kopitov, were included to avoid and reduce adverse effects to sensitive or

special-status species with potential suitable habitat in the sensitive habitat areas discussed in Section 4.b., including the Fitzgerald Marine Reserve. With these mitigation measures, project impacts to the Reserve area will be less than significant. Source: Project Plans, Project Location, 2002 Final Fitzgerald Marine Reserve Master Plan.				
4.g. Be located inside or within 200 feet of a marine or wildlife reserve?		X		
Discussion: The project parcel is located within the Fitzgerald Marine Reserve. As discussed in Sections 4.a. and 4.b., the proposed project does not propose any unauthorized activities and the mitigation measures in Section 4.a., 4.c, and 4.d. are included to ensure that any such impacts are less than significant. Source: Project Location, County GIS Maps, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015).				
4.h. Result in loss of oak woodlands or other non-timber woodlands?				X
Discussion: The project parcel includes no oak woodlands or other timber woodlands. Thus, the project poses no impact. Source: Project Location, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015).				

5. CULTURAL RESOURCES. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
5.a. Cause a significant adverse change in the significance of a historical resource as defined in CEQA Section 15064.5?				X
Discussion: The State of California Office of Historic Preservation has not identified any known historical resources on the project parcel or surrounding area. Therefore, the project poses no impact. Source: Project Location, County GIS Maps, California Register of Historical Resources.				
5.b. Cause a significant adverse change in the significance of an archaeological resource pursuant to CEQA Section 15064.5?		X		
Discussion: The project parcel is also surrounded by residential development and is the last of the undeveloped parcels on Arbor Lane with the exception of the adjacent parcel to the northwest of the project parcel which has been deemed a non-building site in the 1972 Cypress Cliffs Subdivision Map. Based on the project parcel's existing surrounding land uses, it is not likely that the project parcel and surrounding area would host any archaeological resources. However, the following				

mitigation measure is provided in the event that any cultural, paleontological, or archeological resources are encountered during construction and excavation activities:

Mitigation Measure 13: In the event that should cultural, paleontological, or archaeological resources be encountered during site grading or other site work, such work shall immediately be halted in the area of discovery and the project sponsor shall immediately notify the Community Development Director of the discovery. The applicant shall be required to retain the services of a qualified archaeologist for the purpose of recording, protecting, or curating the discovery as appropriate. The cost of the qualified archaeologist and of any recording, protecting, or curating shall be borne solely by the project sponsor. The archaeologist shall be required to submit to the Community Development Director for review and approval a report of the findings and methods of curation or protection of the resources. No further grading or site work within the area of discovery shall be allowed until the preceding has occurred. Disposition of Native American remains shall comply with CEQA Guidelines Section 15064.5(e).

Source: Project Location, County GIS Maps, 1972 Cypress Cliffs Subdivision Map.

5.c.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		
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Discussion: Based on the project parcel's existing surrounding land uses, it is not likely that the project parcel and surrounding area would host any paleontological resource or site or unique geologic feature. However, Mitigation Measure 13 in Section 5.b. is provided to ensure that the impact is less than significant if any resources are encountered.

Source: Project Location, County GIS Maps.

5.d.	Disturb any human remains, including those interred outside of formal cemeteries?		X		
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Discussion: No known human remains are located within the project area or surrounding vicinity. In case of accidental discovery, Mitigation Measure 13 in Section 5.b. is recommended.

Source: Project Location, County GIS Maps.

6. GEOLOGY AND SOILS. Would the project:				
	Potentially Significant Impacts	Significant Unless Mitigated	Less Than Significant Impact	No Impact
6.a. Expose people or structures to potential significant adverse effects, including the risk of loss, injury, or death involving the following, or create a situation that results in:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other significant evidence of a known fault? <i>Note: Refer to Division of Mines and Geology Special Publication 42 and the County Geotechnical Hazards Synthesis Map.</i>		X		

Discussion: A geotechnical report (Michelucci report) was prepared by Michelucci & Associates, Inc. (Michelucci), dated July 6, 2016. A geotechnical update and review of structural plans and calculations (updated Michelucci reports) were also prepared by Michelucci, dated August 29, 2017 and November 22, 2017, respectively. Michelucci determined the closest mapped major active fault zone to the project site is Seal Cove Fault Zone with its main active trace located approximately 0.1 miles to the northeast of the project parcel. The Seal Cove Fault is at the northern extension of the San Gregorio Fault which extends south of Monterey Bay and northward into the Pacific Ocean, west of San Francisco. The major active trace of the San Andreas Fault is mapped approximately 9.0 miles northeast of the project parcel while the Hayward and Calaveras Faults are located further northeast. The Seal Cove, San Andreas, and Calaveras Faults are all part of the major active San Andreas Fault System and the sources of numerous earthquakes that have impacted the San Francisco Bay Area and throughout California. Although it is highly probable that the proposed project will experience very strong ground shaking during a moderate to large nearby earthquake, Michelucci states that the proposed project can be developed as planned, provided that the geotechnical recommendations from their report be implemented. Therefore, since the project location and its distance from the cited fault zones can result in strong seismic ground shaking in the event of an earthquake, the following mitigation measure is recommended to ensure that such impacts are less than significant:

Mitigation Measure 14: The design of the proposed development (upon submittal of the building permit) on the subject parcel shall generally follow the recommendations cited in the Geotechnical and Geologic Investigation prepared by Michelucci & Associates, Inc. and its subsequent updates regarding seismic criteria, grading, drilled piers, slab-on grade construction, and surface drainage. Any such changes to the recommendations by the project geotechnical engineer cited in this report and subsequent updates shall be submitted for review and approval by the County's geotechnical engineer.

Source: Project Plans, Project Location, San Mateo County Hazards Maps, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016), Michelucci & Associates, Inc. Geotechnical and Geologic Investigation Update (dated August 29, 2017).

ii. Strong seismic ground shaking?		X		
Discussion: Pursuant to the discussion in Section 6.a.i., strong seismic ground shaking may occur in the event of an earthquake. However, the mitigation measure provided in Section 6.a.i. will ensure that impacts are less than significant. Source: Project Plans, Project Location, San Mateo County Hazards Maps, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016), Michelucci & Associates, Inc. Geotechnical and Geologic Investigation Update (dated August 29, 2017).				
iii. Seismic-related ground failure, including liquefaction and differential settling?		X		
Discussion: The project parcel is located within an area designated as "very low" potential for liquefaction. However, pursuant to the discussion in Section 6.a.i., its respective mitigation measure is provided to ensure that any impacts are less than significant. Source: Project Location, San Mateo County Hazards Maps, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016), Michelucci & Associates, Inc. Geotechnical and Geologic Investigation Update (dated August 29, 2017).				
iv. Landslides?		X		
Discussion: The project parcel is located within an area designated as "few existing landslides." Further, the Michelucci report determined that there are no indications of landsliding within or near the project parcel. However, pursuant to the discussions in Section 6.a.i. and 6.a.iii., the mitigation measure in Section 6.a.i. is provided to ensure that impacts from landslides are less than significant. Source: Project Location, San Mateo County Hazards Maps, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016), Michelucci & Associates, Inc. Geotechnical and Geologic Investigation Update (dated August 29, 2017).				
v. Coastal cliff/bluff instability or erosion?		X		
<i>Note to reader: This question is looking at instability under current conditions. Future, potential instability is looked at in Section 7 (Climate Change).</i>				
Discussion: The Michelucci report includes an aerial photographic interpretation discussing sixteen sets of aerial photographic stereo pairs taken from 1941 and 2005. In 1941, the project site and surrounding area were row crops with a leveled ground surface and slight slope causing drainage discharge to flow northwest toward the coastal bluffs. Past bluff retreat appeared to be due to periodic sloughing of relatively loose soil. The creek bank of Dean Creek was exposed and sloped down to the creek channel with the slope exhibiting minor slumping and sloughing of soil, but no indication of landslides or active bluff retreat. Subsequent imagery through 2005 indicated periodic sloughing and falling of soil from the exposed ocean bluff face both directly west of the project site and to the north and south. By 1991, a retaining wall was present along the ocean bluff at the western boundary of the existing residence north of the project parcel which still exists today. <u>Dean Creek</u> The Michelucci report states that the sloping creek bluff to the south of the project parcel is subject to minor sloughing and erosion, and growth of dense vegetation, but that the top of the bluff does not				

appear to retreat. Michelucci compared 1997 and 2016 site surveys and found that they indicated negligible, minor slope retreat, which, based on the general slope appearance in the historical aerial photographs, is applicable to a longer period of time. Michelucci determined that the creek bluff retreat does not appear to be a direct hazard to the proposed residence.

Coastal Bluffs

Michelucci observed indications of failure of the ocean bluffs during the winter of 2015-2016 with debris from the slope present at the base of the slope and a bare "scar" on the bluff face at the location of where the debris fell. The failure mechanism of the ocean bluff face appears to be undercutting of the relatively weak, unconsolidated bluff sediments by wave action at the beach level. Comparing the 1997 and 2016 site surveys, the bluff retreat at four representative locations from the north to the south were 8, 16, 12, and 6 feet, an average of 10.5 feet corresponding to an average retreat rate of 0.55 feet per year. The western property line of the project parcel is located approximately 30 feet at its closest point from the edge of the ocean bluffs. The Michelucci report states that the most conservative average bluff retreat rate of 1.25 feet per year (taken from a published calculation of average annual ocean bluff retreat prepared by Gary Griggs and Lauret Savoy in 1985) was used in their projection, resulting in approximately 24 years for the bluff to reach the western property line of the project parcel. At this rate, the ocean bluff would retreat an additional 30 feet to the western building setback line in approximately 48 years, and to the closest point of the proposed residence, approximately 17 feet further inland, in approximately 14 additional years. At the maximum rate of 1.25 feet per year, Michelucci estimated that the bluff would reach the proposed residence in approximately 62 years.

The Michelucci report acknowledges that the 62 year period is conservative and that their calculations (based on the same 1866 site survey used by Griggs and Savoy) resulted in a lower average rate of 0.73 feet per year. Further, additional calculations based on the historical aerial photographs and site surveys also resulted in lower average rates of retreat ranging from 0.40 to 0.78 feet per year. The Michelucci report concluded that the average retreat rate is likely slower and with a more reasonable rate of 0.78 feet per year, the ocean bluffs would reach the western property line, western building setback line, and closest point of the proposed residence in approximately 38, 76, and 99 years, respectively. Michelucci notes that these calculated rates of bluff retreat are based on an assumed constant retreat rate. Ocean bluff failures occur episodically and not uniformly through time. Therefore, the measured/calculated rates of retreat must be assumed to be indicative, but not strictly representative of long-term rates. An individual failure episode may involve several feet of bluff retreat followed by many years, even decades, of no retreat.

The Michelucci report also discusses a qualitative evaluation of ocean bluff seismic stability. Michelucci states that geologic literature suggests that ocean bluff failures have occurred along the San Mateo County coast during earthquakes, specifically during the 1905, 1957, and 1989 San Francisco, Daly City, and Loma Prieta events. The events appear to generally consist of "peeling" and "slumping" of bluff face material similar to undercutting by wave erosion, as opposed to circular or block glide-type failures. The Michelucci report concluded that earthquake-caused instability would be similar in scope to the periodic, primarily winter wave undercut failures, and would likely replace or occur at the location of an imminent undercutting failure. Thus, seismic bluff failure would be incorporated into as opposed to being additive to the long-term bluff retreat.

Based on these findings, the Michelucci report concludes that the project can be developed as planned, provided that the recommendations in their report are followed. Their primary geotechnical consideration involves the upper 2 to 4 feet of surface soil that is generally weak. This material is compressible and consideration should be given to supporting the planned slab on grade floor. Drilled reinforced concrete piers will gain support in the strong Marine Terrace Deposits that were encountered below the weak surface soils in the three test borings conducted by Michelucci. In order to fortify the foundation and make it resistant to bluff retreat, consideration should be given to

constructing deep drilled piers along the edge of the structure closest to the bluffs and utilizing the slab and more conventional interior and perimeter piers as "tie backs."

Updates to Geotechnical Report

The updated Michelucci reports, as mentioned in Section 6.a.i., found that the slope down from the project site to Dean Creek was visually unchanged with no indication of further erosion or retreat from the 2016-2017 winter season. Michelucci descended the slope of the cliff at one location from the adjacent flat parcel and also observed the slope from The Strand, a road along the bluff to the south, on the opposite side of the creek. There were no fresh indications of erosion or undercutting of the soil face, and the vegetation did not change. The top of the slope continues to be protected by trees with ground surface only minimally exposed to wind and direct rainfall.

Regarding the ocean bluff, Michelucci observed a retreat of approximately 6 feet closer to the existing fence on the adjacent parcel (specifically, the fence post at the southwest corner), and a maximum of 11 feet further north, approximately 60 feet from the corner post since the original report was prepared in 2016. The updated Michelucci reports state that their measurements are accurate to a distance on the order of 1 to 2 feet due to the possible differences in interpretation of the top of bluff location. Michelucci states that the 2016-2017 bluff retreat is representative of past episodic events (in occurrence, not necessarily in magnitude), and their previous estimates of average annual rates and anticipated time until the retreat reaches the proposed residence remain unchanged. Based on these findings, the updated Michelucci reports concluded that the proposed project continues to be feasible from a geologic and geotechnical viewpoint provided that the recommendations in the original Michelucci report are incorporated into the final building plans and followed during construction.

Mitigation Measure 14 in Section 6.a.i. has been included to ensure the recommendations from the Michelucci report and its subsequent updates are implemented, thus ensuring that impacts are less than significant.

Source: Project Plans, Project Location, San Mateo County Hazards Maps, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016), Michelucci & Associates, Inc. Geotechnical and Geologic Investigation Update (dated August 29, 2017), Michelucci & Associates, Inc. Response to Steven R. King, Ph.D, October 22, 2017 Memo (dated November 22, 2017).

6.b.	Result in significant soil erosion or the loss of topsoil?		X		
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Discussion: Pursuant to the discussion in Section 6.a.v. regarding the soil conditions of the project site, the mitigation measures in Sections 3.b., 3.f., and 4.a., and the following mitigation measure are included to control erosion during both project construction activities. With these mitigation measures, the project impact will be less than significant.

Mitigation Measure 15: Prior to the issuance of the building permit for the proposed project, the applicant shall submit to the Planning Department and the Department of Public Works, for review and approval, erosion and drainage control plans that show how the transport and discharge of soil and pollutants from and within the project site will be minimized. The plans shall be designed to minimize potential sources of sediment, control the amount of runoff and its ability to carry sediment by diverting incoming flows and impeding internally generated flows, and retain sediment that is picked up on the project site through the use of sediment-capturing devices. The plans shall also limit application, generation, and migration of toxic substances, ensure the proper storage and disposal of toxic materials, and apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface waters. Said plan shall adhere to the San Mateo Countywide Stormwater Pollution Prevention Program "General Construction and Site

Supervision Guidelines," including:

- a. Sequence construction to install sediment-capturing devices first, followed by runoff control measures and runoff conveyances. No construction activities shall begin until after all proposed measures are in place.
- b. Minimize the area of bare soil exposed at one time (phased grading).
- c. Clear only areas essential for construction.
- d. Within five (5) days of clearing or inactivity in construction, stabilize bare soils through either non-vegetative Best Management Practices (BMPs), such as mulching, or vegetative erosion control methods, such as seeding. Vegetative erosion control shall be established within two (2) weeks of seeding/planting.
- e. Construction entrances shall be stabilized immediately after grading and frequently maintained to prevent erosion and to control dust.
- f. Control wind-born dust through the installation of wind barriers such as hay bales and/or sprinkling.
- g. Soil and/or other construction-related material stockpiled on-site shall be placed a minimum of 200 feet, or to the extent feasible, from all wetlands and drain courses. Stockpiled soils shall be covered with tarps at all times of the year.
- h. Intercept runoff above disturbed slopes and convey it to a permanent channel or storm drains by using earth dikes, perimeter dikes or swales, or diversions. Use check dams where appropriate.
- i. Provide protection for runoff conveyance outlets by reducing flow velocity and dissipating flow energy.
- j. Use silt fence and/or vegetated filter strips to trap sediment contained in sheet flow. The maximum drainage area to the fence should be 0.5 acres or less per 100 feet of fence. Silt fences shall be inspected regularly and sediment removed when it reaches 1/3 the fence height. Vegetated filter strips should have relatively flat slopes and be vegetated with erosion-resistant species.
- k. Throughout the construction period, the applicant shall conduct regular inspections of the condition and operational status of all structural BMPs required by the approved erosion control plan.
- l. No erosion or sediment control measures will be placed in vegetated areas.
- m. Environmentally-sensitive areas shall be delineated and protected to prevent construction impacts.
- n. Control of fuels and other hazardous materials, spills, and litter during construction.
- o. Preserve existing vegetation whenever feasible.

Source: Project Plans, Project Location, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016), Michelucci & Associates, Inc. Geotechnical and Geologic Investigation Update (dated August 29, 2017), Michelucci & Associates, Inc. Response to Steven R. King, Ph.D, October 22, 2017 Memo (dated November 22, 2017), San Mateo Countywide Stormwater Pollution Prevention Program.

6.c.	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, severe erosion, liquefaction or collapse?		X		
Discussion: Pursuant to the discussions in Sections 3.b., 4.a., and 6.a., their associated mitigation measures will assure that the proposed project does not result in on- or off-site landslide, lateral spreading, subsidence, severe erosion, liquefaction, or collapse. Therefore, these mitigation measures will assure that the project impact will be less than significant. Source: Project Plans, Project Location, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016), Michelucci & Associates, Inc. Geotechnical and Geologic Investigation Update (dated August 29, 2017), Michelucci & Associates, Inc. Response to Steven R. King, Ph.D, October 22, 2017 Memo (dated November 22, 2017).					
6.d.	Be located on expansive soil, as noted in the 2010 California Building Code, creating significant risks to life or property?				X
Discussion: The project geotechnical report concludes that the project parcel is not located on expansive soils. Thus, the project poses no impact. Source: Project Location, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016).					
6.e.	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X
Discussion: The proposed residence will have sanitary sewer service connections from the Montara Water and Sanitary District and therefore does not require or include any septic tanks or wastewater disposal systems. Thus, the project poses no impact. Source: Project Plans, Project Location, County GIS Maps, Montara Water and Sanitary District.					

7. CLIMATE CHANGE. Would the project:				
	Potentially Significant Impacts	Significant Unless Mitigated	Less Than Significant Impact	No Impact
7.a. Generate greenhouse gas (GHG) emissions (including methane), either directly or indirectly, that may have a significant impact on the environment?		X		
Discussion: Greenhouse Gas Emissions (GHG) include hydrocarbon (carbon monoxide; CO₂) air emissions from vehicles and machines that are fueled by gasoline. Project-related grading and construction of the proposed residence will result in the temporary generation of GHG emissions along travel routes and at the project site. In general, construction involves GHG emissions mainly from exhaust from vehicle trips (e.g., construction vehicles and personal vehicles of construction workers). Even assuming construction vehicles and workers are based in and traveling from urban areas, the potential project GHG emission levels from construction would be considered minimal. Although the project scope is not likely to generate significant amounts of greenhouse gases, the mitigation measure is provided in Section 3.b. to ensure that any impacts are less than significant. Source: Project Plans, Project Location.				
7.b. Conflict with an applicable plan (including a local climate action plan), policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				X
Discussion: The proposed project does not conflict with the County of San Mateo Energy Efficiency Climate Action Plan (EECAP). Source: Project Plans, 2013 San Mateo County Energy Efficiency Climate Action Plan.				
7.c. Result in the loss of forestland or conversion of forestland to non-forest use, such that it would release significant amounts of GHG emissions, or significantly reduce GHG sequestering?				X
Discussion: The project parcel is not considered forest land, nor does it host any such forest canopy. Therefore, the project poses no impact. Source: Project Plans, Project Location, County GIS Maps.				
7.d. Expose new or existing structures and/or infrastructure (e.g., leach fields) to accelerated coastal cliff/bluff erosion due to rising sea levels?		X		
Discussion: The discussion in Section 6.a.v. acknowledges the conditions of the project parcel and surrounding area and potential impacts related to coastal bluff erosion. The Michelucci report and subsequent updated reports concluded that the most conservative average retreat rate of the				

adjacent coastal bluffs is 0.73 feet per year, resulting in 62 years before the bluffs reach the closest point of the proposed residence. Additional calculations, which Michelucci believes is more accurate, determined the average retreat rate to range from 0.40 to 0.78 feet per year, concluding that the ocean bluffs would reach the western property line, western building setback line, and closest point of the proposed residence in approximately 38, 76, and 99 years, respectively. Michelucci notes that these calculated rates of bluff retreat are based on an assumed constant retreat rate as ocean bluff failures occur episodically and not uniformly through time. Therefore, the measured/calculated rates of retreat must be assumed to be indicative and not strictly representative of long-term rates. Conclusively, Michelucci stated that the proposed project can be developed as planned provided that their recommendations are implemented. Mitigation Measure 12 in Section 6.a.i. was provided to ensure that these recommendations are implemented to ensure that impacts are less than significant.

Furthermore, the EECAP dedicates substantive discussion around the issues of rising sea levels. While the project parcel is located on the flat top of a coastal bluff, at an elevation of approximately 50 feet above sea level, projected rising sea levels would be expected to contribute to greater erosion to the non-hardened shoreline cliffs from higher wave activity. With the LCP's requirement that the integrity along coastal bluff sites meet a minimum of 50 years, the EECAP projects rising sea levels to increase (based on estimates from 2050 to 2100) an average of about 27 inches along the County's coastline. The project includes no leach fields or other new infrastructure within this area. Therefore, the projected sea rise and associated erosion occurring to the bluff face should not impact the project development in the cited 50-year time frame. Based on these findings and with Mitigation Measures 1, 14, and 15, potential impacts will be less than significant.

Source: Project Plans, Project Location, San Mateo County Hazards Maps, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016), Michelucci & Associates, Inc. Geotechnical and Geologic Investigation Update (dated August 29, 2017), Michelucci & Associates, Inc. Response to Steven R. King, Ph.D, October 22, 2017 Memo (dated November 22, 2017), 2013 County Energy Efficiency Climate Action Plan, County Local Coastal Program.

7.e. Expose people or structures to a significant risk of loss, injury or death involving sea level rise?		X		
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Discussion: Pursuant to the discussion in Section 7.d., the projected sea rise along this portion of the County coastline will not pose a significant risk to the proposed residence and people (i.e., future residents and their guests) to a significant risk of loss, injury, or death that involves sea level rise. With the mitigation measures cited in that discussion, the project impact will be less than significant.

Source: Project Plans, Project Location, 2013 County Energy Efficiency Climate Action Plan.

7.f. Place structures within an anticipated 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?			X	
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Discussion: The project parcel is not located in an anticipated 100-year flood hazard area as mapped by the Federal Emergency Management Agency (FEMA). The project parcel is located in FEMA Flood Zone X, which is considered a minimal flood hazard (Panel No. 06081C0119F, effective August 2 2017). FEMA Flood Zone X areas have a 0.2% annual chance of flooding, with areas with 1% annual chance of flooding with average depths of less than 1 foot. The FEMA flood

Designation for the coast, just beyond the coastal bluffs, is Flood Zone VE which covers coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones. The Zone VE designated area west of the project parcel has a base flood elevation of 29 feet. The project parcel is at an elevation of approximately 50 feet above the mean sea level, with the closest point of the proposed residence set back approximately 70 feet from the bluff edge. Therefore, the project impact would be less than significant.

Source: Project Plans, Project Location, County GIS Maps, Federal Emergency Management Agency Flood Insurance Rate Map 06081C0119F, effective August 2 2017.

7.g. Place within an anticipated 100-year flood hazard area structures that would impede or redirect flood flows?

X

Discussion: The project parcel is not located in an anticipated 100-year flood hazard area as mapped by FEMA. Pursuant to the discussion in Section 7.f. and given the topography of the project parcel and surrounding area, the project poses no impact.

Source: Project Location, County GIS Maps, Federal Emergency Management Agency Flood Insurance Rate Map 06081C0119F, effective August 2 2017.

8. HAZARDS AND HAZARDOUS MATERIALS. Would the project:

	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
8.a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (e.g., pesticides, herbicides, other toxic substances, or radioactive material)?				X

Discussion: The project does not involve the use, transport, or disposal of hazardous materials.

Source: Project Plans.

8.b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

X

Discussion: The use of hazardous materials is not proposed for this project.

Source: Project Plans.

8.c.	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
Discussion: The emission of hazardous materials, substances, or waste is not proposed for this project. The project parcel is also not located within one-quarter mile of an existing or proposed school. Source: Project Plans, Project Location.					
8.d.	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
Discussion: The project site is not included on a list of hazardous materials compiled pursuant to Government Code Section 65962.5 and therefore would not result in the creation of a significant hazard to the public or the environment. Source: Project Location, California Department of Toxic Substances Control.					
8.e.	For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area?				X
Discussion: The project parcel is located approximately 2,500 feet (0.47 miles) northwest of the northerly boundary of the Half Moon Bay Airport, a public airport operated by the County Department of Public Works. Development within certain proximities of the airport are regulated by applicable policies and requirements of the Final Half Moon Bay Airport Land Use Compatibility Plan (ALUCP), as adopted by the City/County Association of Governments (C/CAG) on October 9, 2014. The overall objective of the ALUCP safety compatibility guidelines is to minimize the risks associated with potential aircraft accidents for people and property on the ground in the event of an aircraft accident near an airport and to enhance the chances of survival of the occupants of an aircraft involved in an accident that occurs beyond the runway environment. The ALUCP has safety zone land use compatibility standards that restrict land use development that could pose particular hazards to the public or to vulnerable populations in case of an aircraft accident. The project site is located in the Airport Influence Area (Runway Safety Zone 2), the Inner Approach/Departure Zone (IADZ), where accident risk level is considered to be high encompassing approximately 10 percent of general aviation aircraft accidents. The IADZ Zone prohibits residential land uses except for very low residential and infill in developed areas. Pursuant to Section 4.2.2.3 of the ALUCP, the project parcel meets all the criteria for infill development, thus allowing the residential use to occur even if the land use is prohibited in the IADZ Zone. Additionally, the proposed residential use complies with the other IADZ Zone development conditions in the Safety Criteria Matrix of the ALUCP such as locating the structure a maximum distance from extended runway centerline and maintaining a less than 35-ft. building height. The proposed residence will					

have a maximum height of 24'-3 7/8" and be located 21 feet from the front property line, the northern most location, while still being in compliance with the zoning setbacks and setbacks for the scenic easements.

Based on the discussion above, staff has determined that the proposed project complies with the safety compatibility criteria and poses no impact.

Source: Project Plans, Project Location, 2014 Final Half Moon Bay Airport Land Use Compatibility Plan.

8.f. For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area?

X

Discussion: Pursuant to the discussion in Section 8.e., the proposed project poses no impact.

Source: Project Plans, Project Location, 2014 Final Half Moon Bay Airport Land Use Compatibility Plan.

8.g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

X

Discussion: The proposed project will be located on a privately-owned parcel where all improvements will be located within the parcel boundaries. The proposed residence will have direct access from Arbor Lane, a public maintained street. The proposed project would not impede, change, or close any roadways that could be used for emergency purposes. All roads would remain unchanged. Therefore, the project poses no impact.

Source: Project Plans, Project Location, County GIS Maps.

8.h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

X

Discussion: The project site is not located within a Fire Hazard Severity Zone (State Responsibility Area). The project was reviewed by the Coastsides Fire Protection District (CFPD) and received conditional approval subject to compliance with the California Building Code for hard wired smoke detectors, an automatic fire sprinkler system, and ignition resistant construction and materials, among other fire prevention requirements. No further mitigation, beyond compliance with the standards and requirements of the CFPD are necessary. Thus, the project poses no impact.

Source: Project Location, California State Fire Severity Zones Maps, Coastsides Fire Protection District.

8.i.	Place housing within an existing 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
Discussion: The project parcel is not located in such an area. Source: Project Plans, County GIS Maps, Federal Emergency Management Agency Flood Insurance Rate Map 06081C0119F, effective August 2 2017.					
8.j.	Place within an existing 100-year flood hazard area structures that would impede or redirect flood flows?				X
Discussion: As discussed in Section 7.f., the project site is located in Flood Zone X, an area of minimal flood hazard. The project would not place structures within a 100-year flood hazard area as the project site is not located within a flood hazard zone that will be inundated by a 100-year flood. Source: Project Plans, County GIS Maps, Federal Emergency Management Agency Flood Insurance Rate Map 06081C0119F, effective August 2 2017.					
8.k.	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
Discussion: In addition to the discussion Section 8.j., no dam or levee is located in close proximity to the project parcel, therefore there is no risk of flooding onto this parcel due to failure of a dam or levee. Source: Project Plans, Project Location, County GIS Maps, San Mateo County Hazards Maps.					
8.l.	Inundation by seiche, tsunami, or mudflow?			X	
Discussion: The project parcel is not located within a San Mateo County General Plan tsunami and seiche inundation area. According to the California Office of Emergency Services Tsunami Inundation Map for Emergency Planning, the southwestern corner of the project parcel is located within a tsunami inundation area. However, this inundation map was prepared to assist cities and counties in identifying their tsunami hazard areas and only for local jurisdictional, coastal evacuation planning uses only. The inundation map represents the maximum considered tsunami run up from a number of extreme, yet realistic, tsunami sources (i.e., "worst-case" scenarios) and therefore cannot be used for making land-use decisions. The inundation map also does not reflect the abrupt shift in elevation at the top of the coastal bluff where the proposed residence will be located, approximately 50 feet above sea level. There are also no recorded tsunamis in the Half Moon Bay area since 1812 with a height greater than 14 feet. Further, in an email correspondence dated April 20, 2018, the project geologist, Dexter F. Hoexter, from Michelucci, provided a response stating the only scenario that may cause inundation would be if the proposed residence blocks a narrow flow channel which would result in adjacent tsunami flow being forced around the obstruction at a higher elevation than if the channel was not blocked. Hoexter stated that since the proposed residence will sit atop the coastal bluff on a flat, wide area, any postulated tsunami flow at this location would be minimal in volume and flow around the building. The height of the flow would not significantly increase due to					

the proposed residence and there will be ample space available to accommodate the flow around the structure. Based on these findings, the project poses a less than significant impact.

Source: Project Plans, Project Location, San Mateo County General Plan Natural Hazards Map, California Emergency Management Agency Tsunami Inundation Map for Emergency Planning (dated June 15, 2009), 1812-2012 California Department of Conservation Historic Tsunamis in California Chart, Email Correspondence from David F. Hoexter of Michelucci & Associates, Inc. (dated April 20, 2018).

9. HYDROLOGY AND WATER QUALITY. Would the project:

	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
9.a. Violate any water quality standards or waste discharge requirements (consider water quality parameters such as temperature, dissolved oxygen, turbidity and other typical stormwater pollutants (e.g., heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash))?			X	
Discussion: The proposed project has the potential to generate polluted stormwater runoff during site grading and construction-related activities. The permanent project will be required to comply with the County's Drainage Policy requiring post-construction stormwater flows to be at, or below, pre-construction flow rates. A drainage report was prepared by Berry & Associates, dated August 24, 2017, detailing the proposed drainage system. The proposed system will accommodate the proposed residence, driveway, and hardscape features, and ensure pre-construction runoff levels are maintained. The proposed tight-line system will collect roof and surrounding hardscape runoff which will connect to an on-site retention facility with an energy reduction box and cleanout and overflow pipe. The drainage report states that the system was designed to capture and store the increased runoff from the residence and allow infiltration into the subgrade. In the event of intense runoff (i.e., greater than a 100-year storm), the overflow will bubble out and dissipate within the flat area at the west side of the project site. The runoff will be further reduced with a pervious driveway that will allow direct infiltration into the soil. The proposed project, including the discussed drainage report and plans, were reviewed and approved by the Department of Public Works. Based on these findings, the project impact will be less than significant. Source: Project Plans, Project Location, County GIS Maps, Berry & Associates Drainage Report (dated August 24, 2017).				
9.b. Significantly deplete groundwater supplies or interfere significantly with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a			X	

level which would not support existing land uses or planned uses for which permits have been granted)?				
Discussion: In order to evaluate the geotechnical engineering characteristics of the soil layers underlying the project site, the Michelucci report (discussed in Section 6.a.i.) discussed the three borings drilled on the project parcel. Groundwater was encountered in Boring 1 at about 40.5 feet below grade and in Boring 2 at about 49 feet below grade at the time of the drilling. Michelucci also reviewed the available data on the previously excavated well and found that stabilized water in the well was measured at 38 feet after it was drilled. Michelucci notes that water levels tend to fluctuate seasonally and could rise to shallowed depths in the future. Although groundwater was encountered, the proposed project is not expected to deplete any groundwater supplies or interfere with groundwater recharge as the proposed residence will receive water and sanitary sewer services from the Montara Water and Sanitary District. The existing well will also be capped and formally abandoned as required by the County Environmental Health Division. Thus, the project will have a less than significant impact. Source: Project Plans, Project Location, County GIS Maps, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016).				
9.c. Significantly alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in significant erosion or siltation on- or off-site?		X		
Discussion: The proposed project does not involve the alteration of the course of a stream or river. Dean Creek, an intermittent creek, is located at the bottom of a steep gully south of the project site. Water flows through Dean Creek from the east and deposits into Kelp Cove in the Fitzgerald Marine Reserve. The project parcel is at an elevation of approximately 50 feet above sea level while the survey flow line of Dean Creek is at 22 feet above sea level at the toe of the creek and 12 feet above sea level at the toe of the cliff. Furthermore, the proposed development on the project parcel will include drainage features that have been approved by the Department of Public Works. With Mitigation Measures 1, 2, and 15 to address potential impacts during construction activities, the project will have a less than significant impact. Source: Project Plans, Project Location, County GIS Maps, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015), Department of Public Works.				
9.d. Significantly alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or significantly increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?		X		
Discussion: Pursuant to the discussion in Section 9.c. and the cited mitigation measure, the proposed project will have a less than significant impact. Source: Project Plans, Project Location, County GIS Maps, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015), Department of Public Works.				

9.e.	Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide significant additional sources of polluted runoff?			X	
Discussion: Pursuant to the discussion in Section 9.a., the proposed project will have a less than significant impact. Source: Project Plans, Project Location, County GIS Maps, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015), Department of Public Works.					
9.f.	Significantly degrade surface or ground-water water quality?			X	
Discussion: Pursuant to Section 9.b., no degradation of surface or groundwater water quality is expected. Thus, the project poses a less than significant impact. Source: Project Plans, Project Location, County GIS Maps, Michelucci & Associates, Inc. Geotechnical and Geologic Investigation (dated July 6, 2016).					
9.g.	Result in increased impervious surfaces and associated increased runoff?		X		
Discussion: Pursuant to the discussion in Section 9.c. and the cited mitigation measure, the proposed project will have a less than significant impact. Source: Project Plans, Project Location, County GIS Maps, Kopitov Environmental LLC Biological Resources Assessment (dated May 9, 2015), Department of Public Works.					

10. LAND USE AND PLANNING. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
10.a.	Physically divide an established community?			X
Discussion: The proposed single-family residence will infill within an urban area surrounded by existing single-family residential uses. The project parcel is the last parcel left to be developed on Arbor Lane. The project does not include a proposal to divide lands or include development that would result in the division of an established community. Source: Project Plans.				

10.b.	Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X
Discussion: The proposed project has been reviewed for conformance and is not in conflict with any applicable policies of the County Local Coastal Program and applicable R-1, S-17, and design review zoning regulations as discussed in Section 1.f. With the project proposed pursuant to the project plans recommended for approval by the CDRC, the project poses no impact. Source: Project Plans, County General Plan, County Midcoast DR Standards, County Zoning Regulations.					
10.c.	Conflict with any applicable habitat conservation plan or natural community conservation plan?		X		
Discussion: The project site is not located in an area with a habitat conservation or natural community conservation plan. As discussed in Section 4.f., the project site is located within the Fitzgerald Marine Reserve. However, the project, as proposed with the mitigation measures in Sections 4.a., 4.c., and 4.d., will not adversely affect the Reserve and therefore the impact will be less than significant. Source: Project Plans, Project Location, 2002 Final Fitzgerald Marine Reserve Master Plan.					
10.d.	Result in the congregating of more than 50 people on a regular basis?				X
Discussion: With the project comprised of the construction of one single-family residence, it is not expected that their occupancy capacity would result in the congregating of over 50 people on a regular basis. Therefore, the project poses no impact. Source: Project Plans, Project Location.					
10.e.	Result in the introduction of activities not currently found within the community?				X
Discussion: The proposed residence will not result in the introduction of activities not already found within the community. The project site is surrounded by similar single-family residential development to the north, east, and south. Therefore, the project poses no such impact. Source: Project Plans, Project Location, County Zoning Regulations, County Midcoast DR Standards, Coastsides Design Review Committee Recommendation Letter (dated November 9, 2017).					

10.f.	Serve to encourage off-site development of presently undeveloped areas or increase development intensity of already developed areas (examples include the introduction of new or expanded public utilities, new industry, commercial facilities or recreation activities)?				X
Discussion: The proposed project is to construct a new single-family residence completely within the parcel boundaries. The proposed residence will be infilling into an urban area surrounded by existing residential uses. Furthermore, the project parcel is the last parcel on Arbor Lane available to be developed as the adjacent vacant parcel is owned by the neighborhood's homeowner's association and was deemed "not a building site" in the 1972 Cypress Cliffs Subdivision, the subdivision that created the Arbor Lane neighborhood including the subject parcel. The proposed project will not serve to encourage off-site development of undeveloped areas or increase the development intensity of surrounding developed areas. Therefore, the project poses no impact. Source: Project Plans, Project Location, County GIS Maps, 1972 Cypress Cliffs Subdivision Map.					
10.g.	Create a significant new demand for housing?				X
Discussion: The proposed project does not create any new demand for housing and, thus, poses no impact. Source: Project Plans, Project Location.					

11. MINERAL RESOURCES. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
11.a.	Result in the loss of availability of a known mineral resource that would be of value to the region or the residents of the State?			X
Discussion: The proposed project neither involves nor results in any extraction or loss of mineral resources. Therefore, the project poses no impact. Source: Project Plans.				

11.b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X
Discussion: There are no known mineral resources on the project parcel, therefore, the proposed project will not result in the loss of availability of a locally important mineral resource recovery site as delineated on a local general plan, specific plan, or other land use plan. Source: Project Plans.				

12. NOISE. Would the project result in:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
12.a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
Discussion: The proposed project would not produce any long-term audible noise. However, the project will generate short-term noise associated with grading and construction activities. The short-term noise during grading and construction activities will be temporary, where volume and hours are regulated by Section 4.88.360 (<i>Exemptions</i>) of the San Mateo County Ordinance Code for Noise Control. While the proposed project is expected to produce minimal noise, the following mitigation measure is recommended to limit any potential impacts to a less than significant level: Mitigation Measure 16: Noise sources associated with demolition, construction, repair, remodeling, or grading of any real property shall be limited to the hours from 7:00 a.m. to 6:00 p.m., weekdays and 9:00 a.m. to 5:00 p.m., Saturdays. Said activities are prohibited on Sundays, Thanksgiving, and Christmas (San Mateo Ordinance Code Section 4.88.360). Noise levels produced by construction activities shall not exceed the 80-dBA level at any one moment. Source: Project Plans, Project Location, San Mateo County Ordinance.				
12.b. Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?		X		
Discussion: Exposure of persons to or generation of excessive ground-borne vibration or noise levels is expected during construction activities. Mitigation Measure 16 in Section 12.a. is provided to ensure that the impact is less than significant. Source: Project Plans, Project Location, San Mateo County Ordinance.				

12.c. A significant permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
Discussion: A temporary increase in ambient noise levels during construction activities is expected. Otherwise, increased permanent ambient noise levels will be minimal as it would be limited to the typical noise generated from a single-family residence. Therefore, the project poses a less than significant impact. Source: Project Plans, Project Location.				
12.d. A significant temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
Discussion: Pursuant to the discussion in Section 12.c., the project poses a less than significant impact. Source: Project Plans, Project Location.				
12.e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, exposure to people residing or working in the project area to excessive noise levels?			X	
Discussion: The project parcel is located approximately 0.47 miles northwest of the northerly boundary of the Half Moon Bay Airport, a public airport operated by the County Department of Public Works. The project parcel is not located within the airport's noise exposure contours designated as "Extremely noise-sensitive areas," an area where the airport-generated noise levels are less than 60 CNEL (Community Noise Equivalent Level; a weighted average of noise level over time). Thus, people residing or working in the project area will not be exposed to excessive noise levels. Therefore, the project poses a less than significant impact. Source: Project Plans, Project Location, 2014 Final Half Moon Bay Airport Land Use Compatibility Plan.				
12.f. For a project within the vicinity of a private airstrip, exposure to people residing or working in the project area to excessive noise levels?				X
Discussion: As discussed in Sections 8.e. and 12.e., the project parcel is located within the vicinity of the Half Moon Bay Airport, a public-operated airport. In addition, there are no known privately owned or operated airstrips within close proximity to the project site. Source: Project Plans, Project Location, 2014 Final Half Moon Bay Airport Land Use Compatibility Plan.				

13. POPULATION AND HOUSING. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
13.a. Induce significant population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
Discussion: The improvements associated with the proposed project are completely within the project parcel's boundaries and are only sufficient to serve the proposed single-family residence. The additional population of the future occupants of the proposed residence will not be significant, nor would the proposed development induce any significant population growth or necessitate any additional or expanded roads or other infrastructure. Source: Project Plans, Project Location.				
13.b. Displace existing housing (including low- or moderate-income housing), in an area that is substantially deficient in housing, necessitating the construction of replacement housing elsewhere?				X
Discussion: The proposed residence will be located on an undeveloped parcel, therefore, no existing housing will be displaced. Additionally, the Midcoast area is not an area that has been designated as substantially deficient in housing. Therefore, the project poses no impact. Source: Project Plans, Project Location, County General Plan.				

14. PUBLIC SERVICES. Would the project result in significant adverse physical impacts associated with the provision of new or physically altered government facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
14.a. Fire protection?				X
14.b. Police protection?				X
14.c. Schools?				X
14.d. Parks?				X
14.e. Other public facilities or utilities (e.g.,				X

hospitals, or electrical/natural gas supply systems)?				
Discussion: The proposed project is to construct a single-family residence in an area characterized by other single-family residential uses. The proposed project does not involve and is not associated with the provision of new or physically altered government facilities, nor will it generate a need for an increase in any such facilities. The project will not disrupt acceptable service ratios, response times or performance objectives of fire (Coastside Fire Protection District has reviewed the plans), police, schools, parks, or any other public facilities or energy supply systems. Therefore, the project poses no impact. Source: Project Plans, Project Location, Coastside Fire Protection District.				

15. RECREATION. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
15.a. Increase the use of existing neighborhood or regional parks or other recreational facilities such that significant physical deterioration of the facility would occur or be accelerated?			X	
Discussion: The proposed single-family residence includes four bedrooms and four bathrooms, expected to serve the future occupants of the residence and their visitors. The impacts of this proposed project on the increase of use of neighborhood or regional parks or other recreational facilities would be less than significant, nor is significant physical deterioration of any such facilities expected to occur or be accelerated. Source: Project Plans, Project Location.				
15.b. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X
Discussion: The project does not include the construction or expansion of recreational facilities. Source: Project Plans.				

16. TRANSPORTATION/TRAFFIC. Would the project:				
	Potentially Significant Impacts	Significant Unless Mitigated	Less Than Significant Impact	No Impact
16.a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?			X	
Discussion: As discussed in previous sections, all proposed development will occur completely on the subject privately owned parcel. The proposed development will provide compliant standard and emergency access to the project parcel. Policy 2.52 (<i>Traffic Mitigation for all Development in the Urban Midcoast</i>) of the County LCP exempts the development of single-family dwellings from the development and implementation of a traffic impact analysis and mitigation plan. The future trips (comprised of both owners of and guests/visitors to) generated by a single-family residence will not introduce any significant increase in vehicles on affected streets (i.e., Arbor Lane, Wienke Way, Cabrillo Highway) and, thus, will pose no significant safety impact to other vehicles, pedestrians, or bicycles. Access from Arbor Lane has been reviewed by both the County Department of Public Works and the Coastsides Fire Protection District, who have concluded that such access complies with their respective policies and requirements. Therefore, the project poses a less than significant impact. Source: Project Plans, Project Location, County Department of Public Works, Coastsides Fire Protection District, County Local Coastal Program.				
16.b. Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways?			X	
Discussion: Pursuant to the discussion in Section 16.a., the project poses a less than significant impact. Source: Project Plans, Project Location, County Local Coastal Program.				

16.c.	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in significant safety risks?				X
Discussion: The project does not include any element which would result in changes to air traffic patterns. Source: Project Plans, Project Location.					
16.d.	Significantly increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
Discussion: The proposed project does not include any incompatible uses or impacts related to a design feature. A private driveway will be installed and provide vehicular access from Arbor Lane to the proposed residence. Source: Project Plans, Project Location.					
16.e.	Result in inadequate emergency access?				X
Discussion: Upon review of the proposed project, the Coastsides Fire Protection District has conditionally approved the proposed access to the residence including adequate emergency access. Thus, the project poses no impact. Source: Project Plans, Coastsides Fire Protection District.					
16.f.	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?			X	
Discussion: Pursuant to the discussion in Section 16.a., the project poses a less than significant impact. Source: Project Plans, Project Location, County Local Coastal Program.					
16.g.	Cause noticeable increase in pedestrian traffic or a change in pedestrian patterns?			X	
Discussion: The project will not cause a significant increase in pedestrian traffic, nor will it generally change pedestrian patterns around the project site. Therefore, the project poses a less than significant impact. Source: Project Plans, Project Location.					

16.h. Result in inadequate parking capacity?				X
Discussion: Pursuant to Section 6119 (<i>Parking Spaces Required</i>) of the County Zoning Regulations, two covered parking spaces are required for dwelling units having two or more bedrooms. The proposed four-bedroom residence will include an attached two-car garage. Two uncovered tandem parking spaces are also available in the proposed driveway. The proposed project has compliant parking and thus poses no impact. Source: Project Plans, County Zoning Regulations.				

17. TRIBAL CULTURAL RESOURCES. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
17.a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)				X
Discussion: The project site is not listed or eligible for listing in the California Register of Historical Resources. Furthermore, the project is not listed in a local register of historical resources, pursuant to any local ordinance or resolution as defined in Public Resources Code Section 5020.1(k). Source: Project Location, California Register of Historical Resources, County General Plan.				

ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Subdivision (c) of Public Resources Code Section 5024.1. (In applying the criteria set forth in Subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.)		X		
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Discussion: The project is not subject to Assembly Bill 52 for California Native American tribal consultation requirements, as no traditionally or culturally affiliated tribe has requested, in writing, to the County to be informed of proposed projects in the geographic project area. However, a "Sacred Lands File and Native American Contacts List Request" was sent to the Native American Heritage Council (NAHC), but as of the date of preparation of this document, no response has been received. Therefore, while the project is not expected to cause a substantial adverse change to any potential tribal cultural resources, the following mitigation measures are recommended to minimize any potential significant impacts to unknown tribal cultural resources:

Mitigation Measure 17: Should any traditionally or culturally affiliated Native American tribe respond to the County's issued notification for consultation, such process shall be completed and any resulting agreed upon measures for avoidance and preservation of identified resources be taken prior to implementation of the project.

Mitigation Measure 18: In the event that tribal cultural resources are inadvertently discovered during project implementation, all work shall stop until a qualified professional can evaluate the find and recommend appropriate measures to avoid and preserve the resource in place, or minimize adverse impacts to the resource, and those measures shall be approved by the Current Planning Section prior to implementation and continuing any work associated with the project.

Mitigation Measure 19: Any inadvertently discovered tribal cultural resources shall be treated with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, protecting the cultural character and integrity of the resource, protecting the traditional use of the resource, and protecting the confidentiality of the resource.

Source: Project Plans, Project Location, Native American Heritage Commission, State Assembly Bill 52.

18. UTILITIES AND SERVICE SYSTEMS. Would the project:				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
18.a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
Discussion: The proposed residence will connect to and receive sewage services from the Montara Water and Sanitary District. The proposed project does not involve or require any water or wastewater treatment facilities that would exceed any requirements of the Regional Water Quality Control Board. Therefore, the project poses no impact. Source: Project Plans, Project Location, Montara Water and Sanitary District.				
18.b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
Discussion: Pursuant to the discussion in Section 18.a., the project poses no impact. Source: Project Plans, Project Location, Montara Water and Sanitary District.				
18.c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?		X		
Discussion: As discussed in Section 9.a., the proposed project has the potential to generate polluted stormwater runoff during site grading and construction-related activities, and the permanent project will be required to comply with the County's Drainage Policy requiring post-construction stormwater flows to be at, or below, pre-construction flow rates. The proposed drainage system design, reviewed and approved by the Department of Public Works, will accommodate the proposed residence, driveway, and hardscape features, and ensure pre-construction runoff levels are maintained. Based on these findings and with the Mitigation Measures 1, 2, and 15, the project impact is expected to be less than significant. Source: Project Plans, Project Location, County GIS Maps, Berry & Associates Drainage Report (dated August 24, 2017), Department of Public Works.				

18.d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
Discussion: The proposed residence will have adequate water service connections from the Montara Water and Sanitary District. Therefore, the project poses no impact. Source: Project Plans, Project Location, Montara Water and Sanitary District.				
18.e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
Discussion: The Montara Water and Sanitary District has indicated that they have adequate capacity to serve the project's sanitary sewerage demands. Therefore, the project poses no impact. Source: Project Plans, Project Location, Montara Water and Sanitary District.				
18.f. Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
Discussion: The construction of the proposed residence will generate some solid waste, both during construction and after completion (on an ongoing basis typical for that generated by residential uses). Similar to all other properties in the Midcoast area, the residence will receive municipal trash and recycling pick-up service by Recology. The County's local landfill facility is the Corinda Los Trancos (Ox Mountain) Landfill, located at 12310 San Mateo Road (State Highway 92), a few miles east of Half Moon Bay. This landfill facility has permitted capacity/service life until 2034. Therefore, the project impact is less than significant. Source: San Mateo County Environmental Health Division.				
18.g. Comply with Federal, State, and local statutes and regulations related to solid waste?			X	
Discussion: Solid waste generated by a new single-family residence is expected to be minimal. The project site will receive solid waste service by Recology. The landfill cited in Section 18.f. is licensed and operates pursuant to all Federal, State and local statutes and regulations as overseen by the San Mateo County Health System's Environmental Health Division. Therefore, the project impact will be less than significant. Source: San Mateo County Environmental Health Division.				

18.h. Be sited, oriented, and/or designed to minimize energy consumption, including transportation energy; incorporate water conservation and solid waste reduction measures; and incorporate solar or other alternative energy sources?			X	
Discussion: The proposed residence will utilize contemporary strategies for incorporating passive solar such as large south facing windows to provide passive solar heating within the house. The proposed two-car attached garage provides vehicular access directly onto Arbor Lane. Further, the proposed residence is required to comply with the California Building Code where building materials must meet minimum insulation and energy conservation requirements, and water conservation fixtures are required. Lastly, as discussed in Section 18.g., solid waste generation is expected to be minimal. Based on these findings, the project poses a less than significant impact. Source: Project Plans.				
18.i. Generate any demands that will cause a public facility or utility to reach or exceed its capacity?				X
Discussion: Pursuant to the discussions throughout Section 18., the proposed project will not cause a public facility or utility to reach or exceed its capacity. Therefore, the project poses no impact. Source: Project Plans, Project Location, San Mateo County Environmental Health Division, Montara Water and Sanitary District.				

19. MANDATORY FINDINGS OF SIGNIFICANCE.				
	<i>Potentially Significant Impacts</i>	<i>Significant Unless Mitigated</i>	<i>Less Than Significant Impact</i>	<i>No Impact</i>
19.a. Does the project have the potential to degrade the quality of the environment, significantly reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		X		

Discussion: The project, as proposed with all the recommended mitigation measures discussed in the previous sections, will ensure that potential impacts to special-status plant and wildlife species with the potential to occur within the project site and surrounding area, as well as all sensitive habitats including Dean Creek and the coastal bluffs, are less than significant.

Source: All Applicable Sources Previously Cited In This Document.

19.b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

X

Discussion: Based on the discussions in the previous sections where the project impact was determined to be less than significant or required mitigation measures to ensure a less than significant impact, the proposed project would not have impacts that are cumulatively considerable. This project will have a less than significant cumulative impact upon the environment and no evidence has been found that the project would result in broader regional impacts. There are also no known approved projects or future projects expected for the project parcel. Conclusively, this project does not introduce any significant impacts that cannot be avoided through mitigation.

Source: All Applicable Sources Previously Cited In This Document.

19.c. Does the project have environmental effects which will cause significant adverse effects on human beings, either directly or indirectly?

X

Discussion: As discussed in the previous sections, the proposed project is to construct a new single-family residence. Based on the discussions in the previous sections where the project impact was determined to be less than significant or required mitigation measures to ensure a less than significant impact, the proposed project would not cause significant adverse effects on human beings, either directly or indirectly.

Source: All Applicable Sources Previously Cited In This Document.

RESPONSIBLE AGENCIES. Check what agency has permit authority or other approval for the project.

AGENCY	YES	NO	TYPE OF APPROVAL
U.S. Army Corps of Engineers (CE)		X	
State Water Resources Control Board		X	
Regional Water Quality Control Board		X	
State Department of Public Health		X	

AGENCY	YES	NO	TYPE OF APPROVAL
San Francisco Bay Conservation and Development Commission (BCDC)		X	
U.S. Environmental Protection Agency (EPA)		X	
County Airport Land Use Commission (ALUC)		X	
Caltrans		X	
Bay Area Air Quality Management District		X	
U.S. Fish and Wildlife Service		X	
Coastal Commission		X	
City		X	
Sewer/Water District:		X	
Other: California Coastal Commission	X		Appeals jurisdiction

MITIGATION MEASURES		
	<u>Yes</u>	<u>No</u>
Mitigation measures have been proposed in project application.	X	
Other mitigation measures are needed.		X
The following measures are included in the project plans or proposals pursuant to Section 15070(b)(1) of the State CEQA Guidelines: Mitigation Measure 1: The applicant shall submit an Air Quality Best Management Practices Plan to the Planning and Building Department prior to the issuance of any grading permit "hard card" or building permit that, at a minimum, includes the "Basic Construction Mitigation Measures" as listed in Table 8-1 of the BAAQMD California Environmental Quality Act (CEQA) Guidelines (May 2011). The following Bay Area Air Quality Management District Best Management Practices for mitigating construction-related criteria air pollutants and precursors shall be implemented prior to beginning any grading and/or construction activities and shall be maintained for the duration of the project grading and/or construction activities: - All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. - All haul trucks transporting soil, sand, or other loose material off-site shall be covered. - All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. - All vehicle speeds on unpaved roads shall be limited to 15 miles per hour. - Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485, of California Code of Regulations). Clear signage shall be		

provided for construction workers at all access points.

- f. Roadways and building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- g. Idling times shall be minimized either by shutting equipment or vehicles off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485, of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
- h. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications.
- i. Minimize the idling time of diesel powered construction equipment to two minutes.
- j. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure 2: The applicant shall submit a dust control plan to the Planning Department for review and approval prior to the issuance of a building permit for the project. The approved plan shall be implemented for the duration of any grading, demolition, and construction activities that generate dust and other airborne particles. The plan shall include the following control measures:

- a. Water all active construction areas at least twice daily.
- b. Water or cover stockpiles of debris, soil, sand, or other materials that can be blown by the wind.
- c. Cover all trucks hauling soil, sand, and other loose materials, or require all trucks to maintain at least 2 feet of freeboard.
- d. Apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking, and staging areas at the construction sites. Also, hydroseed or apply non-toxic soil stabilizers to inactive construction areas.
- e. Sweep daily (preferably with water sweepers) all paved access roads, parking, and staging areas at the construction sites.
- f. Sweep adjacent public streets daily (preferably with water sweepers) if visible soil material is carried onto them.
- g. Enclose, cover, water twice daily, or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.).
- h. Limit traffic speeds on unpaved roads within the project parcel to 15 miles per hour (mph).
- i. Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- j. Replant vegetation in disturbed areas as quickly as possible.

Mitigation Measure 3: Within 48 hours prior to the onset of any project-related activities, a qualified biologist should conduct a pre-construction survey of the project area to ensure that no California red-legged frogs or San Francisco garter snakes are present. In addition, immediately prior to vegetation removal or other construction activities, a qualified biologist familiar with the habitat requirements of California red-legged frogs and San Francisco garter snakes shall conduct a pre-construction survey to determine whether any of these species is located within the project area.

Mitigation Measure 4: A minimum 3-ft. high exclusion fence shall be installed around the limits of

construction, including clearing, grading, and staging, unless otherwise directed by San Mateo County, United States Fish and Wildlife Service, or California Department of Fish and Wildlife, to create a barrier to prevent the California red-legged frog and San Francisco garter snake from entering the project site. No polymesh or similar materials shall be used as fencing materials. The fencing should be removed only when all construction equipment is removed from the project site. Fencing shall be inspected and any opening shall be repaired immediately. If openings are found, the project area shall be inspected by a biological monitor to ensure that special-status species have not entered the project area. The designated biological monitor may be a construction team manager or supervisor trained in the identification of special-status species.

Mitigation Measure 5: Vegetation or other materials shall not be stockpiled at the project site as it provides potential hiding areas for California red-legged frogs, San Francisco garter snakes, and other wildlife species. Vegetation shall be placed directly into a disposal container and removed from the construction area, as practicable. If vegetation is stockpiled on the ground, removal shall be conducted under the supervision of a qualified biologist.

Mitigation Measure 6: To avoid, minimize, and mitigate impacts to the California red-legged frogs, San Francisco garter snakes, and their respective habitats, a worker education program and/or education materials prepared by a qualified biologist shall be provided to all workers prior to onset of construction activities.

Mitigation Measure 7: If required by San Mateo County, California Department of Fish and Wildlife, or United States Fish and Wildlife Service, a biological monitor shall inspect the project area prior to the beginning of construction activities to ensure that the California red-legged frogs and San Francisco garter snakes have not entered the project area. The designated biological monitor may be a construction team manager or supervisor trained in the identification of special-status species.

Mitigation Measure 8: Under no circumstances should California red-legged frogs and San Francisco garter snakes be handled, relocated, or otherwise harmed or harassed at any time. San Mateo County, United States Fish and Wildlife Service, and California Department of Fish and Wildlife shall be notified immediately upon discovery of these species in the project site or surrounding area.

Mitigation Measure 9: Prior to the start of vegetation removal, a qualified biologist familiar with the San Francisco dusky-footed woodrat and its habitat requirements shall survey for their nests within or immediately adjacent to the potential habitat (i.e., poison oak scrub).

- a. If no nests are observed, no further mitigation is required.
- b. If nests are observed, but would not be directly impacted by construction activities, a qualified biologist shall establish a 10-ft. buffer around the nests using exclusion fencing to ensure that they are not accidentally destroyed by construction activities. Exclusion fencing shall remain in place until project completion.
- c. If a nest is observed within the vegetation clearing area, a qualified biologist shall disassemble the nest by hand and relocate and reconstruct the nest away from the construction area.

Mitigation Measure 10: If trees are removed or pruned, a qualified biologist shall conduct a pre-construction bat roost survey to determine if bats are present in the trees on or near the project parcel. If bats are detected, suitable measures to avoid and/or exclude bats shall be determined by the California Department of Fish and Wildlife.

Mitigation Measure 11: Where sediment and erosion control materials are installed, repaired, or removed (i.e., wattles, silt fences, etc.), a qualified biologist should check the work area to ensure that sensitive species are not present or entrapped. Polymesh and/or other similar materials should

not be used as these can entrap or snag reptiles, amphibians, or other small animals.

Mitigation Measure 12: If the construction activities coincide with the nesting bird season (February 1 to September 15), pre-construction nesting bird surveys shall be conducted by a California Department of Fish and Wildlife-approved biologist no more than 10 days prior to planned construction activities in order to locate nests within and adjacent to the proposed construction area. For all migratory bird species, the survey will include nesting birds within a 100-ft. radius from the project site.

- a. If no active nests are detected, construction activities may take place as scheduled.
- b. If an active nest is observed, the project shall be modified as necessary to avoid direct take of identified nest, eggs, and/or young. Modifications may include establishment of protective buffer as determined by a qualified biologist. Typical protective buffer zones are 50 feet for passerine nests and 250 feet for raptors. If construction activities are significantly impacted by the buffer zones, California Department of Fish and Wildlife shall be contacted to request a reduced buffer that would still protect nesting birds.

Mitigation Measure 13: In the event that should cultural, paleontological, or archaeological resources be encountered during site grading or other site work, such work shall immediately be halted in the area of discovery and the project sponsor shall immediately notify the Community Development Director of the discovery. The applicant shall be required to retain the services of a qualified archaeologist for the purpose of recording, protecting, or curating the discovery as appropriate. The cost of the qualified archaeologist and of any recording, protecting, or curating shall be borne solely by the project sponsor. The archaeologist shall be required to submit to the Community Development Director for review and approval a report of the findings and methods of curation or protection of the resources. No further grading or site work within the area of discovery shall be allowed until the preceding has occurred. Disposition of Native American remains shall comply with CEQA Guidelines Section 15064.5(e).

Mitigation Measure 14: The design of the proposed development (upon submittal of the building permit) on the subject parcel shall generally follow the recommendations cited in the Geotechnical and Geologic Investigation prepared by Michelucci & Associates, Inc. and its subsequent updates regarding seismic criteria, grading, drilled piers, slab-on grade construction, and surface drainage. Any such changes to the recommendations by the project geotechnical engineer cited in this report and subsequent updates shall be submitted for review and approval by the County's geotechnical engineer.

Mitigation Measure 15: Prior to the issuance of the building permit for the proposed project, the applicant shall submit to the Planning Department and the Department of Public Works, for review and approval, erosion and drainage control plans that show how the transport and discharge of soil and pollutants from and within the project site will be minimized. The plans shall be designed to minimize potential sources of sediment, control the amount of runoff and its ability to carry sediment by diverting incoming flows and impeding internally generated flows, and retain sediment that is picked up on the project site through the use of sediment-capturing devices. The plans shall also limit application, generation, and migration of toxic substances, ensure the proper storage and disposal of toxic materials, and apply nutrients at rates necessary to establish and maintain vegetation without causing significant nutrient runoff to surface waters. Said plan shall adhere to the San Mateo Countywide Stormwater Pollution Prevention Program "General Construction and Site Supervision Guidelines," including:

- a. Sequence construction to install sediment-capturing devices first, followed by runoff control measures and runoff conveyances. No construction activities shall begin until after all proposed measures are in place.
- b. Minimize the area of bare soil exposed at one time (phased grading).

- c. Clear only areas essential for construction.
- d. Within five (5) days of clearing or inactivity in construction, stabilize bare soils through either non-vegetative Best Management Practices (BMPs), such as mulching, or vegetative erosion control methods, such as seeding. Vegetative erosion control shall be established within two (2) weeks of seeding/planting.
- e. Construction entrances shall be stabilized immediately after grading and frequently maintained to prevent erosion and to control dust.
- f. Control wind-born dust through the installation of wind barriers such as hay bales and/or sprinkling.
- g. Soil and/or other construction-related material stockpiled on-site shall be placed a minimum of 200 feet, or to the extent feasible, from all wetlands and drain courses. Stockpiled soils shall be covered with tarps at all times of the year.
- h. Intercept runoff above disturbed slopes and convey it to a permanent channel or storm drains by using earth dikes, perimeter dikes or swales, or diversions. Use check dams where appropriate.
- i. Provide protection for runoff conveyance outlets by reducing flow velocity and dissipating flow energy.
- j. Use silt fence and/or vegetated filter strips to trap sediment contained in sheet flow. The maximum drainage area to the fence should be 0.5 acres or less per 100 feet of fence. Silt fences shall be inspected regularly and sediment removed when it reaches 1/3 the fence height. Vegetated filter strips should have relatively flat slopes and be vegetated with erosion-resistant species.
- k. Throughout the construction period, the applicant shall conduct regular inspections of the condition and operational status of all structural BMPs required by the approved erosion control plan.
- l. No erosion or sediment control measures will be placed in vegetated areas.
- m. Environmentally-sensitive areas shall be delineated and protected to prevent construction impacts.
- n. Control of fuels and other hazardous materials, spills, and litter during construction.
- o. Preserve existing vegetation whenever feasible.

Mitigation Measure 16: Noise sources associated with demolition, construction, repair, remodeling, or grading of any real property shall be limited to the hours from 7:00 a.m. to 6:00 p.m., weekdays and 9:00 a.m. to 5:00 p.m., Saturdays. Said activities are prohibited on Sundays, Thanksgiving, and Christmas (San Mateo Ordinance Code Section 4.88.360). Noise levels produced by construction activities shall not exceed the 80-dBA level at any one moment.

Mitigation Measure 17: Should any traditionally or culturally affiliated Native American tribe respond to the County's issued notification for consultation, such process shall be completed and any resulting agreed upon measures for avoidance and preservation of identified resources be taken prior to implementation of the project.

Mitigation Measure 18: In the event that tribal cultural resources are inadvertently discovered during project implementation, all work shall stop until a qualified professional can evaluate the find and recommend appropriate measures to avoid and preserve the resource in place, or minimize adverse impacts to the resource, and those measures shall be approved by the Current Planning Section prior to implementation and continuing any work associated with the project.

Mitigation Measure 19: Any inadvertently discovered tribal cultural resources shall be treated with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, protecting the cultural character and integrity of the resource, protecting the traditional use of the resource, and protecting the confidentiality of the resource.

DETERMINATION (to be completed by the Lead Agency).

On the basis of this initial evaluation:

I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Planning Department.

X

I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because of the mitigation measures in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.


(Signature)

Project Planner

(Title)

May 2, 2018

Date

CJM:jlh – CJMCC0193_WJH.DOCX

ATTACHMENTS

- A. Location Map
- B. 1972 Cypress Cliffs Subdivision Map
- C. Project Plans
- D. Coastsides Design Review Committee Letter for the November 9, 2017 Meeting
- E. California Coastal Commission Resolution No. 74-270
- F. Natural Resources Conservation Service Web Soil Survey- California Revised Storie Index
- G. Kopitov Environmental LLC Biological Resources Assessment, dated 5/9/15
- H. Coastal Ridge Ecology LLC Update to Biological Resources Assessment, dated October 2, 2017
- I. Coastal Ridge Ecology LLC Response to Comments on Update to Biological Resources Assessment, dated November 3, 2017
- J. San Mateo County General Plan Natural Hazards Map
- K. California Emergency Management Agency Tsunami Inundation Map for Emergency Planning, dated June 15, 2009
- L. 1812-2012 California Department of Conservation Historic Tsunamis in California Chart
- M. Michelucci & Associates, Inc. Geotechnical and Geologic Investigation, dated July 6, 2016
- N. Michelucci & Associates, Inc. Geotechnical and Geologic Investigation Update, dated August 29, 2017
- O. Michelucci & Associates, Inc. Response to Steven R. King, Ph.D, October 22, 2017 Memo, dated November 21, 2017
- P. Email Correspondence from David F. Hoexter of Michelucci & Associates, Inc. (dated April 20, 2018)
- Q. Federal Emergency Management Agency Flood Insurance Rate Map 06081C0119F, effective August 2 2017
- R. Berry & Associates Drainage Report, dated August 24, 2017



OWNER'S CERTIFICATE

WE HEREBY CERTIFY THAT WE ARE THE OWNERS OF, OR HAVE SOME RIGHT, TITLE OR INTEREST IN AND TO THE REAL PROPERTY INCLUDED WITHIN THE SUBDIVISION SHOWN UPON THIS MAP; AND THAT WE ARE THE ONLY PERSONS WHOSE CONSENT IS NECESSARY TO PASS A CLEAR TITLE TO SAID PROPERTY; AND WE CONSENT TO THE MAKING OF SAID MAP AND SUBDIVISION AS SHOWN WITHIN THE BLUE BORDER LINES. WE HEREBY DEDICATE TO THE PUBLIC THE PARCELS OF LAND WITHIN THE BOUNDARY OF ARBOR LANE AND WILKIE WAY FOR USE AS A PUBLIC STREET. AND THE SAID OWNER HEREBY DEDICATES TO THE PUBLIC EASEMENTS FOR PUBLIC UTILITIES AND THEIR APPURTENANCES AND THE RIGHT TO CONSTRUCT, MAINTAIN AND REPLACE SUCH UTILITIES AND THEIR APPURTENANCES UNDER, ON AND OVER THE STRIPS OR PARCELS OF LAND DESIGNATED "PUBLIC UTILITIES EASEMENT" (P.U.E.) ON SAID MAP, ON WHICH NO PERMANENT STRUCTURE OR IMPROVEMENT MAY BE PLACED BY PROPERTY OWNER.

AND THE SAID OWNER DOES HEREBY DECLARE THAT LOT 11 IS NOT A BUILDING "SITE"; AND THAT SAID LOT WILL BE DEEDED TO AN ASSOCIATION CONSISTING OF OWNERS OF THE REMAINING LOTS OF THIS SUBDIVISION FOR THEIR EXCLUSIVE USE; EXCEPTING THAT SAID OWNER HEREBY DEDICATES TO THE PUBLIC FOREVER THE RIGHT OF WAY OVER, ON AND ACROSS SAID LOT 11 FOR EMERGENCY PURPOSES.

AND THE SAID OWNER DOES HEREBY DECLARE THAT THE "SCENIC EASEMENT" AS SHOWN ON LOTS 11, 12, 13, 14 IT SHALL BE KEPT OPEN AND FREE FROM BUILDINGS OR STRUCTURES OF ANY KIND EXCEPT THAT SIDEWALK FENCING MAY RUN TO TOP OF BANK.

AS OWNER:
ARBOR DEVELOPMENT COMPANY, A CALIFORNIA CORPORATION

Thomas Gamba
THOMAS GAMBDA Its President
Francine B. Gamba
FRANCINE B. GAMBDA Its Secretary-Treasurer

AS TRUSTEE

TITLE INSURANCE AND TRUST COMPANY,
A CALIFORNIA CORPORATION

Edmund R. Hammond
EDMUND R. HAMMOND Vice-President
Edmund R. Hammond
EDMUND R. HAMMOND ASST. SECRETARY

ACKNOWLEDGMENT

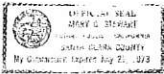
STATE OF CALIFORNIA
COUNTY OF Santa Clara

ON THIS 12TH DAY OF APRIL, 1972, BEFORE ME MARY G. STEWART, A NOTARY PUBLIC IN AND FOR THE COUNTY OF Santa Clara, STATE OF CALIFORNIA, RESIDING THEREIN, DULY COMMISSIONED AND SWORN, PERSONALLY APPEARED Thomas Gamba & Francine B. Gamba, KNOWN TO ME TO BE THE President & Secretary-Treasurer OF ARBOR DEVELOPMENT COMPANY, A CALIFORNIA CORPORATION, THE CORPORATION THAT EXECUTED THE WITHIN INSTRUMENT AND KNOWN TO ME TO BE THE PERSON WHO EXECUTED THE SAME UPON BEHALF OF THE CORPORATION NAMED THEREIN AND ACKNOWLEDGED TO ME THAT SUCH CORPORATION EXECUTED THE SAME.

IN WITNESS WHEREOF, I HAVE HEREUNTO SET MY HAND AND AFFIXED MY OFFICIAL SEAL THE DAY AND YEAR IN THIS CERTIFICATE FIRST ABOVE WRITTEN.

MY COMMISSION EXPIRES: July 21, 1973

Mary G. Stewart
NOTARY PUBLIC IN AND FOR SAID COUNTY OF Santa Clara,
STATE OF CALIFORNIA

**ACKNOWLEDGMENT**

STATE OF CALIFORNIA
COUNTY OF SAN MATEO

ON THIS 1ST DAY OF MAY, 1972, BEFORE ME, Donald R. Crawford, A NOTARY PUBLIC IN AND FOR THE COUNTY OF SAN MATEO, STATE OF CALIFORNIA, RESIDING THEREIN, DULY COMMISSIONED AND SWORN, PERSONALLY APPEARED Ed Fein and Sidney R. Hammer, KNOWN TO ME TO BE THE Vice-President & ASST. SECRETARY OF TITLE INSURANCE AND TRUST COMPANY, A CALIFORNIA CORPORATION, THE CORPORATION THAT EXECUTED THE WITHIN INSTRUMENT AND KNOWN TO ME TO BE THE PERSON WHO EXECUTED THE SAME UPON BEHALF OF THE CORPORATION NAMED THEREIN AND ACKNOWLEDGED TO ME THAT SUCH CORPORATION EXECUTED THE SAME.

IN WITNESS WHEREOF, I HAVE HEREUNTO SET MY HAND AND AFFIXED MY OFFICIAL SEAL THE DAY AND YEAR IN THIS CERTIFICATE FIRST ABOVE WRITTEN.

MY COMMISSION EXPIRES: 9-3-74

Donald R. Crawford
NOTARY PUBLIC IN AND FOR SAID COUNTY OF SAN MATEO,
STATE OF CALIFORNIA.

**CIVIL ENGINEER'S CERTIFICATE**

I, THE UNDERSIGNED, WILLIAM JAY HAMMOND, DO HEREBY CERTIFY THAT I AM THE REGISTERED CIVIL ENGINEER RESPONSIBLE FOR THE SURVEY FROM WHICH THE HEREIN EMBODIED FINAL MAP ENTITLED "CYPRESS CLIFFS SUBDIVISION" CONSISTING OF TWO SHEETS, THIS CERTIFICATE BEING UPON SHEET ONE THEREOF HAS BEEN PREPARED AND THAT I AM RESPONSIBLE FOR SAID FINAL MAP; THAT THE DATE OF THE SURVEY IS MARCH 15, 1972, AND WAS MADE UNDER MY DIRECTION; THAT SAID SURVEY IS TRUE AND COMPLETE AS SHOWN; AND THAT THE MONUMENTS ARE OR WILL BE PLACED PRIOR TO MARCH 15, 1973 IN THE POSITIONS INDICATED ON THIS MAP AND ARE SUFFICIENT TO ENABLE THE SURVEY TO BE RETRACED.

William Jay Hammond
REGISTERED CIVIL ENGINEER NO. 11189
IN THE STATE OF CALIFORNIA

COUNTY ENGINEER'S CERTIFICATE

I, S.H. CANTWELL, JR., COUNTY ENGINEER OF THE COUNTY OF SAN MATEO, STATE OF CALIFORNIA, HEREBY CERTIFY THAT I HAVE EXAMINED THE WITHIN FINAL MAP; THAT THE SUBDIVISION AS SHOWN HEREON IS SUBSTANTIALLY THE SAME AS IT APPEARED ON THE TENTATIVE MAP AND ANY APPROVED ALTERATIONS THEREOF AS APPROVED BY THE SAN MATEO COUNTY PLANNING COMMISSION ON FEBRUARY 25, 1972; THAT ALL PROVISIONS OF THE CALIFORNIA SUBDIVISION MAP ACT, AS AMENDED, AND OF SAN MATEO COUNTY ORDINANCE 595, APPLICABLE AT THE TIME OF APPROVAL OF THE TENTATIVE MAP HAVE BEEN COMPLIED WITH, AND THAT I AM SATISFIED THAT THIS MAP IS TECHNICALLY CORRECT.

DATED: April 24, 1972

S.H. Cantwell
S.H. CANTWELL, JR., SAN MATEO COUNTY ENGINEER

CERTIFICATE OF CLERK OF BOARD OF SUPERVISORS

I, MARVIN CHURCH, CLERK OF THE BOARD OF SUPERVISORS OF SAN MATEO COUNTY, STATE OF CALIFORNIA, HEREBY CERTIFY THAT SAID BOARD APPROVED THE WITHIN MAP ON THE 2ND DAY OF MAY, 1972; AND ACCEPTED ON BEHALF OF THE PUBLIC ALL PARCELS OF LAND OFFERED FOR DEDICATION FOR PUBLIC USE IN CONFORMITY WITH TERMS OF THE OFFER OF DEDICATION.

Marvin Church
COUNTY CLERK AND EX-OFFICIO CLERK OF THE BOARD OF SUPERVISORS OF THE COUNTY OF SAN MATEO, STATE OF CALIFORNIA

RECORDER'S CERTIFICATE

FILE NO. 12417 AF FEE \$ 2.00
ACCEPTED FOR RECORD AND RECORDED AT THE REQUEST OF THE INSUBDIVISION & TRUST CO. IN VOLUME 72 OF MAPS AT PAGE 33 & 34
IN THE OFFICE OF THE RECORDER OF THE COUNTY OF SAN MATEO, STATE OF CALIFORNIA, THIS 4 DAY OF MAY, 1972,
AT 4 MINUTES PAST 2 P.M.

MARVIN CHURCH, COUNTY RECORDER

By: *G. M. Shady*
DEPUTY

SOILS REPORT

A SOILS REPORT HAD BEEN PREPARED ON THIS SUBDIVISION BY THE FIRM OF LOWNEY - KALVEER ASSOCIATES, DATED JANUARY 21, 1972 AND SIGNED BY JOHN V. LOWNEY, REGISTERED CIVIL ENGINEER, CERTIFICATE NO. 15774, STATE OF CALIFORNIA.

WM. JAY HAMMOND
CIVIL ENGINEER

PALO ALTO

CALIFORNIA

TRACT NO. 864**CYPRESS CLIFFS SUBDIVISION**

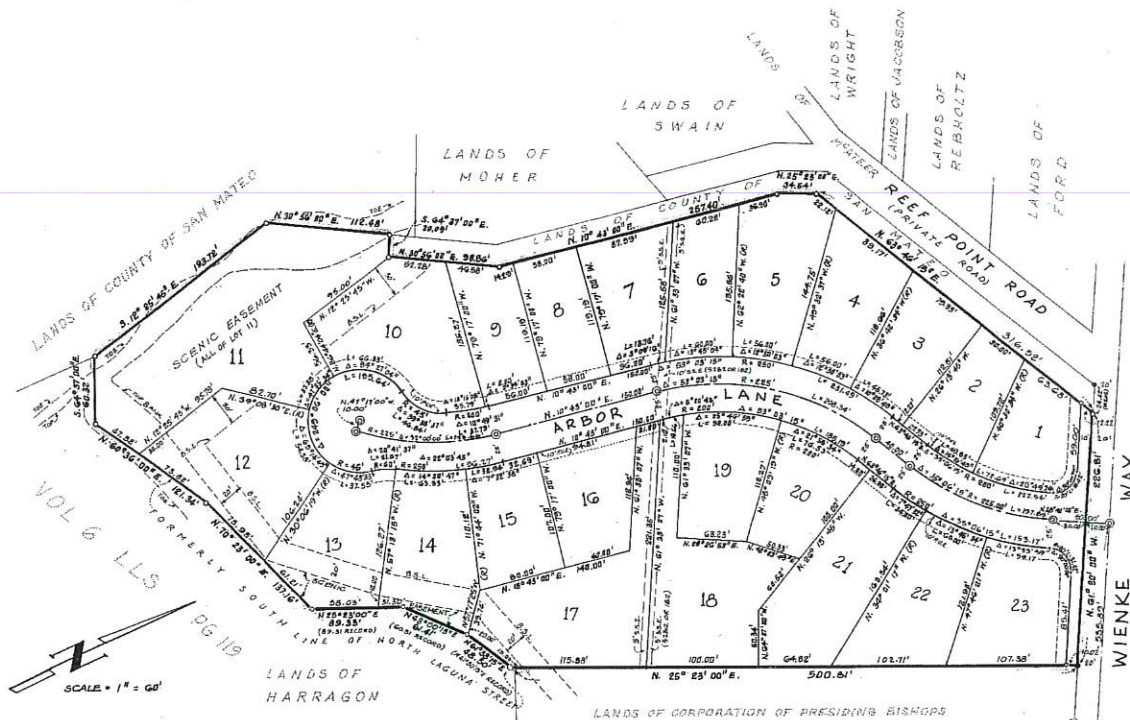
SAN MATEO COUNTY CALIFORNIA
PARCEL DESCRIBED BY DEED RECORDED IN BOOK 1971 OFFICIAL RECORDS AT PAGE 114.
BEING A RESUBDIVISION OF ALL OF BLOCK 49; LOTS 15-32 OF BLOCK 49 AND THOSE PORTIONS OF ROOSEVELT AVENUE, NORTH LAGUNA STREET, WILKIE WAY, AND THE STRAND, ALL ABANDONED, AS SAID LOTS, BLOCKS AND STREETS ARE DESCRIBED IN VOLUME 9 OF RECORDS AT PAGE 148

BEING A PORTION OF "MAP OF MOSS BEACH, SAN MATEO COUNTY, CALIFORNIA" FILED IN BOOK 66 OF MAPS AT PAGE 4, MAY 4, 1908, SAN MATEO COUNTY RECORDS.

SCALE: 1"=60' SHEET ONE OF TWO SHEETS APRIL, 1972

NOTES:

- THE BLUE BORDER INDICATES THE BOUNDARY OF THE LAND SUBDIVIDED BY THIS MAP.
- ALL DISTANCES ARE GIVEN IN FEET AND DECIMALS THEREOF.



LEGEND

- FOUND 1/4" IRON PIPE UNLESS NOTED OTHERWISE
- SET 3/4" IRON PIPE UNLESS NOTED OTHERWISE
- SET STANDARD SAN MATEO COUNTY MONUMENT
- S.S.E. SANITARY SEWER EASEMENT
- B.S.L. BUILDING SETBACK LINE
- P.U.E. PUBLIC UTILITY EASEMENT

WM. JAY HAMMOND
CIVIL ENGINEER

PALO ALTO

CALIFORNIA

BASIS OF BEARING

THE BEARING N 61° 20' 00" W OF THE SOUTHERLY LINE OF WIENKE WAY AS SHOWN ON THAT CERTAIN "MAP OF MOSS BEACH, SAN MATEO COUNTY, CALIFORNIA" RECORDED MAY 4, 1908 IN BOOK 6 OF MAPS AT PAGE 3, SAN MATEO COUNTY RECORDS

TRACT NO. 864

CYPRESS CLIFFS SUBDIVISION

SAN MATEO COUNTY CALIFORNIA
PARCEL DESCRIBED BY DEED RECORDED IN BOOK 1371 OFFICIAL RECORDS AT PAGE 114, BEING A RESUBDIVISION OF ALL OF BLOCK 49; LOTS 15-32 OF BLOCK 48 AND THOSE PORTIONS OF ROOSEVELT AVENUE, NORTH LAGUNA STREET, WIENKE WAY, AND THE STRAND, ALL ABANDONED, AS SAID LOTS, BLOCKS AND STREETS ARE DESCRIBED IN VOLUME 9 OF RECORDS AT PAGE 148

BEING A PORTION OF "MAP OF MOSS BEACH, SAN MATEO COUNTY, CALIFORNIA" FILED IN BOOK 3 OF MAPS AT PAGE 3, MAY 4, 1908, SAN MATEO COUNTY RECORDS

SCALE: 1" = 60'

APRIL, 1972

SHEET TWO OF TWO SHEETS

ARBOR RESIDENCE

199 ARBOR LANE MOSS BEACH, CA 94038

Attachment C

PROJECT TEAM	SHEET INDEX	BUILDING ANALYSIS	VICINITY MAP
OWNER: ZUBAR LLC 1309 MAIN STREET VENICE, CA 90291 ARCHITECT: CARLOS ZUBIETA ARCHITECTURE 1725-A ABBOT KINNEY BLVD. VENICE, CA 90291 310-827-8195 SURVEYOR: LEA & BRAZE ENGINEERING INC 26229 EDEN LANDING ROAD, SUITE 2 HAYWARD, CA 94545 510-887-4086 CIVIL ENGINEER: BERRY & ASSOCIATES 1733 WOODSIDE ROAD, SUITE 335 REDWOOD CITY, CA 94061 650-368-0750 GEOTECHNICAL ENGINEER: MICHELUCCI & ASSOCIATES 1801 MURCHISON DRIVE, SUITE 88 BURLINGAME, CA 94010 650-692-0163 BIOLOGICAL CONSULTANT: KOPITOV ENVIRONMENTAL LLC 220 ATLANTIC AVE, SUITE 312 SANTA CRUZ, CA 95060 206-456-4088 STRUCTURAL ENGINEER: --- --- --- ---	ARCHITECTURAL SHEETS: A-0.0 COVER SHEET - INDEX - ZONING - VICINITY MAP PR-1.0 PROJECT DESCRIPTION + MATERIALS PR-1.1 EXTERIOR ELEVATIONS + MATERIALS PR-1.2 EXTERIOR ELEVATIONS + MATERIALS PR-1.3 BUILDING SECTIONS + MATERIALS PR-1.4 SURROUNDING NEIGHBORHOOD + ROOF TYPES SU-1.0 TOPOGRAPHIC SURVEY A-1.0 SITE PLAN A-3.0 FIRST FLOOR PLAN A-3.1 SECOND FLOOR PLAN A-3.2 ROOF PLAN LT-1.0 LIGHTING PLAN L-1.0 LANDSCAPE PLAN	LEGAL DESCRIPTION: ADDRESS 199 ARBOR LANE MOSS BEACH, CA 94038 LOT: 12 TRACT: TR 864 BLOCK NONE ASSESSOR'S P.N.º 037-123-430 BUILDING CODE: 2017 EDITION OF CA BUILDING CODE PLANNING AND ZONING: OCCUPANCY TYPE: SINGLE FAMILY RESIDENTIAL ZONING: R-1/S-17/DR/CD EXISTING LAND USE : UNDEVELOPED PROPOSED BUILDING: SINGLE FAMILY RESIDENCE NUMBERS OF STORIES NEW BUILDING: 2 COASTAL DEVELOPMENT DISTRICT: YES DESIGN REVIEW DISTRICT: YES SCENIC VIEW CORRIDOR: YES BUILDING + LOT SUMMARY PARCEL AREA: 14,320 SF PROPOSED FLOOR AREA: FIRST FLOOR 2,510 SF SECOND FLOOR 688 SF TOTAL HABITABLE SF: 3,198 SF COVERED PORTION OF ENTRY PORCH 58 SF COVERED PORTION OF REAR PORCH 82 SF COVERAGE PORCHES 140 SF 2- CAR GARAGE 468 SF TOTAL BUILDING FLOOR AREA: 3,806 SF MAXIMUM BUILDING FLOOR AREA (PER SECTION 6300.2.5A): PARCEL SIZE OVER 11,698 SF = 6,200 SF PROPOSED BUILDING HEIGHT AT HIGHEST POINT: 24'-3 7/8" BUILDING TO BE PROTECTED BY AN AUTOMATED FIRE SPRINKLER SYSTEM. SAN MATEO COUNTY ZONING REGULATIONS PER CHAPTER 20 SECTION 6300.2 FOR DISTRICT S-17: MAX ALLOWABLE HEIGHT (PER SECTION 6300.2.6) = 28'-0" PARCEL COVERAGE FOR STRUCTURES > 16'-0" IN HEIGHT (PER SECTION 6300.2.4): 14,320 SF (LOT AREA) X .35 (35%) = 5,012 SF PROPOSED PARCEL COVERAGE = 3,994 SF REQUIRED BUILDING SETBACKS (PER SECTION 6300.2.3): FRONT = 20'-0" REAR = 20'-0" (MINIMUM) SIDE = 5'-0" (STRUCTURES OVER 16'-0" IN HEIGHT) SIDE = COMBINED TOTAL OF 15'-0" (MIN OF 5'-0" EACH SIDE) MAXIMUM IMPERVIOUS SURFACE AREA (PER SECTION 6300.2.7): MAX PARCEL AREA COVERED BY IMPERVIOUS STRUCTURES LESS THAN 18" IN HEIGHT IS LIMITED TO 10% OF THE PARCEL AREA, BUT IS NOT TO EXCEED 1,170 SF FOR RESIDENTIAL USES. 10% OF 14,320 SF = 1,432 SF THEREFORE THE MAX IMPERVIOUS SURFACE AREA = 1,170 SF PROPOSED IMPERVIOUS SURFACE AREA = 82 SF	



GOOGLE MAPS VIEW:

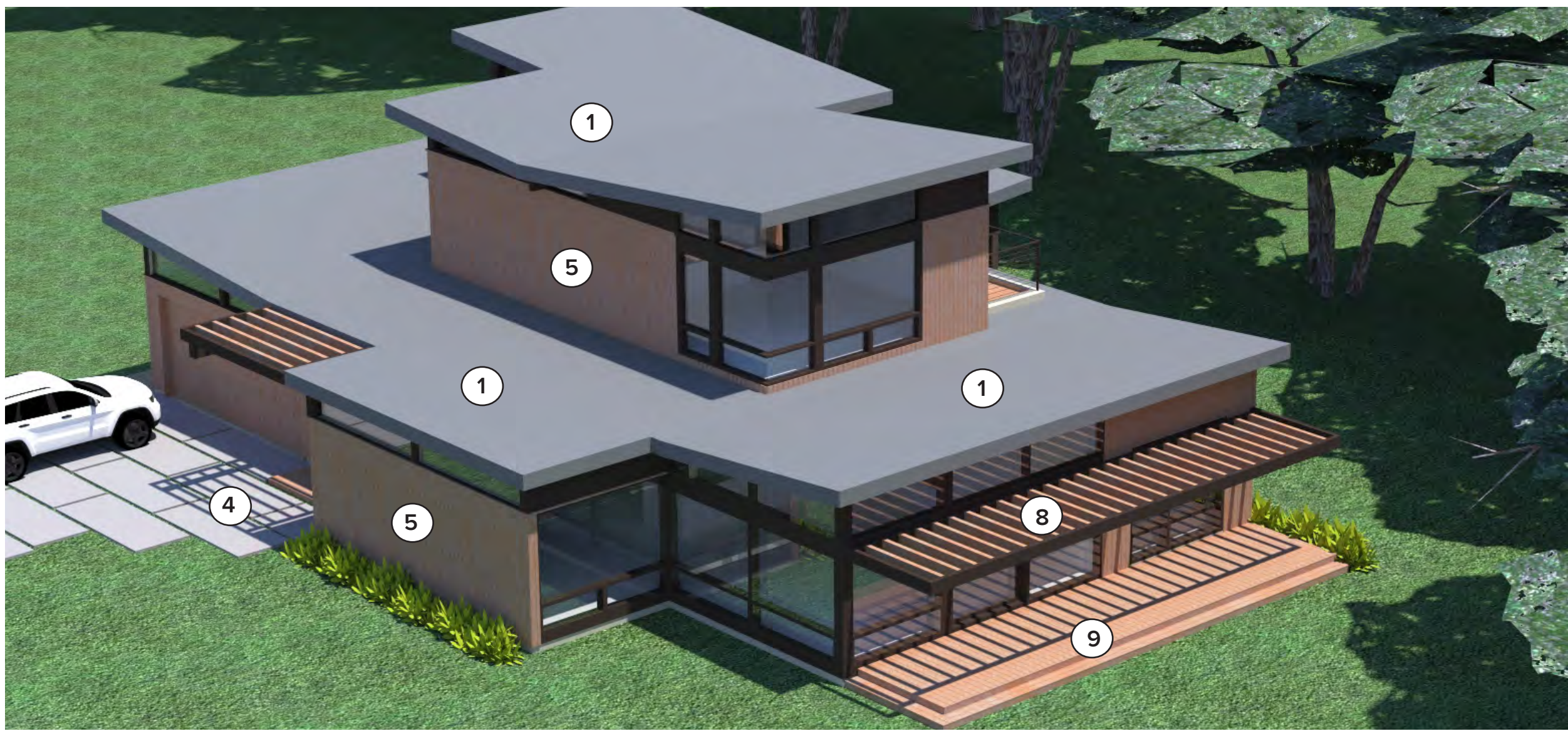
PROJECT LOCATION:

The project is located on a Cul-de sac approximately .17 miles West of Highway 1 in Moss Beach along the San Mateo County coastline. The coastal bluff is approximately 50 feet away from the property and overlooks the Fitzgerald Marine Reserve. The immediate surroundings of the project includes single family residences including one single family home to the immediate east and a vacant property owned by the home owners association to the North. The size of the site measures approximately 14,000 SF.

PROJECT DESCRIPTION:

The proposed project is of a new single family residence covering an estimated area of 3,200 square feet with an attached two car garage. The design and scale of the project was strategized to relate to the immediate neighborhood while the new structure uses contemporary strategies for incorporating passive solar, opening up the house to the outdoor spaces and retaining the native surrounding habitat as recommended by the biology report obtained. From the street the project scale is kept low to create visibility and reduce solid two-story wall surfaces.

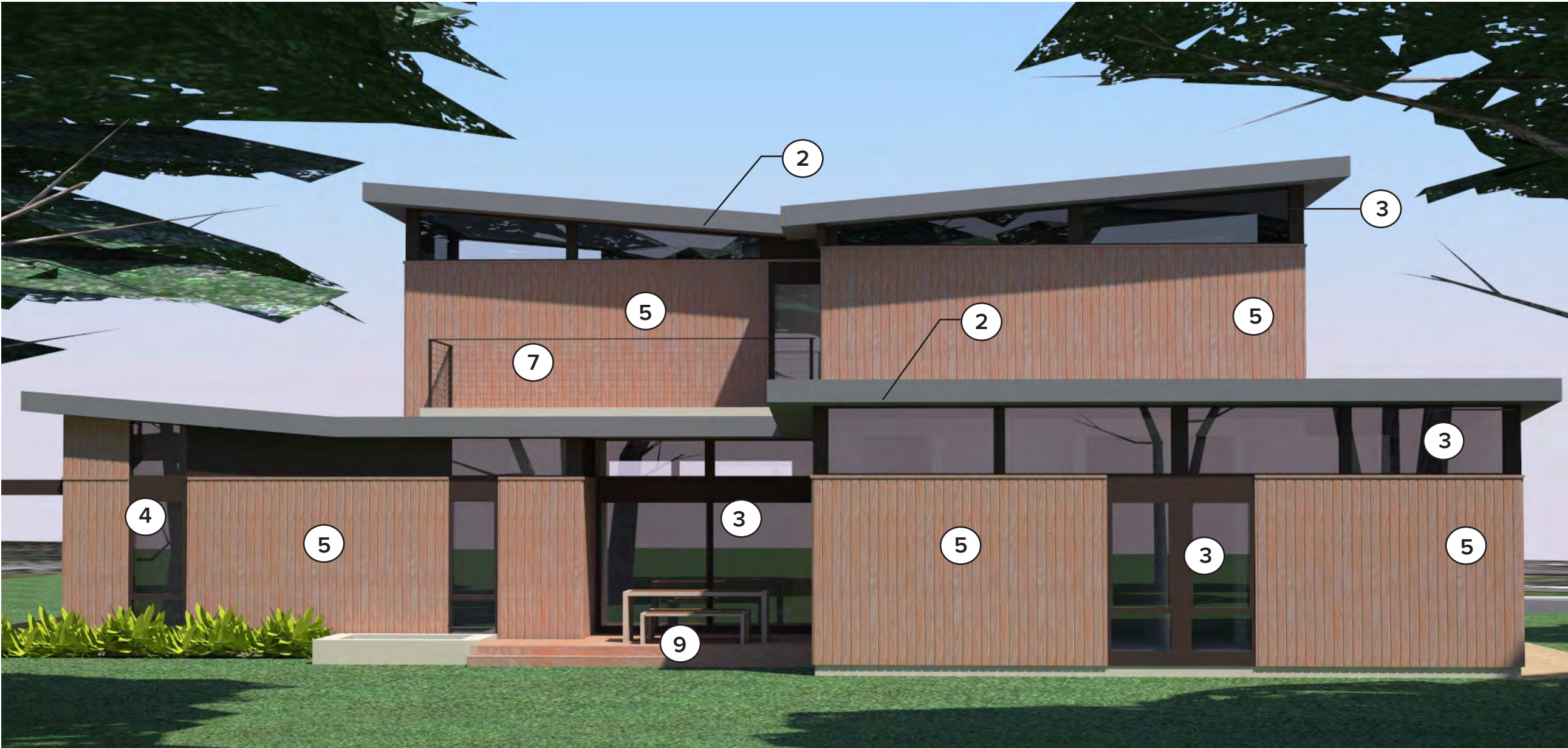
The use of environmentally conscious materials throughout the house helps to emphasize the warmth and character as well as blend with the natural surrounding landscape. Western red cedar exterior walls, are reminiscent of Sea Ranch and the the surrounding materials. Large South facing windows will open to the views of the surrounding landscape while also providing passive solar heating within the home. Varying roof slopes allow the house to be nested into the low-lying neighborhood, while the granite on the exterior roofing reflects the rocks along the cliff.



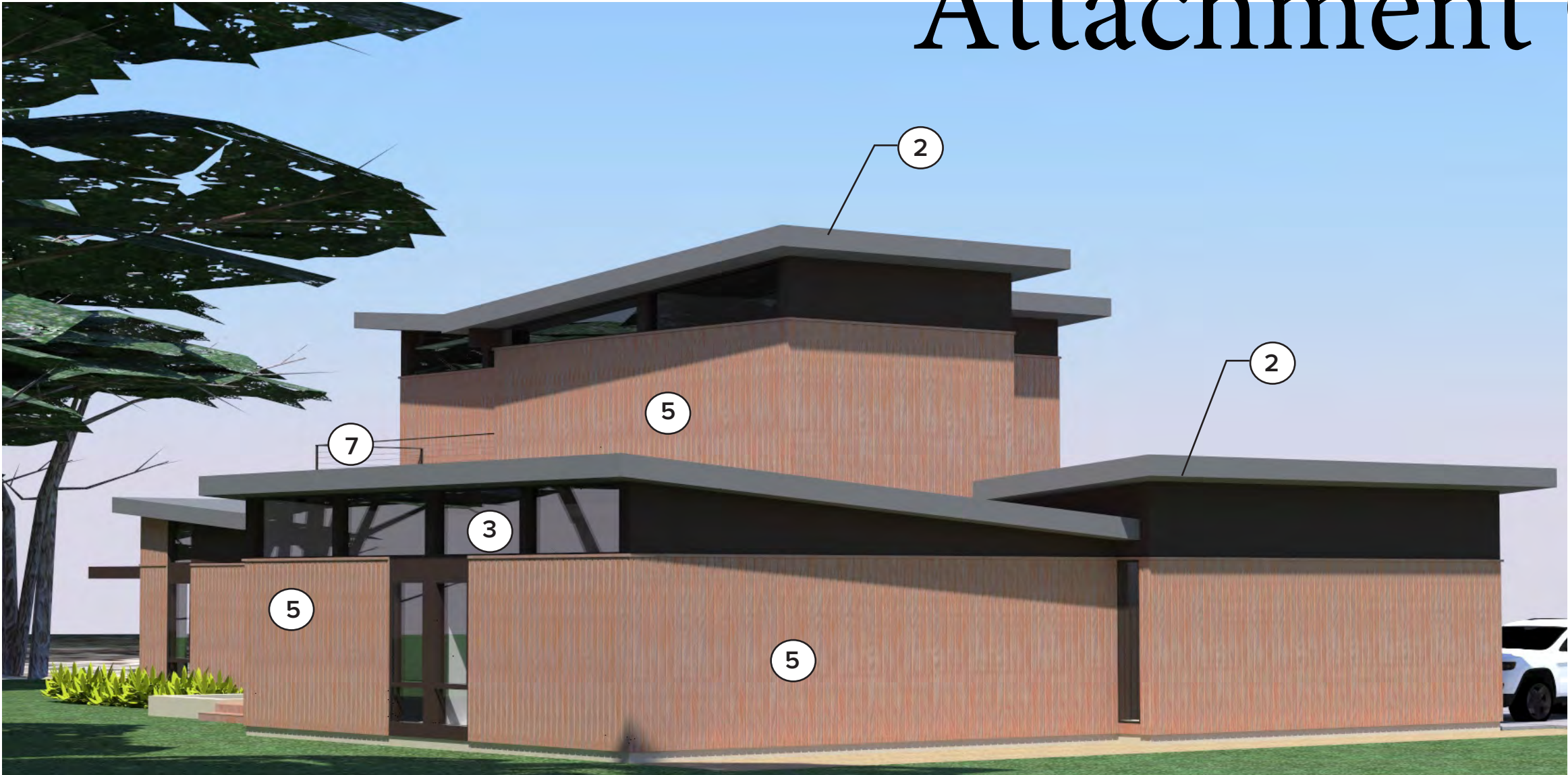
TOP VIEW:



NORTH ELEVATION VIEW: ARBOR LANE



SOUTH ELEVATION VIEW: OCEAN FACING



EAST ELEVATION VIEW:

MATERIALS AND FINISHES LEGEND:



1. ROOFING: Class A 4 Ply Built up roofing finished with a layer of rock - Granite No. 4 by by A1 Grit Company



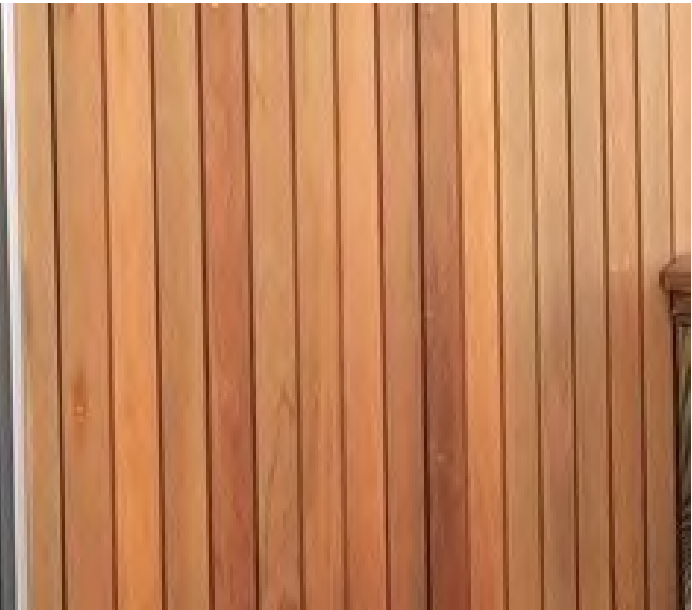
2.EXTERIOR TRIM: VM ZINC PIGMENTO zinc flat panels in "brown"



3. WINDOWS: Milgard Windows Aluminum Frame - color: dark bronze



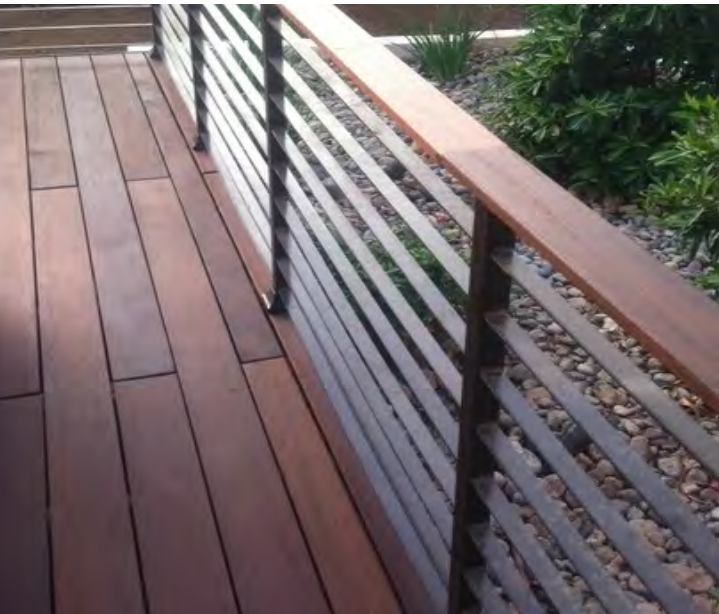
4. EXPOSED AGGREGATE CONCRETE: Site concrete at driveway and pavers for pathways



5. EXTERIOR WALLS: Natural wood siding in 4" wide -Western Red Cedar siding - Benjamin Moore ARBORCOAT waterborne exterior stain semi-solid 639



6. GARAGE DOORS: Natural wood Roll up doors - Western Red Cedar - Clr. polyurethane finish



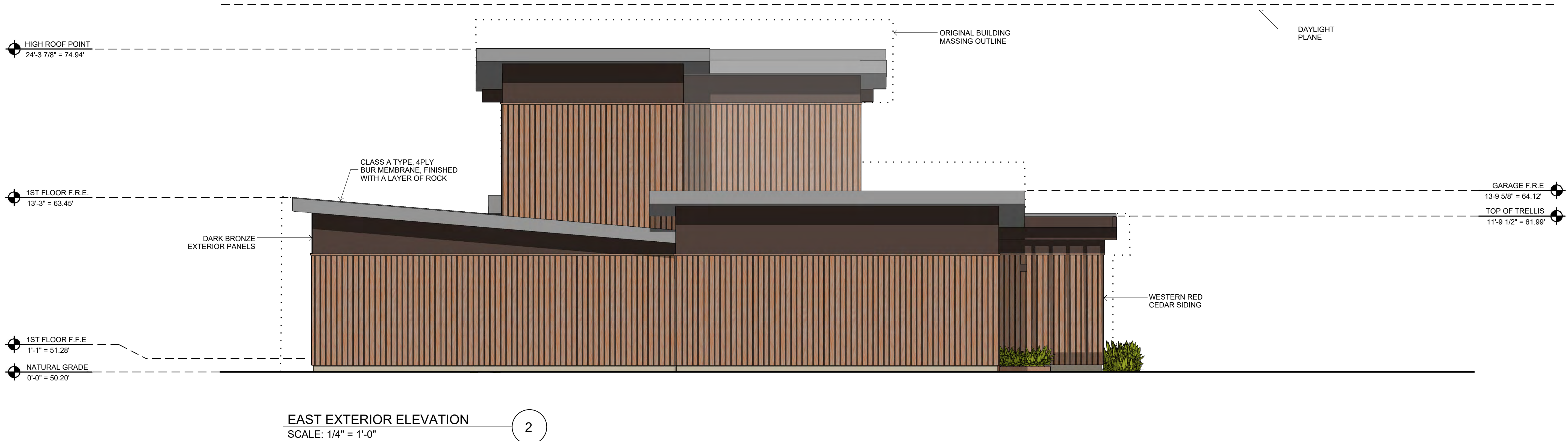
7. RAILINGS / BALCONY: Powder coated steel and natural wood top - bronze color to doors and windows and clr. polyurethane finish



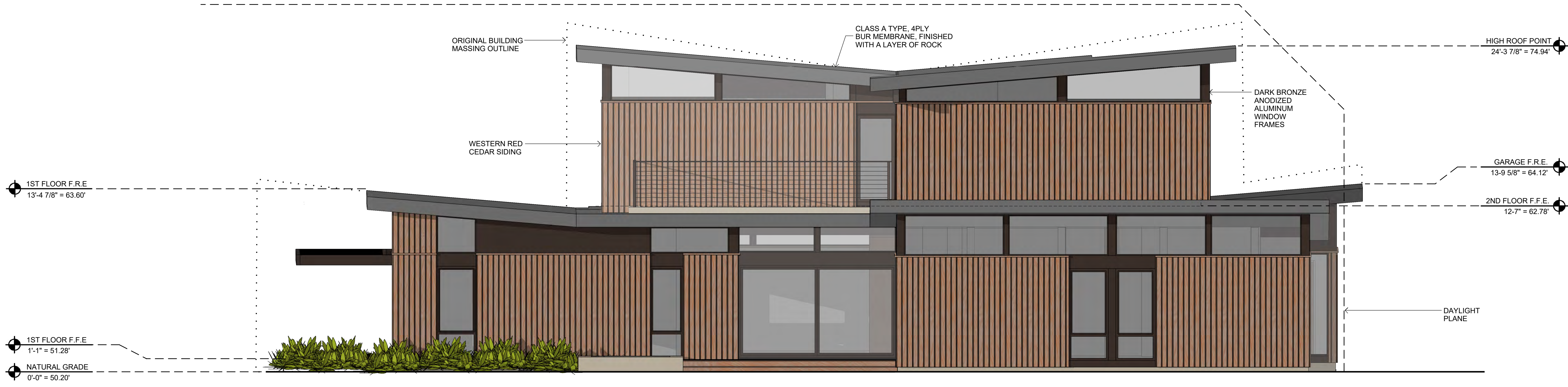
8. OVERHANGS: Natural wood trellis- 4x12 douglas fir beams with clear polyurethane finish



9.HARDSCAPE / DECKS: poured concrete and natural wood decks - 2x6 teak clr. polyurethane finish

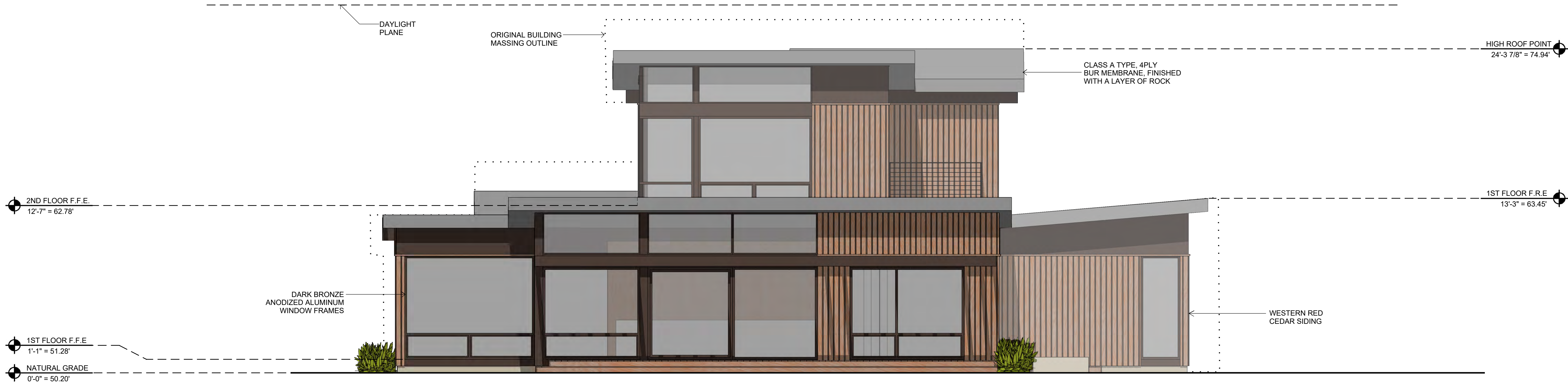


SEE CORRESPONDING MATERIALS AND FINISHES
LEGEND ON PAGE PR-1.0



SOUTH EXTERIOR ELEVATION
SCALE: 1/4" = 1'-0"

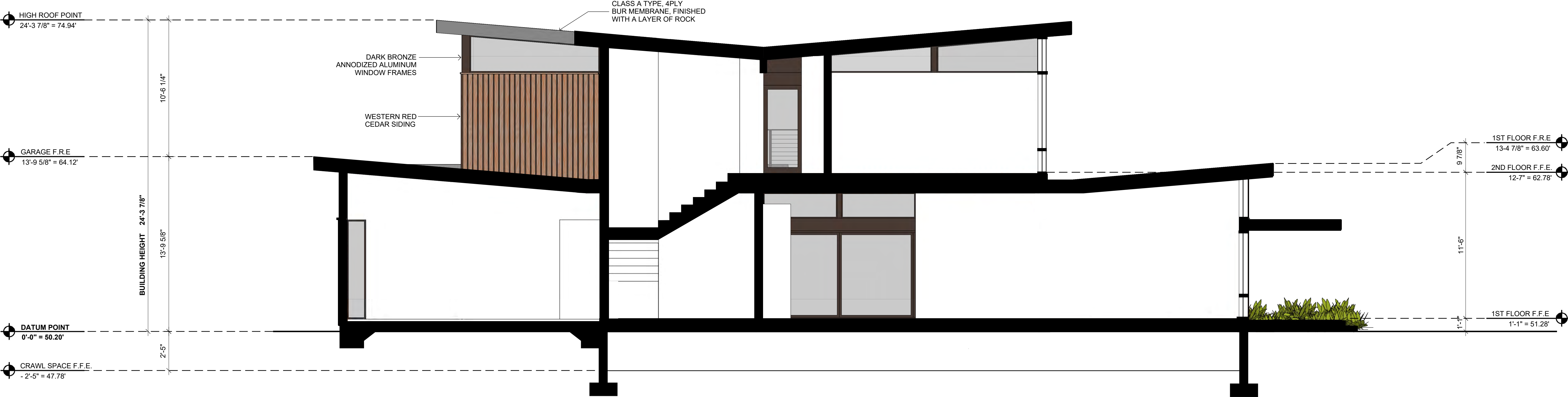
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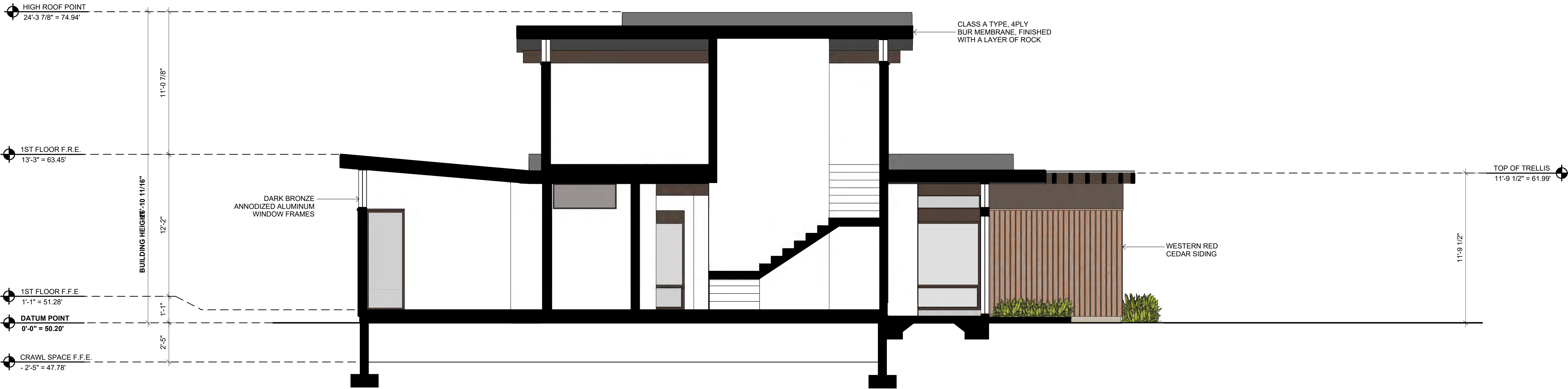
WEST EXTERIOR ELEVATION
SCALE: 1/4" = 1'-0"

2

SEE CORRESPONDING MATERIALS AND FINISHES
LEGEND ON PAGE PR-1.0



LONG BUILDING SECTION
SCALE: 1/4" = 1'-0"



SHORT BUILDING SECTION
SCALE: 1/4" = 1'-0"

SEE CORRESPONDING MATERIALS AND FINISHES
LEGEND ON PAGE PR-1.0



199 ARBOR LANE - PROJECT SITE (VIEW TOWARDS ARBOR LANE)



191 ARBOR LANE - EXISTING HOUSE (EAST SIDE) ONLY IMMEDIATE NEIGHBOR



191 ARBOR LANE - EXISTING LOT - NORTH SIDE OF PROPERTY

NEIGHBORHOOD CONTEXT:

The homes on Arbor Lane, a cul-de-sac are one and two stories in height. The homes are a mix of similar style ranch homes built at the same time with newer second floor additions in a mix of colors and materials. All of the homes have the garages that face Arbor Lane. with varied roof lines that range from pitched to gabled. The proposed residence will be contemporary similar in materials and look and feel as some of the newer developments occurring in other neighborhoods in Moss Beach.



EXISTING ADJACENT HOUSE ON THE NORTH SIDE



181 ARBOR LANE - EXISTING ADJACENT HOUSE ON THE SOUTH SIDE

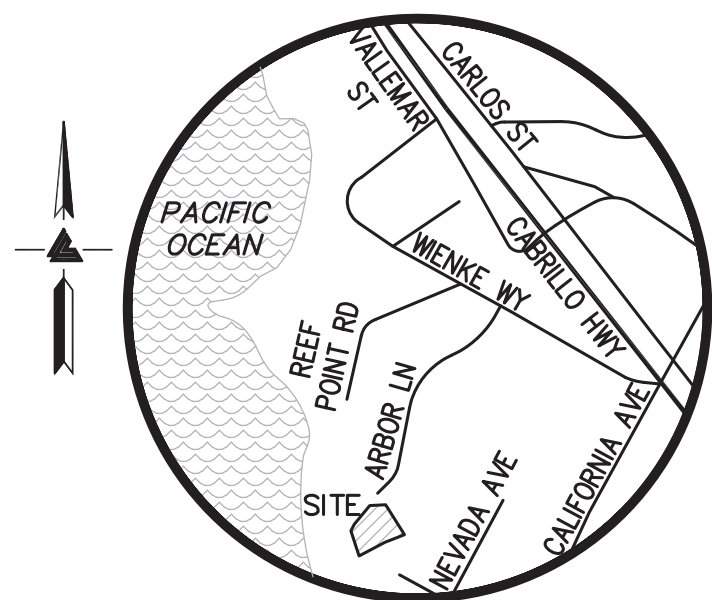


CONTEMPORARY PROJECT IN MOSS BEACH



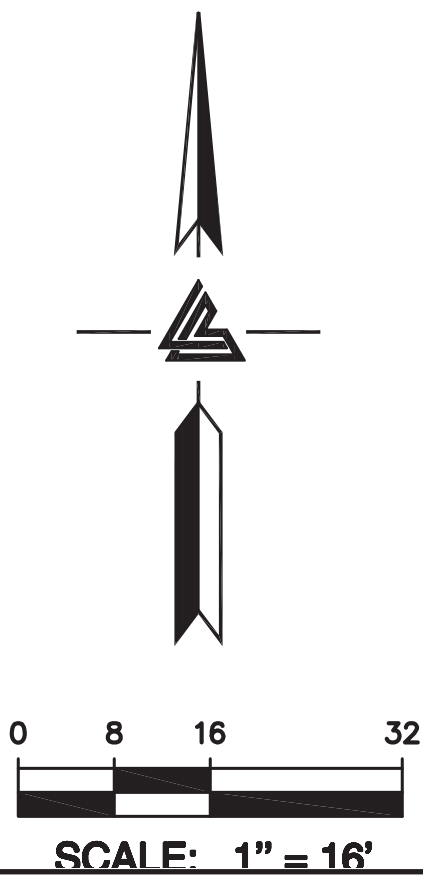
CONTEMPORARY PROJECT IN MOSS BEACH

Attachment C

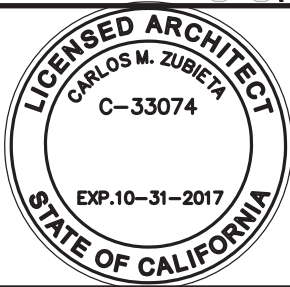


VICINITY MAP
NO SCALE

PACIFIC
OCEAN



SCALE: 1" = 16'



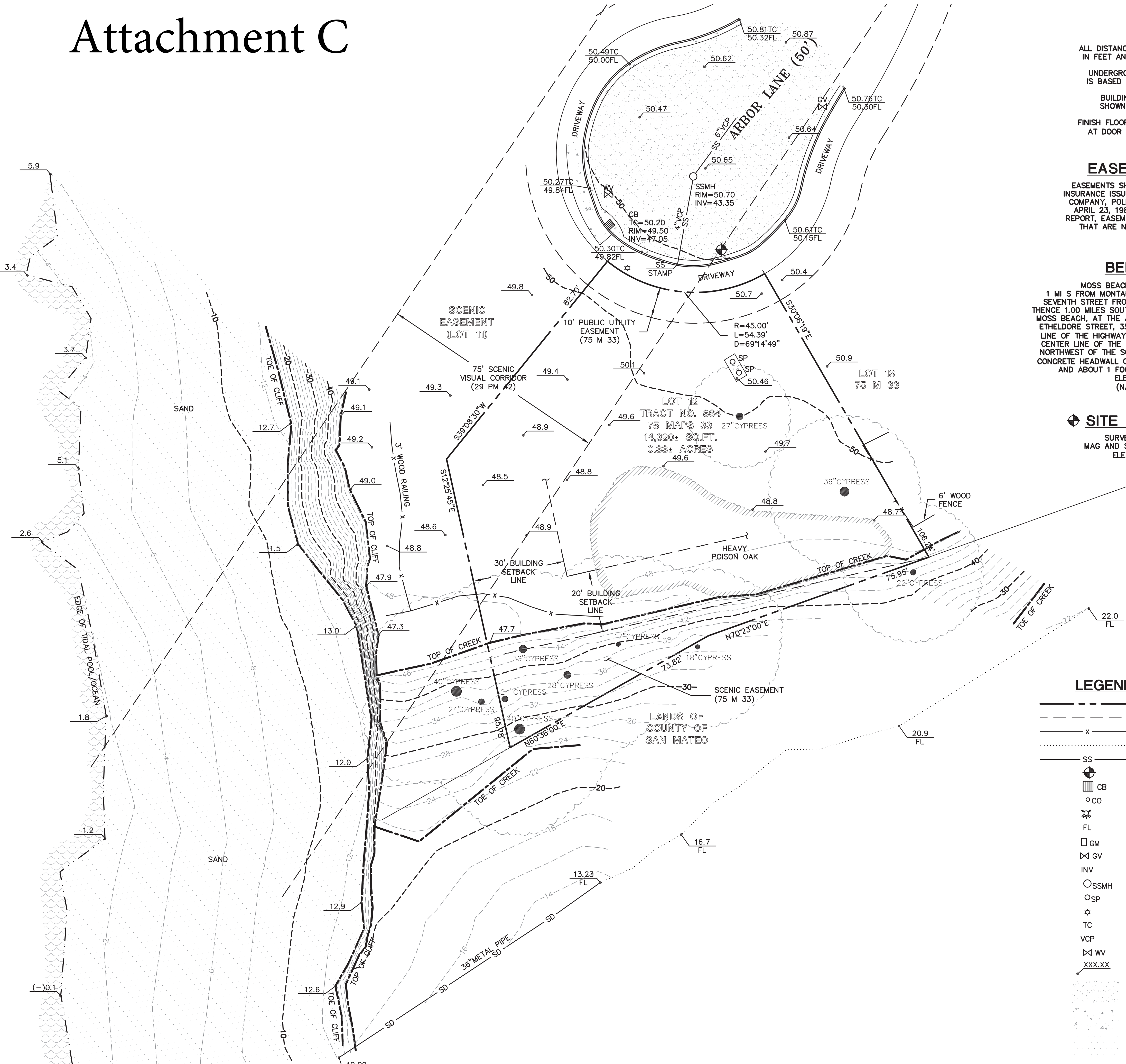
3 REVISIONS PER CDRC HEARING COMMENTS 07.24.17

ASSESSOR'S PARCEL NUMBER:
037-123-430

PROJECT ADDRESS:
199 ARBOR LANE, MOSS BEACH, SAN MATEO COUNTY, CA

TOPOGRAPHIC SURVEY

SU-1.0



NOTES

ALL DISTANCES AND DIMENSIONS ARE
IN FEET AND DECIMALS OF A FOOT.
UNDERGROUND UTILITY LOCATION
IS BASED ON SURFACE EVIDENCE.
BUILDING FOOTPRINTS ARE
SHOWN AT GROUND LEVEL.
FINISH FLOOR ELEVATIONS ARE TAKEN
AT DOOR THRESHOLD (EXTERIOR)

EASEMENT NOTE

EASEMENTS SHOWN PER POLICY OF TITLE
INSURANCE ISSUED BY FIRST AMERICAN TITLE
COMPANY, POLICY NO. SM-327955, DATED
APRIL 23, 1987. DUE TO DATE OF TITLE
REPORT, EASEMENTS OF RECORD MAY EXIST
THAT ARE NOT SHOWN ON THIS MAP.

BENCHMARK

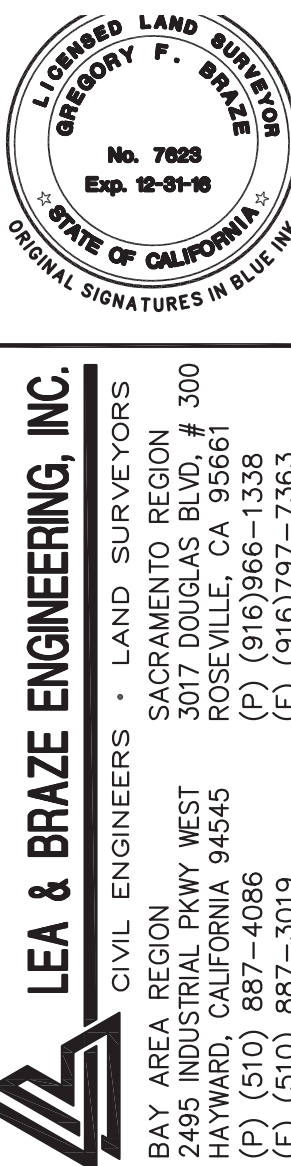
MOSS BEACH/NGS BENCHMARK 1812
1 MI S FROM MONTARA, 0.05 MILE NORTHWEST ALONG
SEVENTH STREET FROM THE POST OFFICE AT MONTARA,
THENCE 1.00 MILES SOUTHEAST ALONG STATE HIGHWAY 1, AT
MOSS BEACH, AT THE JUNCTION OF STATE HIGHWAY 1 AND
ETHELDORE STREET, 35 FEET NORTHEAST OF THE CENTER
LINE OF THE HIGHWAY, 47 1/2 FEET SOUTHEAST OF THE
CENTER LINE OF THE STREET, IN THE TOP AND 1.2 FEET
NORTHWEST OF THE SOUTHEAST END OF THE NORTHEAST
CONCRETE HEADWALL OF A 24 INCH PIPE CULVERT 35/29,
AND ABOUT 1 FOOT LOWER THAN THE HIGHWAY.
ELEVATION = 60.91
(NAVD 88 DATUM)

SITE BENCHMARK

SURVEY CONTROL POINT
MAG AND SHINER SET IN ASPHALT
ELEVATION = 50.20'
(NAVD 88)

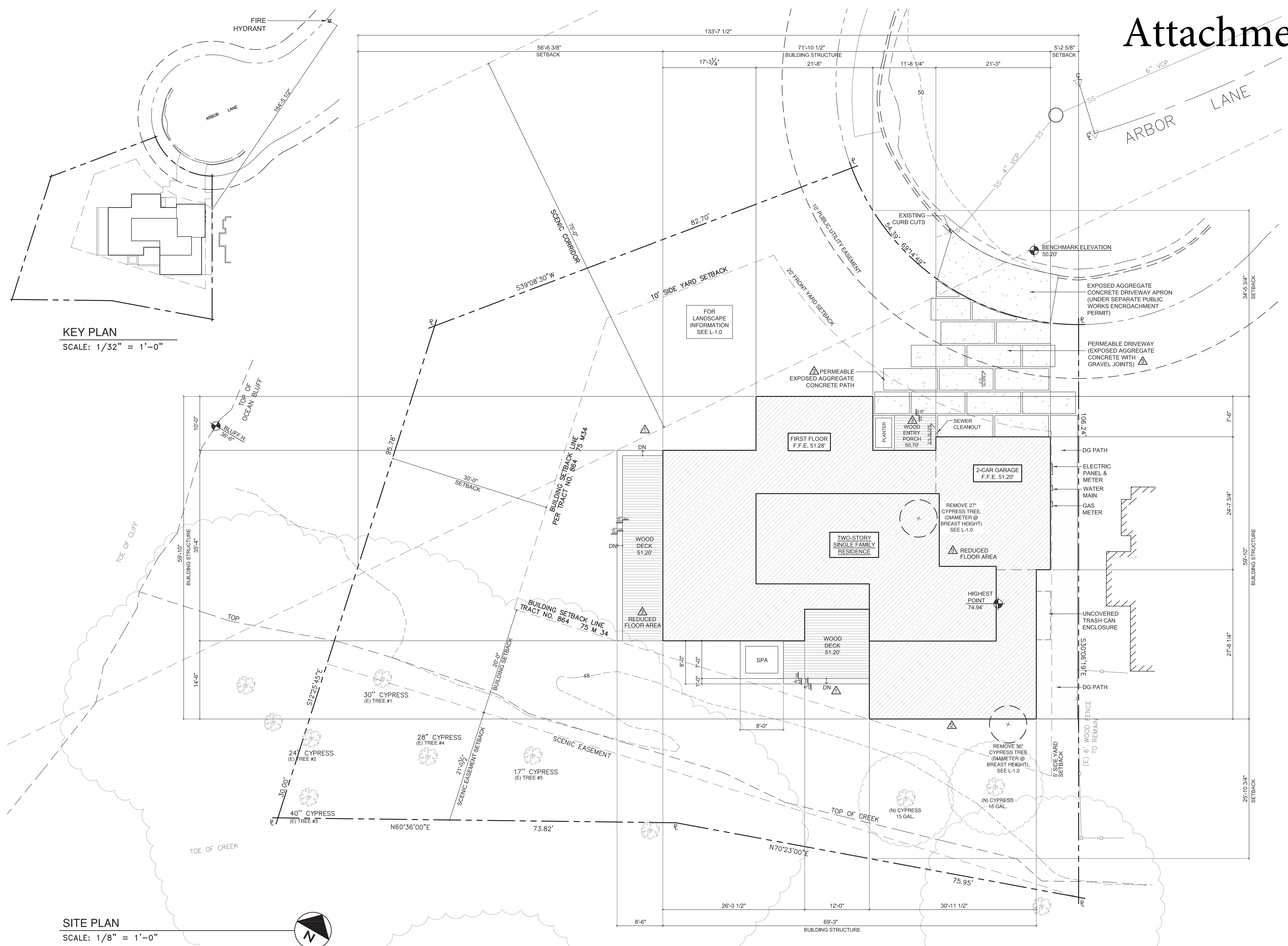
LEGEND AND NOTES

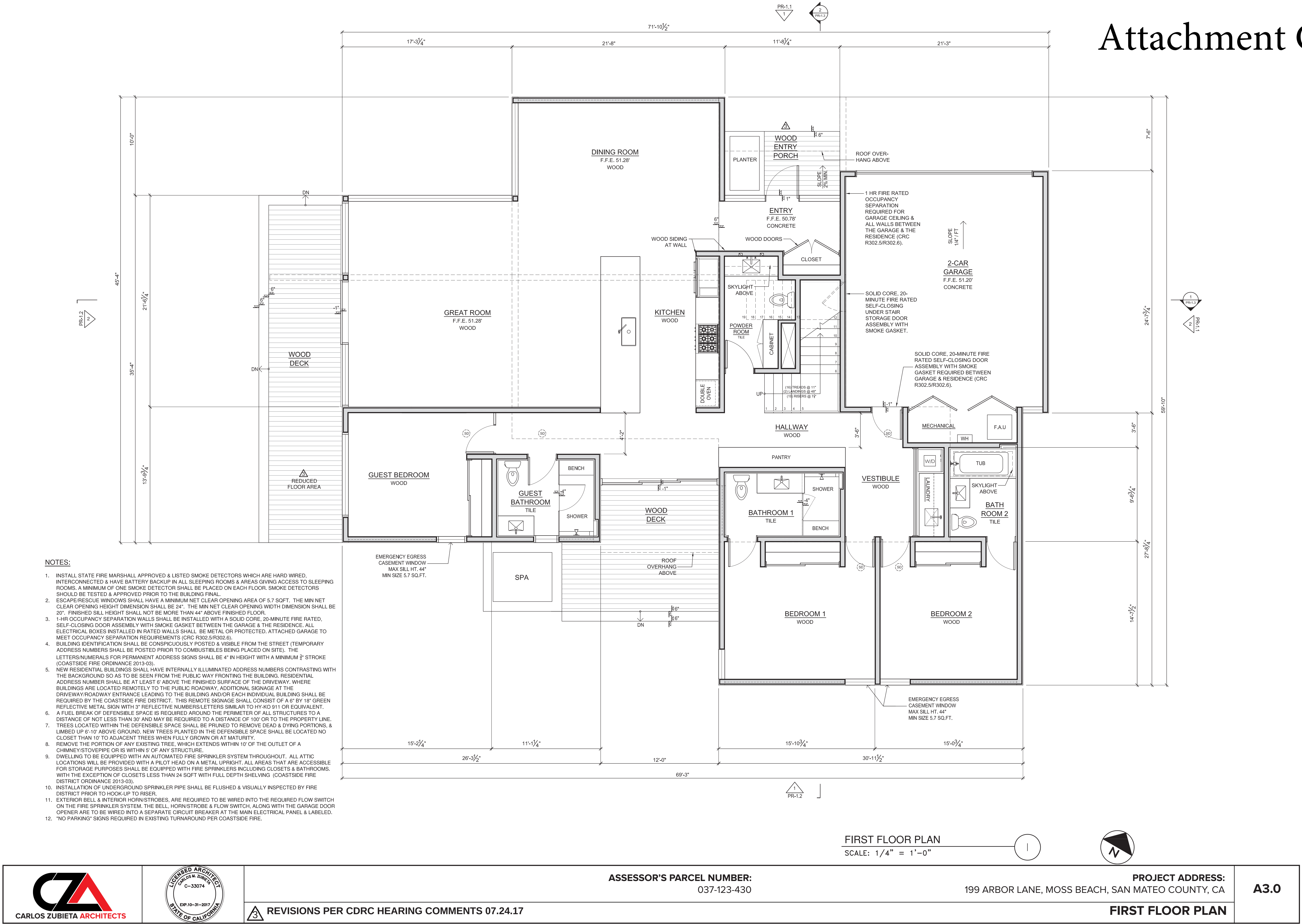
---	BOUNDARY LINE
- - - -	EASEMENT
- x -	FENCE LINE
---	FLOW LINE
---	SANITARY SEWER LINE
+	BENCHMARK
CB	CATCH BASIN
CO	CLEAN-OUT BOX
FD	FIRE HYDRANT
FL	FLOW LINE
GM	GAS METER
GV	GAS VALVE
INV	INVERT
SSMH	SANITARY SEWER MANHOLE
SP	STANDPIPE
☆	STREET LIGHT
TC	TOP OF CURB
VCP	VITRIFIED CLAY PIPE
WV	WATER VALVE
XXX.XX	SPOTGRADE
ASPH	ASPHALT
CONC	CONCRETE
SAND	SAND

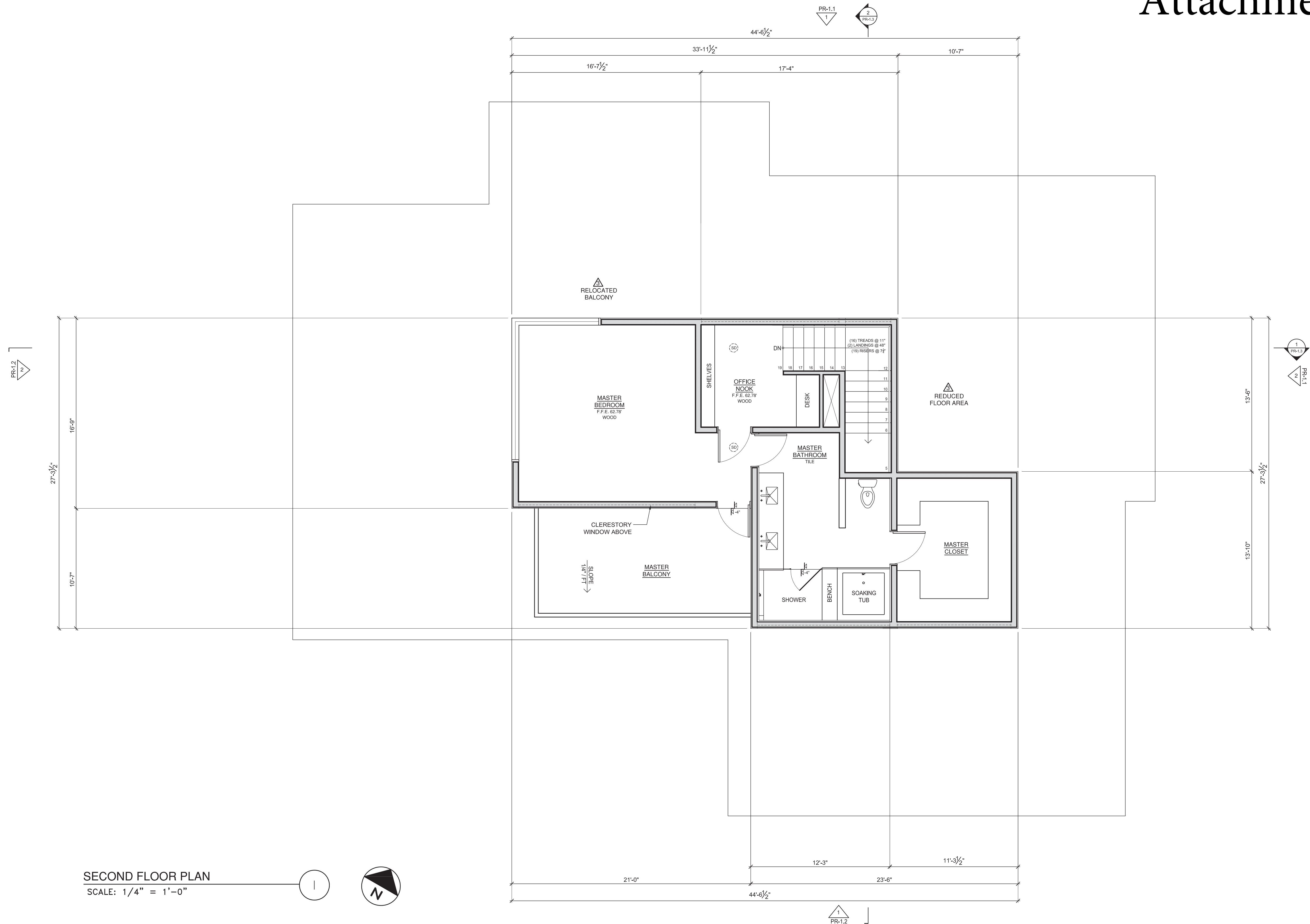


LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS • LAND SURVEYORS
SACRAMENTO REGION
3070 DOUGLAS BLVD., # 300
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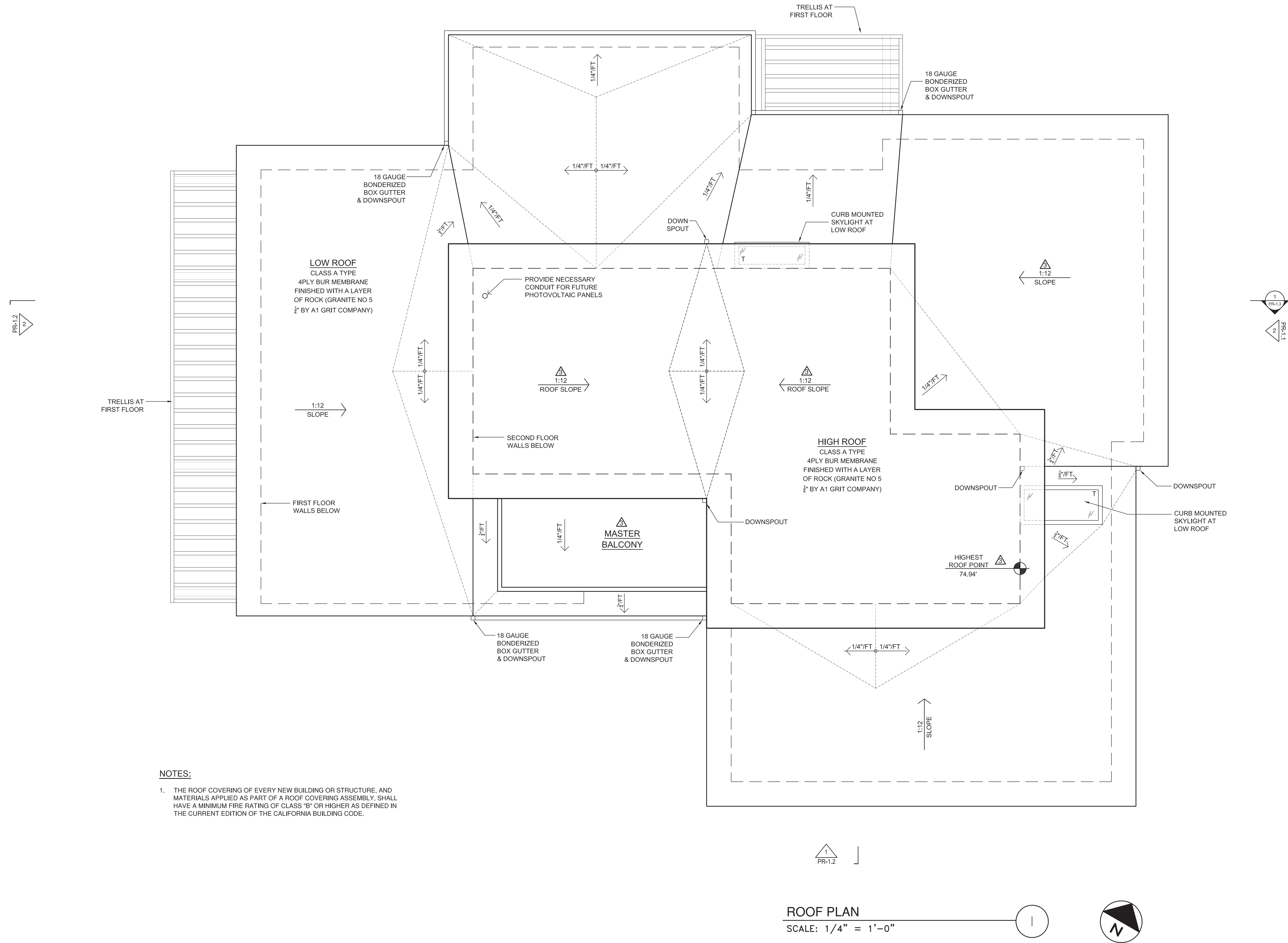
Attachment C







SECOND FLOOR PLAN
SCALE: 1/4" = 1'-0"

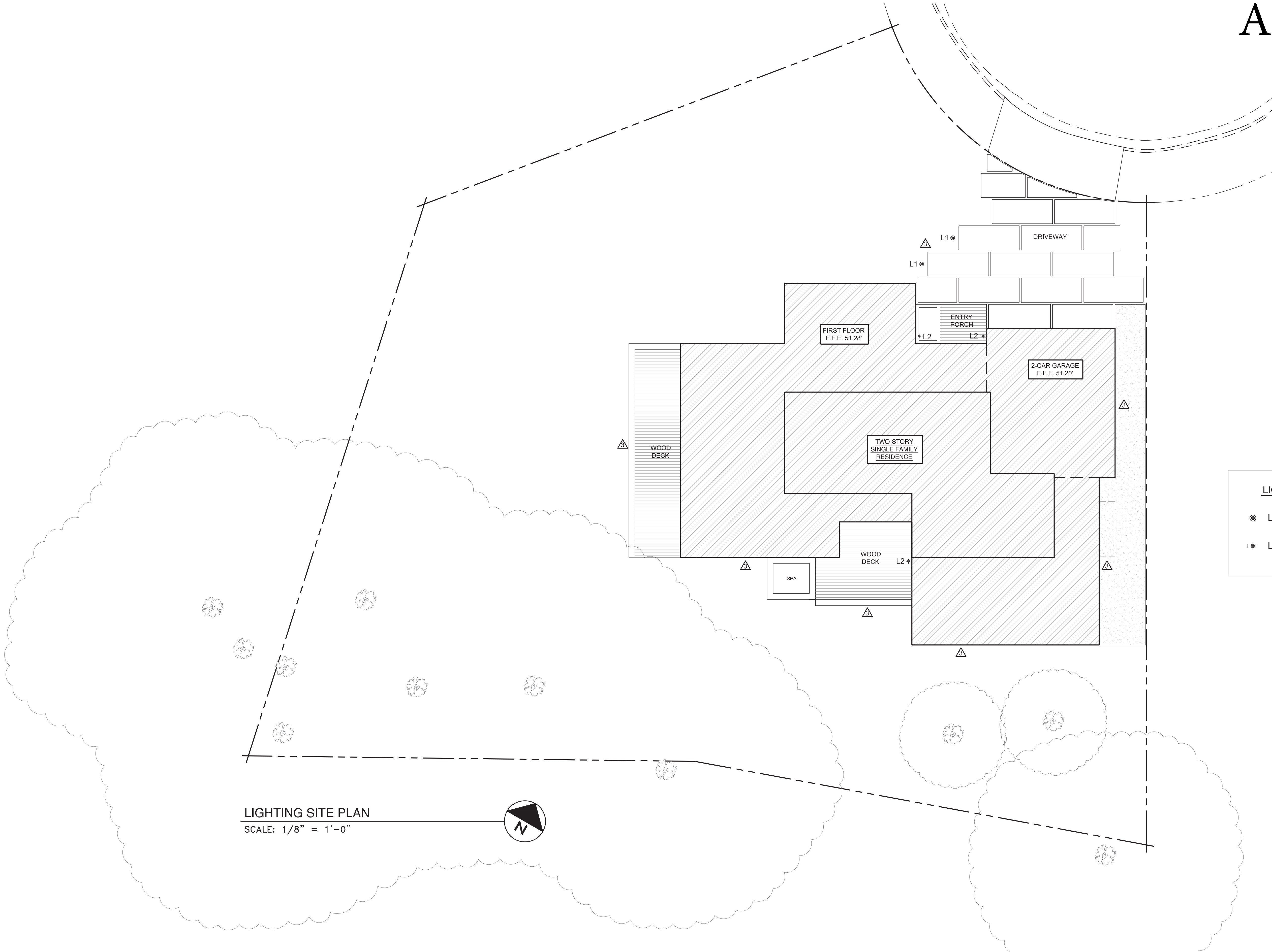


NOTES:

1. THE ROOF COVERING OF EVERY NEW BUILDING OR STRUCTURE, AND MATERIALS APPLIED AS PART OF A ROOF COVERING ASSEMBLY, SHALL HAVE A MINIMUM FIRE RATING OF CLASS "B" OR HIGHER AS DEFINED IN THE CURRENT EDITION OF THE CALIFORNIA BUILDING CODE.

ROOF PLAN
SCALE: 1/4" = 1'-0"





LIGHTING LEGEND

● L1 = LED PATH LIGHT
HEVI LITE HL-6500

✦ L2 = LED WALL SCONCE
LIGMAN UGI-31591

LIGHTING SITE PLAN
SCALE: 1/8" = 1'-0"

SEE CORRESPONDING LIGHTING SPECS IN SPEC BOOK PAGE 25-27

NATIVE CALIFORNIA PLANTS (TO ENHANCE SITE BIODIVERSITY)



MONTEREY CYPRESS TREE
(CUPRESSUS MACROCARPA)



LOW BLUE BLOSSOM
(CEANOTHUS THYRSIFLORUS REPENS)



YELLOW BUSH LUPINE
(LUPINUS ARBOREUS)



CALIFORNIA HUCKLEBERRY
(VACCINIUM OVATUM)



STICKY MONKEY FLOWER
(DIPLACUS AURANTIACUS)



BEACH STRAWBERRY
(FRAGARIA CHILOENSIS)



CALIFORNIA BROME
(BROMUS CARINATUS)



CALIFORNIA FIGWORT
(SCROPHULARIA CALIFORNICA)



CALIFORNIA HIGH GRASS
(DESCHAMPSIA CESPITOSA)



COMMON GUMPLANT
(GRINDELIA STRICTA VAR PLATYPHYLLA)



WATER PARSLEY
(OENANTHE SARMENTOSA)



CALIFORNIA POPPY
(ESCHSCHOLZIA CALIFORNICA)

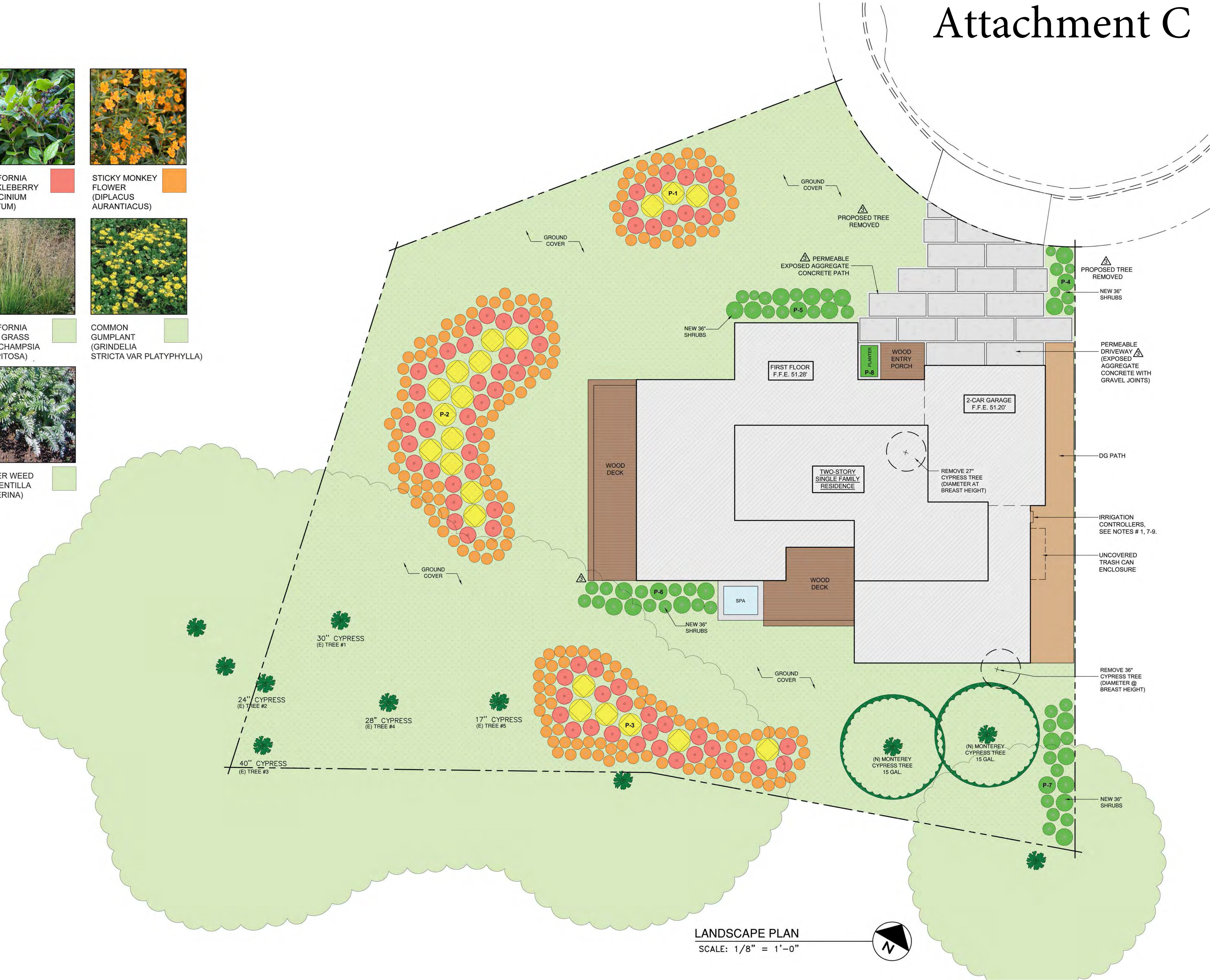


CALIFORNIA MANROOT
(MARAH FABACEUS)



SILVER WEED
(POTENTILLA ANSERINA)

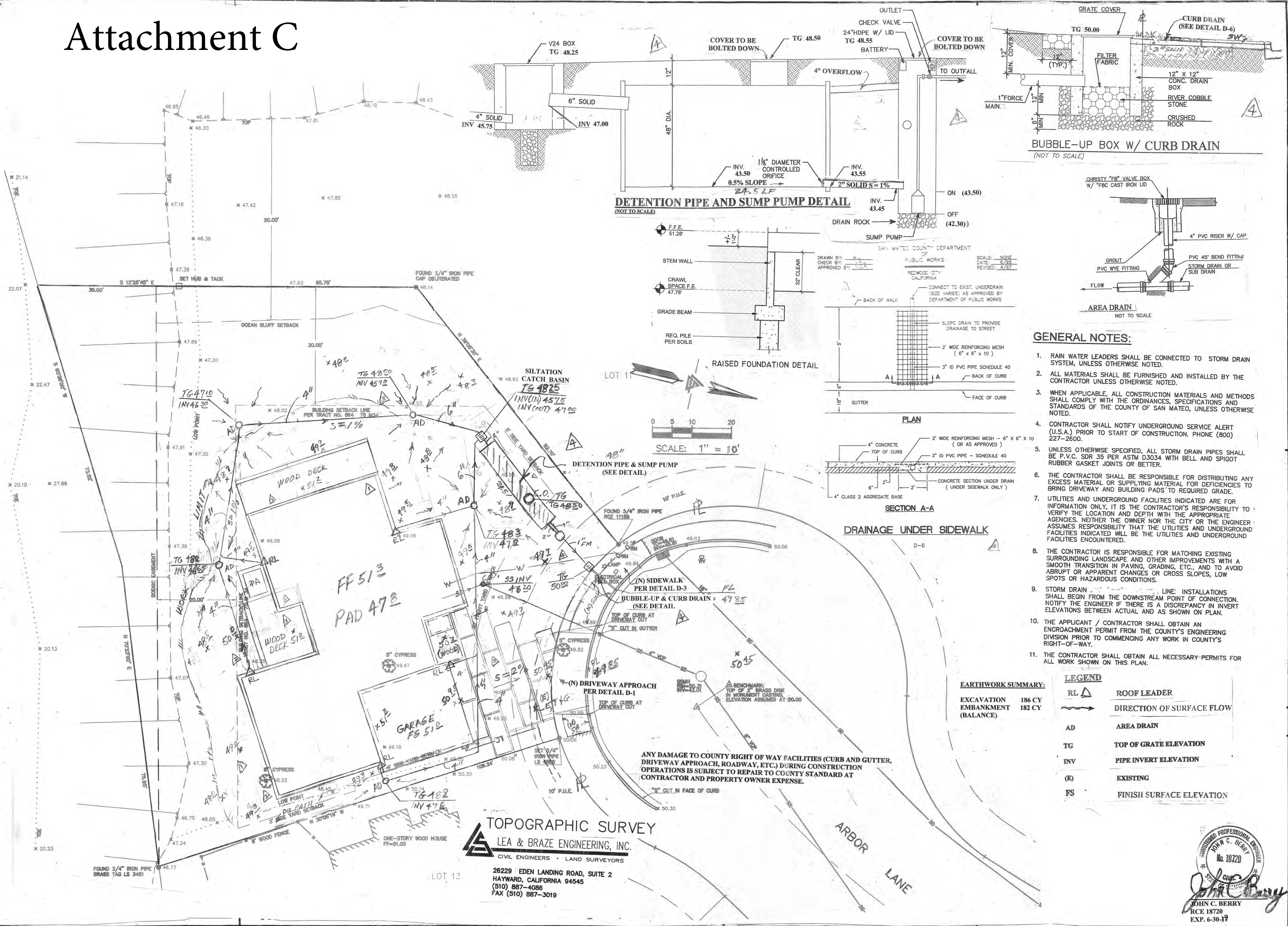
- NOTES:
- 1- SPRINKLER SYSTEM TO BE DRIP IRRIGATION.
 - 2- ALL PLANTING UTILIZED IS NATIVE AND EXISTING IN AREA (CLIMATE ADAPTED).
 - 3- 2,400 SF OF IRRIGATED PLANTING BEDS (P-1 - P-8) WITH NATIVE PLANTING.
 - 4- AREAS DISTURBED BY CONSTRUCTION ACTIVITY OUTSIDE OF PLANTING BEDS WILL BE RESEEDING WITH NATIVE GROUND COVER AS SPECIFIED.
 - 5- COMPOST INCORPORATED IN PLANTING BEDS P-1 THROUGH P-8, AT A RATE OF AT LEAST 4 CUBIC YARDS PER 1,000 SF TO A DEPTH OF 6" INTO LANDSCAPE AREA.
 - 6- A MIN 3" LAYER OF MULCH SHOULD BE APPLIED ON ALL EXPOSED SOIL SURFACES OF PLANTING AREAS IN PLANTING BEDS P-1 THROUGH P-8.
 - 7- IRRIGATION CONTROLLERS USE EVAPOTRANSPIRATION OR SOIL MOISTURE DATA & UTILIZE A RAIN SENSOR.
 - 8- IRRIGATION CONTROLLER PROGRAM DATA WILL NOT BE LOST DUE TO AN INTERRUPTION IN PRIMARY POWER SOURCE.
 - 9- AREAS LESS THAN 10' IN ANY DIRECTION UTILIZE SUB-SURFACE OR DRIP IRRIGATION THAT PREVENTS OVERSPRAY OR RUN OFF.



LANDSCAPE PLAN
SCALE: 1/8" = 1'-0"



Attachment C



BERRY & ASSOCIATES
1733 WOODSIDE ROAD, SUITE 335
REDWOOD CITY, CA 94061
PHONE: 650/368-0750 FAX: 650/368-1810

SITE GRADING, DRAINAGE & UTILITY PLAN
199 ARBOR LANE **MOSS BEACH, CA**

DRAWN BY: <i>JCB</i>
DESIGNED BY:
CHECKED BY:
SCALE: 1"=10'
DATE: 10/12/16
DRAWING NO. <i>3070</i>
SHEET C-1 1 OF 1

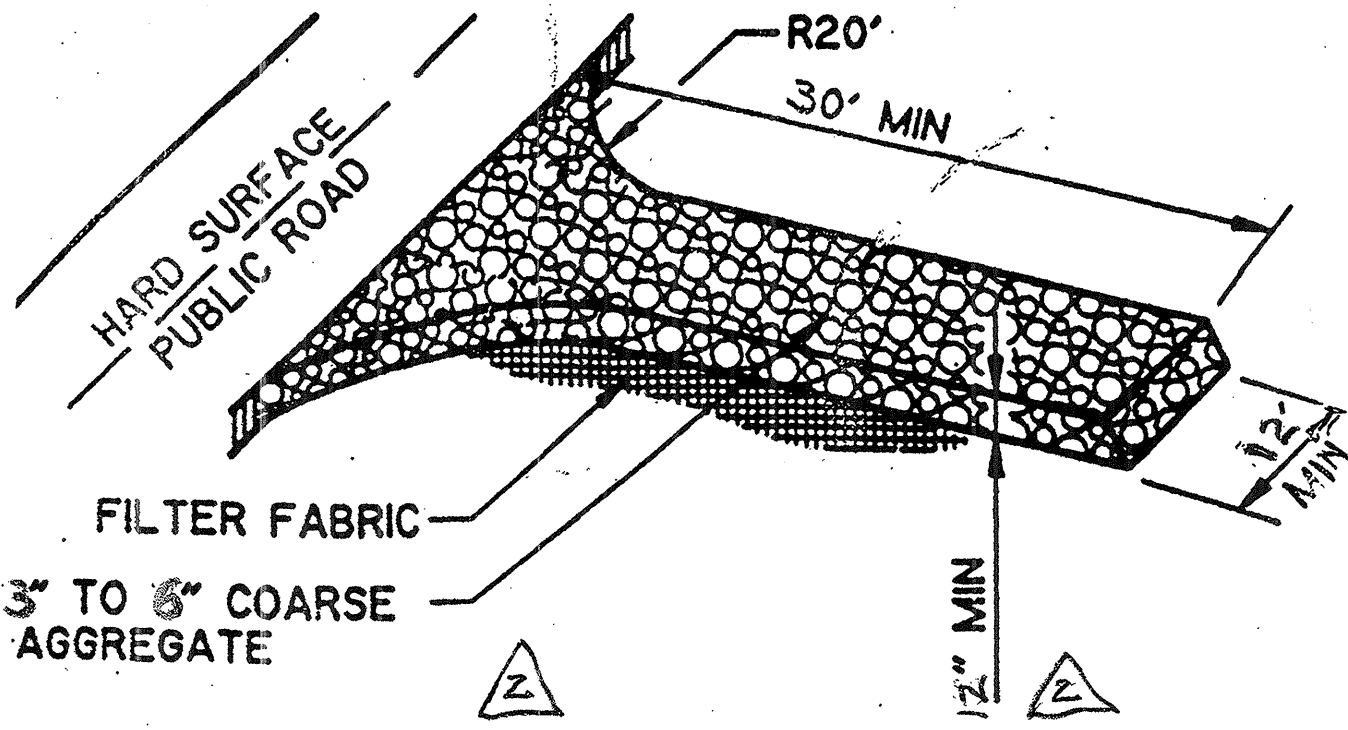
Attachment C

BEST MANAGEMENT PRACTICES (BMP's)
THE CONTRACTOR SHALL ADHERE TO
BEST MANAGEMENT PRACTICES (BMP's)
FOR STORM WATER POLLUTION PREVENTION
IN ALL CONSTRUCTION OPERATIONS.

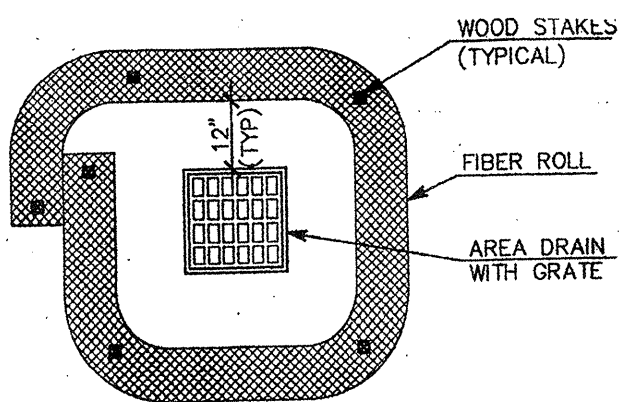
Prior to issuance of the grading permit "hard card," the property owner shall submit a schedule of all grading operations to the Current Planning Section, subject to review and approval by the Current Planning Section. Along with the "hard card" application, the applicant shall submit a letter to the Current Planning Section, at least two (2) weeks prior to commencement of grading, stating the date when grading operations will begin, anticipated end date of grading operations, including dates of revegetation, and estimated date of establishment of newly planted vegetation. If the schedule of grading operations calls for the grading to be completed in one grading season, then the winterizing plan shall be considered a contingent plan to be implemented if work falls behind schedule.

EROSION CONTROL
POINT OF CONTACT

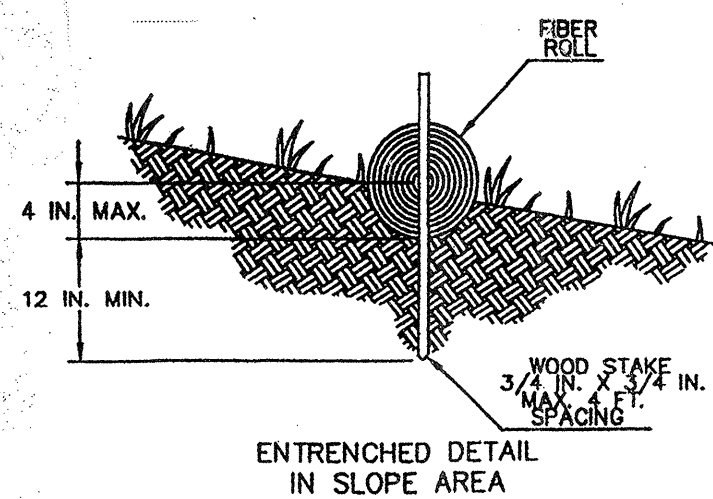
JOHN C. BERRY
BERRY AND ASSOCIATES
1733 WOODSIDE ROAD #335
REDWOOD CITY, CA 94061
PHONE: (650) 400-9003



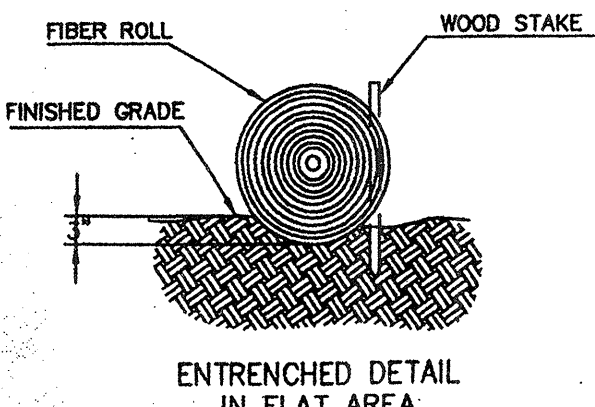
STABILIZED CONSTRUCTION ENTRANCE



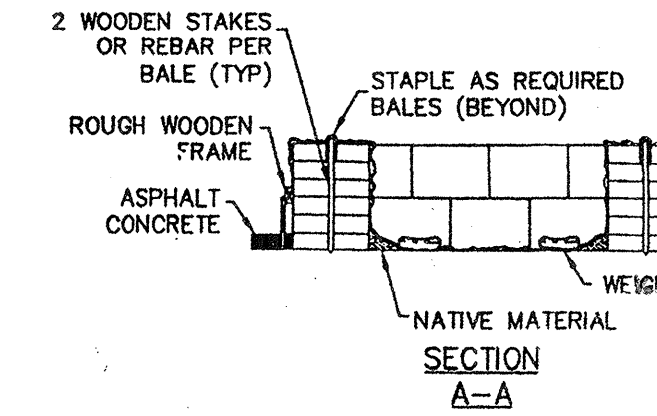
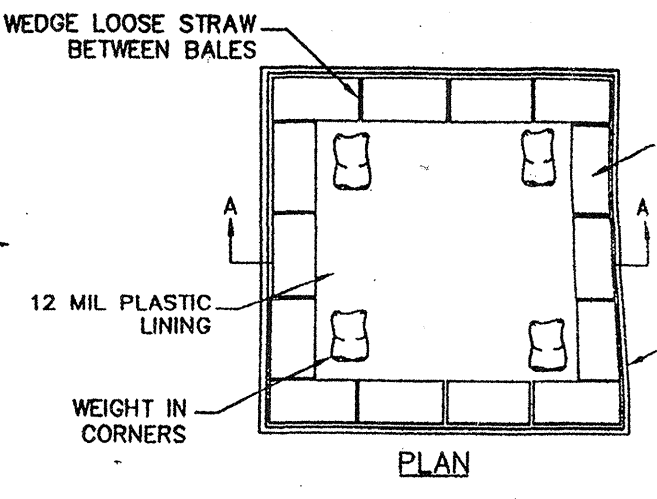
DRAIN INLET PROTECTION DETAIL
(NOT TO SCALE)



ENTRENCHED DETAIL
IN SLOPE AREA



ENTRENCHED DETAIL
IN FLAT AREA



TEMPORARY
CONCRETE WASHOUT
FACILITY

GENERAL EROSION CONTROL NOTES:

1. THE INTENT OF THE EROSION CONTROL PLAN IS TO MINIMIZE ANY WATER QUALITY IMPACTS IN THE FORM OF SEDIMENT POLLUTION TO MAIN CREEK & TRIBUTARIES.
2. A CONSTRUCTION ENTRANCE WILL BE INSTALLED PRIOR TO OF GRADING. LOCATION OF THE ENTRANCE MAY BE ADJUSTED BY THE CONTRACTOR TO FACILITATE GRADING OPERATIONS. ALL CONSTRUCTION TRAFFIC ENTERING THE PAVED ROAD MUST CROSS THE CONSTRUCTION ENTRANCE. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITION DEMAND, AND REPAIR OF ANY MEASURES USED TO SEDIMENTS.
3. WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH THE USE OF SAND BAGS, GRAVEL, BOARDS OR OTHER APPROVED METHODS.
4. THE EROSION AND SEDIMENT CONTROL MEASURES WILL BE OPERABLE ALL YEAR LONG, UNTIL GRADING AND INSTALLATION OF STORM DRAINAGE AND PERMANENT EROSION AND SEDIMENT CONTROL FACILITIES WILL BE COMPLETED. NO GRADING WILL OCCUR BETWEEN OCTOBER 1 AND APRIL 15 UNLESS AUTHORIZED BY THE CITY REPRESENTATIVE.
5. DURING THE RAINY SEASON, ALL PAVED AREAS WILL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE WILL BE MAINTAINED SO THAT A MINIMUM OF SEDIMENT-LOADED RUNOFF ENTERS THE STORM DRAINAGE SYSTEM.
6. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL FIELD MANUAL OF THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, 4TH EDITION, DATED AUGUST 2002.
7. AREAS DESIGNATED FOR PARKING OF CONSTRUCTION VEHICLES SHALL USE AGGREGATE OVER GEO-TEXTILE FABRIC.
8. LOCATE PORTABLE TOILETS AWAY FROM SURFACE WATER LOCATIONS AND STORM DRAIN INLETS.
9. PERFORM CLEARING AND EARTH-MOVING ACTIVITIES ONLY DURING DRY WEATHER. MEASURES ENSURE ADEQUATE EROSION AND SEDIMENT CONTROL SHALL BE INSTALLED PRIOR TO EARTH-MOVING ACTIVITIES AND CONSTRUCTION.
10. MEASURES TO ENSURE ADEQUATE EROSION AND SEDIMENT CONTROL ARE REQUIRED YEAR-ROUND. STABILIZE ALL DENUDEED AREAS AND MAINTAIN EROSION CONTROL MEASURES CONTINUOUSLY BETWEEN OCTOBER 1 AND APRIL 30.
11. STORE, HANDLE, AND DISPOSE OF CONSTRUCTION MATERIALS AND WASTES PROPERLY, SO AS TO PREVENT THEIR CONTACT WITH STORMWATER.
12. CONTROL AND PREVENT THE DISCHARGE OF ALL POTENTIAL POLLUTANTS, INCLUDING PAVEMENT CUTTING WASTES, PAINTS, CONCRETE, PETROLEUM PRODUCTS, CHEMICALS, WASH WATER OR SEDIMENTS, AND NON-STORMWATER DISCHARGES TO STORM DRAINS AND WATERCOURSES.
13. USE SEDIMENT CONTROLS OR FILTRATION TO REMOVE SEDIMENT WHEN DEWATERING SITE AND OBTAIN REGIONAL WATER QUALITY CONTROL BOARD (RWQCB) PERMIT(S) AS NECESSARY.
14. AVOID CLEANING, FUELING, OR MAINTAINING VEHICLES ON-SITE, EXCEPT IN A DESIGNATED AREA WHERE WASH WATER IS CONTAINED AND TREATED.
15. LIMIT AND TIME APPLICATIONS OF PESTICIDES AND FERTILIZERS TO PREVENT POLLUTED RUNOFF.
16. LIMIT CONSTRUCTION ACCESS ROUTES TO STABILIZED, DESIGNATED ACCESS POINTS.
17. AVOID TRACKING DIRT OR OTHER MATERIALS OFF-SITE. CLEAN OFF-SITE PAVED AREAS AND SIDEWALKS USING DRY SWEEPING METHODS.
18. TRAIN AND PROVIDE INSTRUCTION TO ALL EMPLOYEES AND SUBCONTRACTORS REGARDING THE WATERSHED PROTECTION MAINTENANCE STANDARDS AND CONSTRUCTION BEST MANAGEMENT PRACTICES.
19. PLACEMENT OF EROSION MATERIALS AT THESE LOCATIONS IS REQUIRED ON WEEKENDS AND DURING RAIN EVENTS AS SHOWN ON PLAN.
20. THE AREAS DELINEATED ON THE PLANS FOR PARKING, GRUBBING, STORAGE ETC., SHALL NOT BE ENLARGED OR RUN OVER.
21. CONSTRUCTION SITES ARE REQUIRED TO HAVE EROSION CONTROL MATERIALS ON-SITE DURING THE "OFF-SEASON."
22. DUST CONTROL IS REQUIRED YEAR-ROUND.
23. EROSION CONTROL MATERIALS SHALL BE STORED ON-SITE.
24. USE OF PLASTIC SHEETING BETWEEN OCTOBER 1ST AND APRIL 30TH IS NOT ACCEPTABLE, UNLESS FOR USE ON STOCKPILES WHERE THE STOCKPILE IS ALSO PROTECTED WITH FIBER ROLLS CONTAINING THE BASE OF THE STOCKPILE.
25. THE TREE PROTECTION SHALL BE IN PLACE BEFORE ANY GRADING, EXCAVATING OR GRUBBING IS STARTED.
26. CONSTRUCTION DURATION IS ANTICIPATED TO BE APPROXIMATELY 12 MONTHS. (BEGINNING APRIL 30, 2017)

KEY

- BIOWATTLES
- STABILIZED CONSTRUCTION ENTRANCE
- INLET PROTECTION

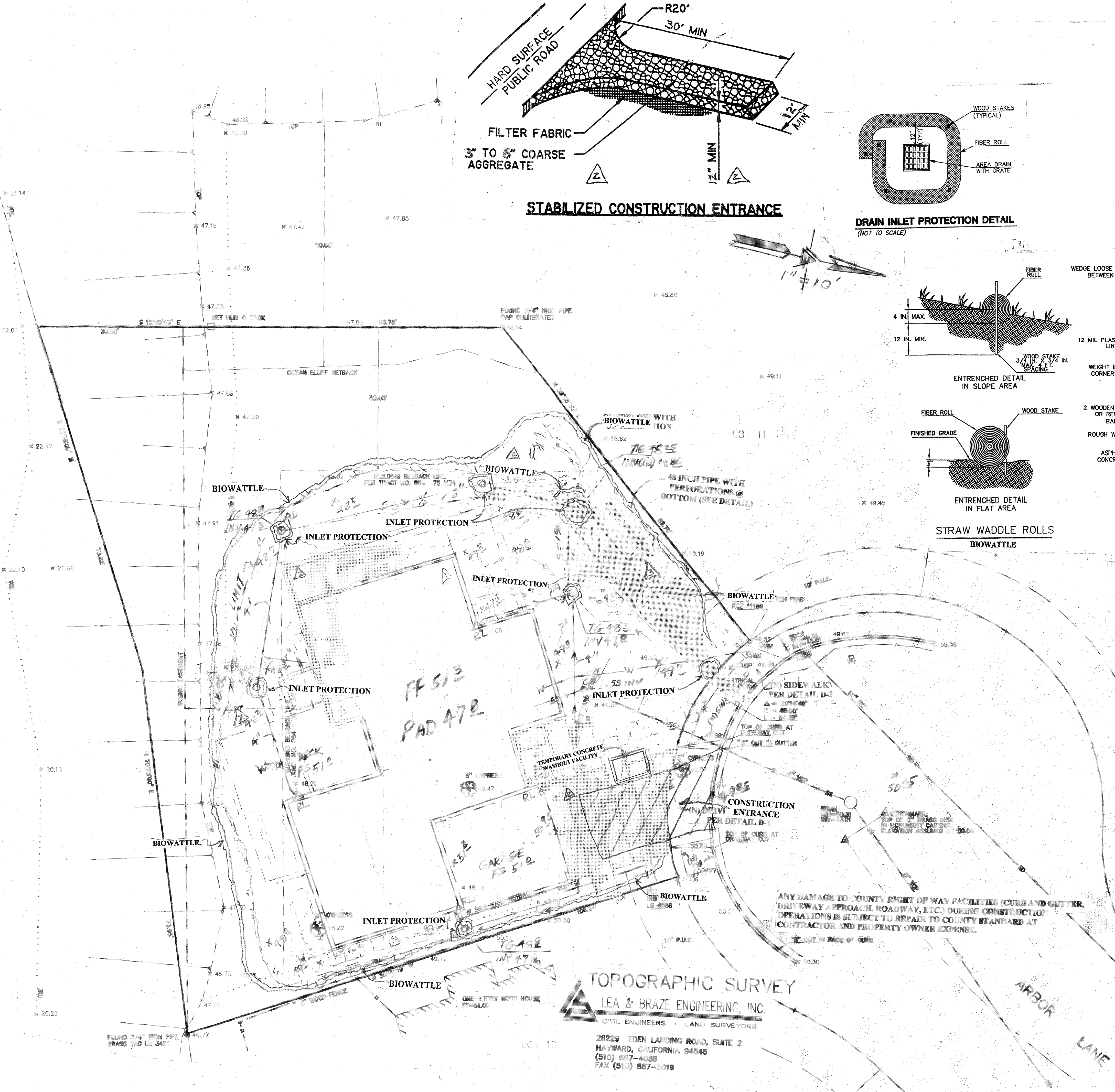
BERRY & ASSOCIATES
1733 WOODSIDE ROAD, SUITE 335
REDWOOD CITY, CA 94061
PHONE: 650/368-0750 FAX: 650/368-1810

EROSION CONTROL PLAN

199 ARBOR LANE
MOSS BEACH, CA

DRAWN BY:	JCB
DESIGNED BY:	
CHECKED BY:	
SCALE:	1" = 10'
DATE:	12/12/16
DRAWING NO.	3070
SHEET	C-2

JOHN C. BERRY
RCE 18720
EXP. 6-30-17



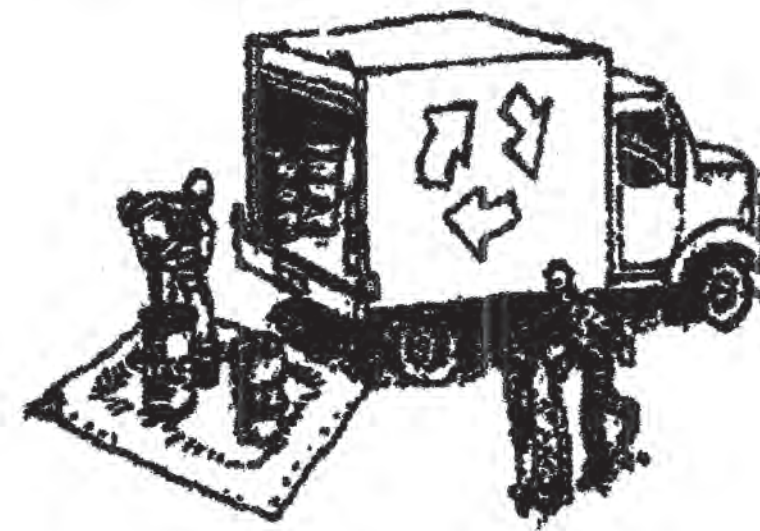
TOPOGRAPHIC SURVEY
LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS • LAND SURVEYORS
26229 EDEN LANDING ROAD, SUITE 2
HAYWARD, CALIFORNIA 94545
(510) 887-4086
FAX (510) 887-3019



Construction Best Management Practices (BMPs)

Construction projects are required to implement the stormwater best management practices (BMP) on this page, as they apply to your project, all year long.

Materials & Waste Management



Non-Hazardous Materials

- ☐ Berm and cover stockpiles of sand, dirt or other construction material with tarps when rain is forecast or if not actively being used within 14 days.
- ☐ Use (but don't overuse) reclaimed water for dust control.

Hazardous Materials

- ☐ Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, county, state and federal regulations.
- ☐ Store hazardous materials and wastes in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day or during wet weather or when rain is forecast.
- ☐ Follow manufacturer's application instructions for hazardous materials and be careful not to use more than necessary. Do not apply chemicals outdoors when rain is forecast within 24 hours.
- ☐ Arrange for appropriate disposal of all hazardous wastes.

Waste Management

- ☐ Cover waste disposal containers securely with tarps at the end of every work day and during wet weather.
- ☐ Check waste disposal containers frequently for leaks and to make sure they are not overfilled. Never hose down a dumpster on the construction site.
- ☐ Clean or replace portable toilets, and inspect them frequently for leaks and spills.
- ☐ Dispose of all wastes and debris properly. Recycle materials and wastes that can be recycled (such as asphalt, concrete, aggregate base materials, wood, gyp board, pipe, etc.)
- ☐ Dispose of liquid residues from paints, thinners, solvents, glues, and cleaning fluids as hazardous waste.

Construction Entrances and Perimeter

- ☐ Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from site and tracking off site.
- ☐ Sweep or vacuum any street tracking immediately and secure sediment source to prevent further tracking. Never hose down streets to clean up tracking.

Equipment Management & Spill Control



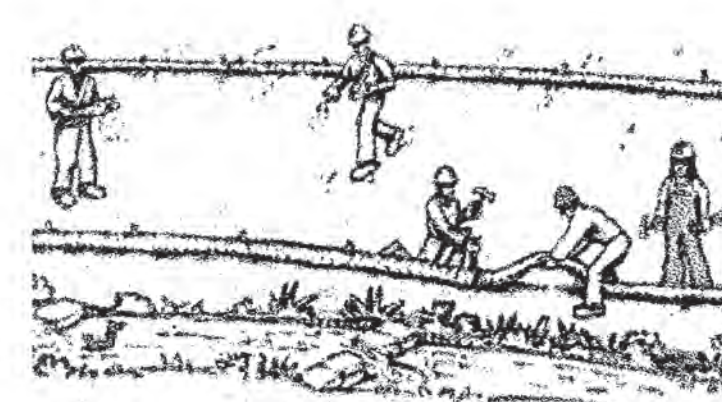
Maintenance and Parking

- ☐ Designate an area, fitted with appropriate BMPs, for vehicle and equipment parking and storage.
- ☐ Perform major maintenance, repair jobs, and vehicle and equipment washing off site.
- ☐ If refueling or vehicle maintenance must be done onsite, work in a bermed area away from storm drains and over a drip pan or drop cloths big enough to collect fluids. Recycle or dispose of fluids as hazardous waste.
- ☐ If vehicle or equipment cleaning must be done onsite, clean with water only in a bermed area that will not allow rinse water to run into gutters, streets, storm drains, or surface waters.
- ☐ Do not clean vehicle or equipment onsite using soaps, solvents, degreasers, or steam cleaning equipment.

Spill Prevention and Control

- ☐ Keep spill cleanup materials (e.g., rags, absorbents and cat litter) available at the construction site at all times.
- ☐ Inspect vehicles and equipment frequently for and repair leaks promptly. Use drip pans to catch leaks until repairs are made.
- ☐ Clean up spills or leaks immediately and dispose of cleanup materials properly.
- ☐ Do not hose down surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/or rags).
- ☐ Sweep up spilled dry materials immediately. Do not try to wash them away with water, or bury them.
- ☐ Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
- ☐ Report significant spills immediately. You are required by law to report all significant releases of hazardous materials, including oil. To report a spill: 1) Dial 911 or your local emergency response number. 2) Call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours).

Earthmoving



- ☐ Schedule grading and excavation work during dry weather.
- ☐ Stabilize all denuded areas, install and maintain temporary erosion controls (such as erosion control fabric or bonded fiber matrix) until vegetation is established.
- ☐ Remove existing vegetation only when absolutely necessary, and seed or plant vegetation for erosion control on slopes or where construction is not immediately planned.
- ☐ Prevent sediment from migrating offsite and protect storm drain inlets, gutters, ditches, and drainage courses by installing and maintaining appropriate BMPs, such as fiber rolls, silt fences, sediment basins, gravel bags, berms, etc.
- ☐ Keep excavated soil on site and transfer it to dump trucks on site, not in the streets.

Contaminated Soils

- ☐ If any of the following conditions are observed, test for contamination and contact the Regional Water Quality Control Board:
 - Unusual soil conditions, discoloration, or odor.
 - Abandoned underground tanks.
 - Abandoned wells
 - Buried barrels, debris, or trash.

Paving/Asphalt Work

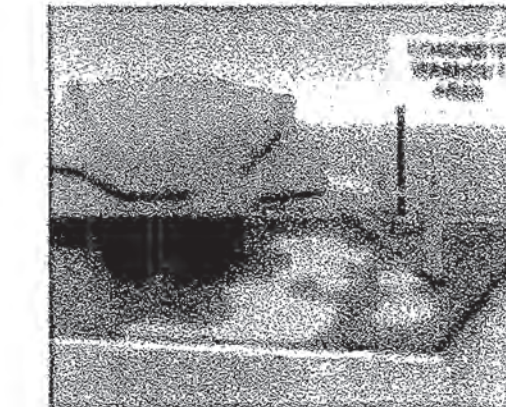


- ☐ Avoid paving and seal coating in wet weather or when rain is forecast, to prevent materials that have not cured from contacting stormwater runoff.
- ☐ Cover storm drain inlets and manholes when applying seal coat, tack coat, slurry seal, fog seal, etc.
- ☐ Collect and recycle or appropriately dispose of excess abrasive gravel or sand. Do NOT sweep or wash it into gutters.
- ☐ Do not use water to wash down fresh asphalt concrete pavement.

Sawcutting & Asphalt/Concrete Removal

- ☐ Protect nearby storm drain inlets when saw cutting. Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system.
- ☐ Shovel, absorb, or vacuum saw-cut slurry and dispose of all waste as soon as you are finished in one location or at the end of each work day (whichever is sooner).
- ☐ If sawcut slurry enters a catch basin, clean it up immediately.

Concrete, Grout & Mortar Application



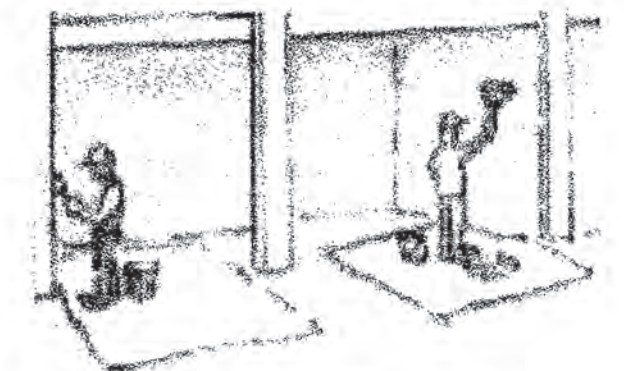
- ☐ Store concrete, grout, and mortar away from storm drains or waterways, and on pallets under cover to protect them from rain, runoff, and wind.
- ☐ Wash out concrete equipment/trucks offsite or in a designated washout area, where the water will flow into a temporary waste pit, and in a manner that will prevent leaching into the underlying soil or onto surrounding areas. Let concrete harden and dispose of as garbage.
- ☐ When washing exposed aggregate, prevent washwater from entering storm drains. Block any inlets and vacuum gutters, hose washwater onto dirt areas, or drain onto a bermed surface to be pumped and disposed of properly.

Landscaping



- ☐ Protect stockpiled landscaping materials from wind and rain by storing them under tarps all year-round.
- ☐ Stack bagged material on pallets and under cover.
- ☐ Discontinue application of any erodible landscape material within 2 days before a forecast rain event or during wet weather.

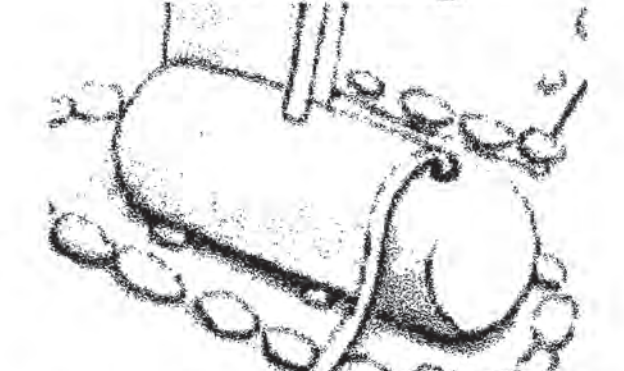
Painting & Paint Removal



Painting Cleanup and Removal

- ☐ Never clean brushes or rinse paint containers into a street, gutter, storm drain, or stream.
- ☐ For water-based paints, paint out brushes to the extent possible, and rinse into a drain that goes to the sanitary sewer. Never pour paint down a storm drain.
- ☐ For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of excess liquids as hazardous waste.
- ☐ Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash.
- ☐ Chemical paint stripping residue and chips and dust from marine paints or paints containing lead, mercury, or tributyltin must be disposed of as hazardous waste. Lead based paint removal requires a state-certified contractor.

Dewatering



- ☐ Discharges of groundwater or captured runoff from dewatering operations must be properly managed and disposed. When possible send dewatering discharge to landscaped area or sanitary sewer. If discharging to the sanitary sewer call your local wastewater treatment plant.
- ☐ Divert run-on water from offsite away from all disturbed areas.
- ☐ When dewatering, notify and obtain approval from the local municipality before discharging water to a street gutter or storm drain. Filtration or diversion through a basin, tank, or sediment trap may be required.
- ☐ In areas of known or suspected contamination, call your local agency to determine whether the ground water must be tested. Pumped groundwater may need to be collected and hauled off-site for treatment and proper disposal.

Storm drain polluters may be liable for fines of up to \$10,000 per day!

July 24, 2017

Attachment D

Carlos Zubieta
1725-A Abbot Kinney Boulevard
Venice, CA 90291

Dear Mr. Zubieta:

SUBJECT: Coastside Design Review Recommendation
Arbor Lane, Moss Beach
APN 037-123-430; County File No. PLN 2016-00444

At its meeting on July 13, 2017, the San Mateo County Coastside Design Review Committee (CDRC) considered your application for a design review recommendation to allow construction of a new 3,519 sq. ft. single-family residence with an attached 468 sq. ft. two-car garage, on a 14,320 sq. ft. legal parcel (recorded subdivision (X6D-448), as part of an associated public hearing-level Coastal Development Permit (CDP) and Grading Permit for 186 cubic yards (c.y.) of excavation and 182 c.y. of fill. Two significant trees are proposed for removal. The CDP is appealable to the California Coastal Commission.

The CDRC was unable to make the findings for a design review recommendation of approval based on certain design deficiencies. In order to resolve these deficiencies in the project's design, a more thorough review of the "Standards for Design for One-Family and Two-Family Residential Development in the Midcoast" manual is required. As such, requirements from the CDRC for further project redesign are as follows:

1. Section 6565.20(B)2 NEIGHBORHOOD CHARACTER: The proposed project is sited within a neighborhood that consists of similarly-sized one- and two-story single-family houses under 2,800 square feet. However, the proposed house is approximately 43% larger than the largest house in the immediate area. The size of the house should be reduced to a size compatible with surrounding houses, as by stepping the project down a hillside or further excavation would not mitigate the scale of the project.
2. Section 6565.20(C) SITE PLANNING AND STRUCTURE PLACEMENT 1c. Streams and Other Drainage Features: Recent area erosion is cause for concern for the planned structure on the site. All assessments over 12 months old should be updated to reflect current conditions to ensure longevity of the structure. The proposed placement of the building on the site does not adequately avoid stream and natural drainage features and protect them from erosion or siltation. Standards require avoiding structures near streams or natural drainage features and altering the site in a way that would cause significant erosion. The CDRC suggests further improvement of local storm drainage systems and protection of streams and drainage features from erosion and siltation by improving water retention and drainage on-site.



Planning staff recommends consulting the County Department of Public Works for any recommendations.

3. Section 6565.20(C)1e RELATIONSHIP TO OPEN SPACE: The neighborhood's proximity to designated open space is a defining factor of the neighborhood's character. Special attention should be paid to those transition or buffer areas where residential and open space land uses meet. The size and placement of the structure at the view corridor boundary does not meet this standard. The CDRC recommends that homeowner association view corridor requirements should be applicable to the build out on this site.
4. Section 6565.20(D)1b NEIGHBORHOOD SCALE: A house should appear to be proportional or "in scale" with other houses in the neighborhood. New houses should be of a consistent scale with the homes in the neighborhood through use of compatible building dimensions. The size of the proposed project is out of proportion to other houses in the neighborhood. Total building floor area is approximately 4,000 square feet. Comparable neighboring homes average 2,500 square feet.
5. Section 6565.20(F) LANDSCAPING, PAVED AREAS, FENCES LIGHTING AND NOISE: While the appearance of new residential structures is of primary importance, development should be designed to prevent adverse impacts to neighboring properties.
 1. Landscaping: Proposed landscaping should harmonize with existing vegetation on-site. A smooth transition between development and adjacent open areas should be maintained through plant materials that are native or appropriate to the area.
 2. Paved Areas: Hardscape areas should be permeable.
 3. Lighting: Exterior lighting can affect distant views from scenic corridors. The proposal includes downward-directed exterior lighting that is architecturally integrated with the house's design, style, material and colors, and is designed and located so light and glare are directed away from neighbors and confined to the site. Further minimize light and glare as viewed from scenic corridors and public view corridors and locate so light is directed away from neighbors.

Recommended Changes

1. Reduce the size of the structure to appear consistent with the size and scale of other houses in the neighborhood.
2. Landscaping:
 - a. Applicant should limit plantings in the view easement (front yard) to Coastal Prairie type, maximum 2 feet tall (grasses, beach strawberry, etc.).
 - b. Replace Drosanthemum (iceplant) with native iceplant or another California native species.

- c. Consider replacing Purple Cudweed and Cotton Batting Plant with other California natives. Both are natives, but they appear "weedy."
 - d. Replace Vaccinium Parvifolium and Rhododendron Occidentale with plants that will survive in an exposed marine environment.
 - e. Restrict California Blackberry to the rear of the property (it will eventually spread to a much larger area).
 - f. Replace Stinging Nettle with another California native. If it moves into the open space next door, it can negatively impact visitors to the open space.
 - g. Refer to the County Parks Department for recommendations on landscaping appropriate for project site.
3. Reduce the number of tree replacement based on the feasibility of the site.
 4. Remove proposed trees at street side from landscape plan to preserve view corridors and prevent canopy from encroaching on the neighboring property.
 5. Reduce the volume and improve the quality of runoff into the nearby creek by replacing all solid concrete in landscaped areas which drain to the creek with permeable material (pavers or grasscrete).
 6. Replace post landscape path lights with low level, at ground, recessed lighting. Reduce the number of exterior lighting fixtures to: one at the front door and entry points and remove both lights on the east side of the building. Consider alternative to flex tube lights to low level, recessed deck lighting in view corridors.

Suggestions

1. New environmental and geotechnical studies are recommended by the CDRC for the associated CDP due to outdated information exceeding one year and recent ground movement at and around the site. The Midcoast Community Council has also recommended a coastal erosion study for assessment of hazard exposure (see letter to Planning dated November 9, 2016).
2. Consider low level, recessed deck lighting instead of flex tube lights in view corridors.

As such, you were presented with the following available options at the end of the CDRC's deliberation of the project: (i) request for a decision from the CDRC on the plans presented or (ii) request that the project be considered at the next meeting to provide you with ample time to consider and incorporate the elements recommended for project redesign. You

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July 24, 2017

chose the second option, and the CDRC directed staff to schedule your project for consideration at a later date.

Please contact Carmelisa Morales, Project Planner, at 650/363-1873, if you have any questions.

To provide feedback, please visit the Department's Customer Survey at the following link:
<http://planning.smcgov.org/survey>.

Sincerely,



Dennis P. Aguirre, Design Review Officer

CM:pac - CJMBB0422_WPN.DOCX

cc: Stuart Grunow, Member Architect
Melanie Hohnbaum, Moss Beach Community Representative
Zubar LLC, Property Owner
Lisa Ketcham, Midcoast Community Council
Kris Lannin Liang, Interested Member of the Public
Steven and Melinda King, Interested Members of the Public
Sarah Vespremi, Interested Member of the Public
Gary Horsman, Interested Member of the Public
Rich Becker, Interested Member of the Public
Jim Scheinberg, Interested Member of the Public
Stephen Velyvis, Interested Member of the Public

December 6, 2017

Attachment D*

Carlos Zubieta
1725-A Abbott Kinney Boulevard
Venice, CA 90291

Dear Mr. Zubieta:

SUBJECT: Coastside Design Review Recommendation of Approval
Arbor Lane, Moss Beach
APN 037-123-430; County File No. PLN 2016-00444

At its meeting on November 9, 2017, the San Mateo County Coastside Design Review Committee (CDRC) considered your application for design review recommendation to allow construction of a new 3,338 sq. ft. single-family residence plus an attached 468 sq. ft. two-car garage on an undeveloped 14,320 sq. ft. parcel located on Arbor Lane. The project includes a hearing-level Coastal Development Permit (CDP) and a Grading Permit. A total of 368 cubic yards (c.y.) of grading (186 c.y. of cut and 182 c.y. of fill) is proposed. Two trees are proposed for removal. The project is appealable to the California Coastal Commission.

Prior to the Planning Commission review of the project at a future public hearing date, this project will require completion and circulation of an Initial Study and Mitigated Negative Declaration (IS/MND) pursuant to the California Environmental Quality Act (CEQA) to assess its potential environmental impacts.

Based on the plans, application forms, and accompanying materials submitted, the CDRC recommended approval of your project based on and subject to the findings, conditions, and recommendations in the following sections. Please remove the story poles and all other materials used to demonstrate the proposed building footprint from the project site immediately.

FINDINGS

The Coastside Design Review Committee found that:

1. For the Design Review

The project, as proposed and conditioned, has been reviewed under and found to be in compliance with the Design Review Standards for One-Family and Two-Family Residential Development in the Midcoast, Section 6565.20, of the San Mateo County Zoning Regulations, specifically elaborated as follows:



- a. Section 6565.20(B) Neighborhood Definition and Neighborhood Character;
2. Neighborhood Character (p. 3): The project is situated within a neighborhood that consists of similarly sized one- and two-story single family residences. Although larger in size than other houses in the area, the size of the house was reduced in footprint in the interest of preserving the views of the neighborhood. The applicant has reduced the second story of the residence and relocated a deck to the back of the property to preserve privacy and minimize the visual impacts from many of the neighboring homes.
- b. Section 6565.20(F) Landscaping, Paved Areas, Fences, Lighting and Noise;
1. Landscaping (pp. 22-25): While the appearance of new residential structures is of primary importance, development should be designed to prevent adverse impacts to neighboring properties. Proposed landscaping should harmonize with existing vegetation on-site. A smooth transition between development and adjacent open areas should be maintained through plant materials that are native or appropriate to the area. Exterior lighting can affect distant views from scenic corridors. The proposal includes downward-directed exterior lighting that is architecturally integrated with the house's design, style, material and colors, and is designed and located so light and glare are directed away from neighbors and confined to the site. The revised landscape plan is consistent with the recommendations presented in the July 13, 2017 meeting.

RECOMMENDED CONDITIONS

Current Planning Section

1. The project shall be constructed in compliance with the plans once approved by the Planning Commission (or final decision-making body) and in substantial compliance with plans reviewed by the Coastsides Design Review Committee (CDRC) on November 9, 2017. Any changes or revisions to the approved plans shall be submitted to the Design Review Officer for review and approval prior to implementation. Minor adjustments to the project may be approved by the Design Review Officer if they are consistent with the intent of and are in substantial conformance with this approval. Alternatively, the Design Review Officer may refer consideration of the revisions to the Coastsides Design Review Committee, with applicable fees to be paid.
2. The applicant shall indicate the following on the plans submitted for a building permit, as stipulated by the Coastsides Design Review Committee:
 - a. Reduce front entry Dark Sky-compliant light fixtures by one light fixture.
 - b. Dark Sky-compliant light fixtures in front yard area shall not exceed 12 inches in height.

Recommendation for Applicant's Consideration:

- (1) Consider the environmental benefits of preserving instead of removing the 36" diameter at breast height (dbh) cypress tree at the rear of the property located close to the creek edge.
- (2) Consider reducing the rear doorway from double doors to a single door to allow for a reduction in square footage in the living and guest rooms and to shift the first floor by the width of the doorway. This minor modification will achieve a sizable reduction in square footage and be more in line with neighboring structures.
3. The applicant shall provide "finished floor elevation verification" to certify that the structure is actually constructed at the height shown on the submitted plans. The applicant shall have a licensed land surveyor or engineer establish a baseline elevation datum point in the vicinity of the construction site.
 - a. The applicant shall maintain the datum point so that it will not be disturbed by the proposed construction activities until final approval of the building permit.
 - b. This datum point and its elevation shall be shown on the submitted site plan. This datum point shall be used during construction to verify the elevation of the finished floors relative to the existing natural or to the grade of the site (finished grade).
 - c. Prior to Planning approval of the building permit application, the applicant shall also have the licensed land surveyor or engineer indicate on the construction plans: (1) the natural grade elevations at the significant corners (at least four) of the footprint of the proposed structure on the submitted site plan, and (2) the elevations of proposed finished grades.
 - d. In addition, (1) the natural grade elevations at the significant corners of the proposed structure, (2) the finished floor elevations, (3) the topmost elevation of the roof, and (4) the garage slab elevation must be shown on the plan, elevations, and cross-section (if one is provided).
 - e. Once the building is under construction, prior to the below floor framing inspection or the pouring of the concrete slab (as the case may be) for the lowest floor(s), the applicant shall provide to the Building Inspection Section a letter from the licensed land surveyor or engineer certifying that the lowest floor height, as constructed, is equal to the elevation specified for that floor in the approved plans. Similarly, certifications on the garage slab and the topmost elevation of the roof are required.
 - f. If the actual floor height, garage slab, or roof height, as constructed, is different than the elevation specified in the plans, then the applicant shall cease all construction and no additional inspections shall be approved until a revised set of plans is submitted to and subsequently approved by both the Building Official and the Community Development Director.

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4. Projects subject to Provision C.3.i (individual single-family home projects that create and/or replace 2,500 square feet or more of impervious surface, and other projects that create and/or replace at least 2,500 square feet of impervious surface but are not C.3 Regulated Projects) shall implement at least one of the six site design measures listed below:
 - a. Direct roof runoff into cisterns or rain barrels and use rainwater for irrigation or other non-potable use.
 - b. Direct roof runoff onto vegetated areas.
 - c. Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
 - d. Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
 - e. Construct sidewalks, walkways, and/or patios with permeable surfaces.
 - f. Construct bike lanes, driveways, and/or uncovered parking lots with permeable surfaces.
5. The property owner shall adhere to the San Mateo Countywide Stormwater Pollution Prevention Program "General Construction and Site Supervision Guidelines," including, but not limited to, the following:
 - a. Delineation with field markers of clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees, and drainage courses within the vicinity of areas to be disturbed by construction and/or grading.
 - b. Protection of adjacent properties and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching, or other measures as appropriate.
 - c. Performing clearing and earth-moving activities only during dry weather.
 - d. Stabilization of all denuded areas and maintenance of erosion control measures continuously between October 1 and April 30.
 - e. Storage, handling, and disposal of construction materials and wastes properly, so as to prevent their contact with stormwater.
 - f. Control and prevention of the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, wash water or sediments, and non-stormwater discharges to storm drains and watercourses.

- g. Use of sediment controls or filtration to remove sediment when dewatering site and obtain all necessary permits.
 - h. Avoiding cleaning, fueling, or maintaining vehicles on-site, except in a designated area where wash water is contained and treated.
 - i. Limiting and timing applications of pesticides and fertilizers to prevent polluted runoff.
 - j. Limiting construction access routes and stabilization of designated access points.
 - k. Avoiding tracking dirt or other materials off-site; cleaning off-site paved areas and sidewalks using dry sweeping methods.
 - l. Training and providing instruction to all employees and subcontractors regarding the Watershed Protection Maintenance Standards and construction Best Management Practices.
 - m. Additional Best Management Practices in addition to those shown on the plans may be required by the Building Inspector to maintain effective stormwater management during construction activities. Any water leaving the site shall be clear and running slowly at all times.
 - n. Failure to install or maintain these measures will result in stoppage of construction until the corrections have been made and fees paid for staff enforcement time.
6. The applicant shall include an erosion and sediment control plan to comply with the County's Erosion Control Guidelines on the plans submitted for the building permit. This plan shall identify the type and location of erosion control measures to be installed upon the commencement of construction in order to maintain the stability of the site and prevent erosion and sedimentation off-site. A separate tree protection plan may also be required as part of the building permit. Species and size of trees shall be indicated on the plan (size shall be measured by diameter at breast height (dbh) method).
7. An Erosion Control and/or Tree Protection Inspection is required prior to the issuance of a building permit for grading, construction, and demolition purposes, as the project requires tree protection of significant tree(s). Once all review agencies have approved your Building Permit, you will be notified that an approved job copy of the Erosion Control and/or Tree Protection Plan is ready for pick-up at the Planning counter of the Planning and Building Department. Once the Erosion Control and/or Tree Protection measures have been installed per the approved plans, please contact Jeremiah Pons, Building/Erosion Control Inspector, at 650/599-1592 or jpons@smcgov.org, to schedule a pre-site inspection. A \$144 inspection fee will be assessed to the Building Permit for the inspection. If the initial pre-site inspection is not approved, an additional inspection fee will be assessed for each required re-inspection until the job site passes the Pre-Site Inspection, or as determined by the Building Inspection Section.

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8. Due to the site's location within the watershed of the James Fitzgerald Marine Reserve, an Area of Special Biological Significance, the applicant shall install adequate erosion control during the period(s) of land disturbance. The County will monitor compliance with this condition by conducting weekly construction inspections during the rainy season for the period(s) of land disturbance, as required by the State Water Board's Special Protections.
9. The project meets the definition of a Stormwater Regulated Site (SWRS) Site (e.g., project disturbs 1 acre or more of land, needs grading permit, involves work within a waterway, OR involves new construction or major remodel in an area that is within 100 feet of a creek, has slope of 20% or more). Monthly erosion and sediment control inspections by the County are required during the rainy season, as required by the Regional Water Quality Control Board.
10. All new power and telephone utility lines from the street or nearest existing utility pole to the main dwelling and/or any other structure on the property shall be placed underground.
11. The applicant shall apply for a building permit and shall adhere to all requirements from the Building Inspection Section, the Geotechnical Section, the Department of Public Works, and the Coastside Fire Protection District.
12. No site disturbance shall occur, including any grading or tree/vegetation removal, until a building permit has been issued.
13. To reduce the impact of construction activities on neighboring properties, comply with the following:
 - a. All debris shall be contained on-site; a dumpster or trash bin shall be provided on-site during construction to prevent debris from blowing onto adjacent properties. The applicant shall monitor the site to ensure that trash is picked up and appropriately disposed of daily.
 - b. The applicant shall remove all construction equipment from the site upon completion of the use and/or need of each piece of equipment which shall include but not be limited to tractors, back hoes, cement mixers, etc.
 - c. The applicant shall ensure that no construction-related vehicles shall impede through traffic along the right-of-way on Arbor Lane. All construction vehicles shall be parked on-site outside the public right-of-way or in locations which do not impede safe access on Arbor Lane. There shall be no storage of construction vehicles in the public right-of-way.
14. The exterior color samples submitted to the CDRC are approved. Color verification shall occur in the field after the applicant has applied the approved materials and colors but before a final inspection has been scheduled.

15. Noise sources associated with demolition, construction, repair, remodeling, or grading of any real property shall be limited to the hours from 7:00 a.m. to 6:00 p.m., weekdays and 9:00 a.m. to 5:00 p.m., Saturdays. Said activities are prohibited on Sundays, Thanksgiving, and Christmas (San Mateo Ordinance Code Section 4.88.360).
16. Installation of the approved landscape plan is required prior to final building inspection.
17. The landscape plan shall comply with the Water Efficient Landscape Ordinance (WELO):
 - a. At the building permit application stage, the project shall demonstrate compliance with the Water Efficient Landscape Ordinance (WELO) and provide required forms. WELO applies to new landscape projects equal to or greater than 500 sq. ft. A prescriptive checklist is available as a compliance option for projects under 2,500 sq. ft. WELO also applies to rehabilitated landscape projects equal to or greater than 2,500 sq. ft.

The following restrictions apply to projects using the prescriptive checklist:

- (1) Compost: Project must incorporate compost at a rate of at least four (4) cubic yards per 1,000 sq. ft. to a depth of 6 inches into landscape area (unless contra-indicated by a soil test).
- (2) Plant Water Use (Residential): Install climate adapted plants that require occasional, little, or no summer water (average WUCOLS plant factor 0.3) for 75% of the plant area excluding edibles and areas using recycled water.
- (3) Mulch: A minimum 3-inch layer of mulch should be applied on all exposed soil surfaces of planting areas, except in areas of turf or creeping or rooting groundcovers.
- (4) Turf: Total turf area shall not exceed 25% of the landscape area. Turf is not allowed in non-residential projects. Turf (if utilized) is limited to slopes not exceeding 25% and is not used in parkways less than 10 feet in width. Turf, if utilized in parkways, is irrigated by sub-surface irrigation or other technology that prevents overspray or runoff.
- (5) Irrigation System: The property shall certify that Irrigation controllers use evapotranspiration or soil moisture data and utilize a rain sensor; Irrigation controller programming data will not be lost due to an interruption in the primary power source; and Areas less than 10 feet in any direction utilize sub-surface irrigation or other technology that prevents overspray or runoff.

Coastside Fire Protection District

18. Smoke Detection: As per the California Building Code (CBC), State Fire Marshal Regulations, and the Coastside Fire Protection District (CFPD) Ordinance 2016-01, the

applicant is required to install State Fire Marshal approved and listed smoke detectors which are hard wired, interconnected, and have battery backup. These detectors are required to be placed in each new and reconditioned sleeping room and at a point centrally located in the corridor or area giving access to each separate sleeping area. In existing sleeping rooms, areas may have battery powered smoke alarms. A minimum of one detector shall be placed on each floor. Smoke detectors shall be tested and approved prior to the building final inspection.

19. Occupancy Separation: Per the 2016 CBC, Section 406.1.4, a one-hour occupancy separation wall shall be installed with a solid core, 20-minute fire rated, self-closing door assembly with smoke gasket between the garage and the residence. All electrical boxes installed in rated walls shall be metal or protected.
20. Address Numbers: All buildings that have a street address shall have the number of that address on the building, mailbox, or other type of sign at the driveway entrance in such a manner that the number is easily and clearly visible from either direction of travel from the street. New residential buildings shall have internally illuminated address numbers contrasting with the background so as to be seen from the public way fronting the building. Residential address numbers shall be at least six feet above the finished surface of the driveway. An address sign shall be placed at each break of the road where deemed applicable by the San Mateo County Fire Department. Numerals shall be contrasting in color to their background and shall be no less than 4 inches in height, and have a minimum 3/4-inch stroke. Remote signage shall be a 6" x 18" green reflective metal sign.
21. Roof Covering: Per CFPDC 2016-01, the roof covering of every new building or structure, and materials applied as part of a roof covering assembly, shall have a minimum fire rating of Class "B" or higher as defined in the current edition of the California Building Code.
22. Vegetation Management: Per CFPDC 2016-01, the 2016 California Fire Code (CFC) and Public Resources Code (PRC) 4291:
 - a. A fuel break of defensible space is required around the perimeter of all structures to a distance of not less than 30 feet and may be required to a distance of 100 feet or to the property line. In the State Responsible Area (SRA), the fuel break is 100 feet or to the property line.
 - b. Trees located within the defensible space shall be pruned to remove dead and dying portions, and limbed up 6 to 10 feet above the ground. New trees planted in the defensible space shall be located no closer than 10 feet to adjacent trees when fully grown or at maturity.
 - c. Remove that portion of any existing tree, which extends within 10 feet of the outlet of a chimney or stovepipe or is within 5 feet of any structure.

23. Fire Flow: A fire flow of 1,000 gpm for 2 hours with a 20-psi residual operating pressure must be available as specified by additional project conditions to the project site. The applicant shall provide documentation including hydrant location, main size, and fire flow report at the building permit application stage. Inspection required prior to Fire's final approval of the building permit or before combustibles are brought on-site.
24. Automatic Fire Sprinkler System: As per San Mateo County Building Standards and CFPD Ordinance 2016-01, the applicant is required to install an approved automatic fire sprinkler system meeting the requirements of NFPA-13D throughout the proposed or improved dwelling and garage. All attic access locations will be provided with a pilot head on a metal upright. All areas that are accessible for storage purposes shall be equipped with fire sprinklers including closets and bathrooms. The only exception is small linen closets less than 24 square feet with full depth shelving. The plans for this system must be submitted to the San Mateo County Planning and Building Department. A building permit will not be issued until plans are received, reviewed, and approved. Upon submission of the plans, the County will forward a complete set to the Coastside Fire Protection District for review. Fees shall be paid prior to plan review.
25. Exterior Bell and Interior Horn/Strobe: are required to be wired into the required flow switch on your fire sprinkler system. The bell, horn/strobe and flow switch, along with the garage door opener are to be wired into a separate circuit breaker at the main electrical panel and labeled.
26. Fuel Break: Maintain around and adjacent to such buildings or structures a fuel break/firebreak made by removing and clearing away flammable vegetation for a distance of not less than 30 feet and up to 100 feet around the perimeter of all structures, or to the property line, if the property line is less than 30 feet from any structure.
27. Occupancy: The applicant shall install the proper occupancy separations, as per current California Building and Residential Codes. Plans at the building permit application stage shall include listing and construction details. Inspections will occur throughout construction and prior to Fire's final approval of the building permit.
28. Installation of underground sprinkler pipes shall be flushed and visually inspected by the CFPD prior to hook-up to riser. Any soldered fittings must be pressure tested with trench open.
29. "No Parking Signs" are required in the existing turnaround.
30. At the building permit stage, the plans shall address and/or include the following:
 - a. Add following note to title page: Building will be protected by an automatic fire sprinkler system.

- b. Add the following note: Escape or rescue windows shall have a minimum net clear openable area of 5.7 sq. ft., 5.0 sq. ft. allowed at grade. The minimum net clear openable height dimension shall be 24 inches. The net clear openable width dimension shall be 20 inches. Finished sill height shall be no more than 44 inches above the finished floor.
 - c. Identify rescue windows in each bedroom and verify that they meet all requirements. Include on plans.
 - d. New attached garage must meet occupancy separation requirements. Provide note and detail (CRC R302.5/R302.6).
 - e. Add following note: New residential buildings shall have internally illuminated address numbers contrasting with the background so as to be seen from the public roadway fronting the building. Residential address numbers shall be at least 6 feet above the finished surface of the driveway. Where buildings are located remotely to the public roadway, additional signage at the driveway/roadway entrance leading to the building and/or on each individual building shall be required by the CFPD. This remote signage shall consist of a 6-inch by 18-inch green reflective metal sign with 3-inch reflective numbers/letters similar to Hy-Ko 911 or equivalent.
 - f. Show location of fire hydrant on a site plan. A fire hydrant is required within 250 feet of the building and the flow shall be a minimum of 1,000 gallons per minute (gpm) at 20 pounds per square inch (psi). This information shall be verified by the water purveyor in a letter initiated by the applicant and submitted to San Mateo County Fire/Cal Fire or the Coastside Fire Protection District. If there is not a hydrant within 250 feet with the required flow, a hydrant shall be installed at the applicant's expense.
31. All fire conditions and requirements must be incorporated into your building plans prior to building permit issuance. It is your responsibility to notify your contractor, architect, and engineer of these requirements.
32. Contact the Fire Marshal's Office at 650/726-5213 to schedule a Final Inspection prior to occupancy and Final Inspection by a Building Inspector. Allow for a minimum of 72-hour notice.

Department of Public Works

33. Prior to the issuance of the building permit, the applicant shall have prepared, by a registered civil engineer, a drainage analysis of the proposed project and submit it to the Department of Public Works for review and approval. The drainage analysis shall consist of a written narrative and a plan. The flow of the stormwater onto, over, and off of the property shall be detailed on the plan and shall include adjacent lands as appropriate to clearly depict the pattern of flow. The analysis shall detail the measures

necessary to certify adequate drainage. Post-development flows and velocities shall not exceed those that existed in the pre-developed state. Recommended measures shall be designed and included in the improvement plans and submitted to the Department of Public Works for review and approval.

34. Prior to the issuance of the building permit, the applicant shall submit a driveway "Plan and Profile," to the Department of Public Works, showing the driveway access from the nearest "publicly" maintained roadway to the parcel (garage slab) complying with County Standards for driveway slopes (not to exceed 20%) and to County Standards for driveways (at the property line) being the same elevation as the center of the access roadway. When appropriate, as determined by the Department of Public Works, this plan and profile shall be prepared from elevations and alignment shown on the roadway improvement plans. The driveway plan shall also include and show specific provisions and details for both the existing and the proposed drainage patterns and drainage facilities.
35. No proposed construction work within the County right-of-way shall begin until County requirements for the issuance of an encroachment permit, including review of the plans, have been met and an encroachment permit issued. The applicant shall contact a Department of Public Works Inspector 48 hours prior to commencing work in the right-of-way.
36. Prior to the issuance of the building permit, the applicant will be required to provide payment of "roadway mitigation fees" based on the square footage (assessable space) of the proposed building per Ordinance No. 3277.
37. The applicant shall provide sidewalks along the edge of the property to conform with existing sidewalks per county standards.

Montara Water and Sanitary District

38. Prior to the issuance of a building permit, the applicant shall obtain Domestic Water/Fire Protection Connection and Sewer Permits, including the submittal of adequate fire flow calculations from a Certified Fire Protection Contractor.

Environmental Health Division

39. Upon obtaining approval of the planning permits required for this project, the applicant shall properly abandon the existing well(s) on the property to the satisfaction of the Environmental Health (EH) Division. This shall have occurred prior to or concurrent with the EH Division's final certification of the well that does meet their standards, or if determined that one or both do not.
40. Upon obtaining approval of the planning permits required for this project, the applicant shall obtain a well abandonment permit from the EH Division for the well(s) approved under Planning Permit Case Number CDP 96-0045.

Carlos Zubieta

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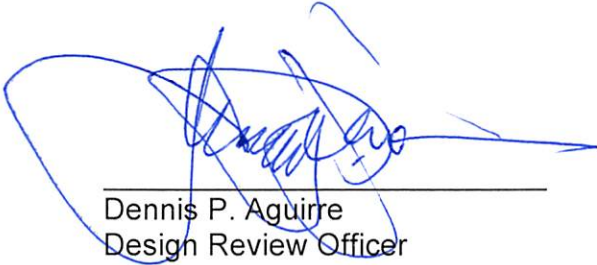
December 6, 2017

Please note that the decision of the Coastsides Design Review Committee is a recommendation regarding the project's compliance with design review standards, not the final decision on this project, which requires a Coastal Development Permit (CDP) and Grading Permit. The public hearing on the CDP and Grading Permit will take place at a later date.

For more information, please contact the project planner, Carmelisa Morales, at 650/363-1873 or by email at cjmorales@smcgov.org.

To provide feedback, please visit the Department's Customer Survey at the following link: <http://planning.smcgov.org/survey>.

Sincerely,



Dennis P. Aguirre
Design Review Officer

DPA:CJM:jlh – CJMBB0729_WJN.DOCX

cc: Stuart Grunow, Member Architect
Bruce Chan, Member Landscape Architect
Melanie Hohnbaum, Moss Beach Community Representative
Zubar LLC, Property Owner
Lisa Ketcham, Midcoast Community Council
Steven and Melinda King, Interested Member of the Public
Jim Scheinberg, Interested Member of the Public
Gary Housman, Interested Member of the Public
Richard Grech, Interested Member of the Public
Elisabeth Vespremi, Interested Member of the Public
Richard Becker, Interested Member of the Public
Liam Vespremi, Interested Member of the Public

RESOLUTION NO. 74-270

Attachment E

On the motion of Commissioner Halsted
duly seconded by Commissioner Church
the following resolution was adopted:

CALIFORNIA COASTAL ZONE CONSERVATION COMMISSION
CENTRAL COAST REGION

RESOLUTION GRANTING PERMIT
FOR COASTAL DEVELOPMENT

(Upon a majority vote of total authorized
membership of the regional commission)

WHEREAS, on June 7, 1974, the application of ARBOR DEVELOPMENT COMPANY, c/o Mr. George Thenn, Jr., 361 Lytton Avenue, Palo Alto, California, application number P-819, was filed for a coastal development permit pursuant to section 27400 of the Public Resources Code; and

WHEREAS, the project as hereinafter approved consists of the construction of 6 one-story single family dwellings with garages, landscaping and connections to underground utilities, Lots 16 through 21, Cypress Cliffs subdivision, Arbor Lane between Wienke Way and the Pacific Ocean, Moss Beach, San Mateo County; and

WHEREAS, this Commission has given written public notice of the nature of the proposed development and of the time and place of the public hearing thereof and has held a public hearing in accordance with said notice and the California Coastal Zone Conservation Commission; and said public hearing commenced on July 1, 1974 and concluded on July 15, 1974; and

WHEREAS, this Commission finds the project as hereinafter approved will not have any substantial adverse environmental or ecological effect and is consistent with the findings and declarations set forth in Public Resources Code section 27001 and with the objectives set forth in Public Resources Code section 27302 in that:

1. The proposed development will further complete the build-out of an existing subdivision, with adequate community facilities available to the sites and to the residents.
2. As conditioned, the development will contribute to the coastal trail system and, at the same time, avoid additional impact on the sensitive Fitzgerald Marine Reserve below.
3. As conditioned below, no structure would substantially interfere or detract from the line of sight from Highway 1 to the sea.

WHEREAS, the project as herein approved does not involve any of the types of development referred to in Public Resources Code section 27401 and, accordingly, requires an affirmative vote of a majority of the total authorized membership of this Commission for approval thereof:

NOW, THEREFORE, BE IT RESOLVED that the Central Coast Regional Coastal Zone Conservation Commission hereby grants the permit, in accordance with the application submitted by the applicant, subject to the following terms and conditions:

1. Only three of the proposed structures (lots 17, 18, 21) are hereby approved. Structures on lots 16, 19, and 20 would have to be substantially re-designed to enable favorable action by the Commission, and would have to avoid intrusion into the 75-80 ft. wide scenic visual corridor along Arbor Lane.
2. The structure on lot 21 shall be set back from the curb of Arbor Lane at least 50 feet. If this requires a changed house plan, such plan will be submitted to the Executive Director for approval before construction can commence.
3. No part of any structure permitted herein shall rise over 20 feet above existing ground.
4. No access shall be constructed or provided from the bluff top in Cypress Cliffs to the Marine Reserve below.
5. No access shall be constructed or provided, nor alteration of vegetation be permitted, within the scenic easement area of lot 17 (comprising a drainage swale).
6. Applicant shall grant, as an irrevocable option, an easement for public access along the scenic easement (bluff top) parcel 11. The grant shall be made in writing prior to August 1, 1974, and said option shall be exercised by the appropriate federal, state or local agency only as part of a coastal trail system, or regional segment thereof. This right-of-way shall be at least 20 feet wide and will be activated only upon determination by the administering public agency that the segment of the coastal trail system in which it is included can be adequately and safely maintained and supervised.
7. No trespassing signs will be permanently removed or appropriately modified at such time as the trail system is activated.
8. All street trees, shall be 5-gallon or larger Monterey Cypress.
9. A final landscape plan shall be submitted and reviewed by staff within 90 days indicating placement of the trees and landscaping of the scenic easement parcel so as to preserve the scenic visual corridor along Arbor Lane from Highway 1 and Wienke Way.
10. The promotional sign at the subdivision entrance be permanently removed on or before November 2, 1974.

DATED: JUL 15 1974

CHARLES B. KRAMER, CHAIRMAN

ATTEST:


EDWARD Y. BROWN, EXECUTIVE DIRECTOR

AFFIRMATIVE VOTE ON APPLICATION:

Ayes: 11 - Harry, Hughes, Lodato, McCarthy, Dolan,
Wallers, Wood, Anderson, Camacho, Church,

Nayes: 3 - Weinreb, Gibson,
Halsted
Absent: 2 - Day, Rhodes

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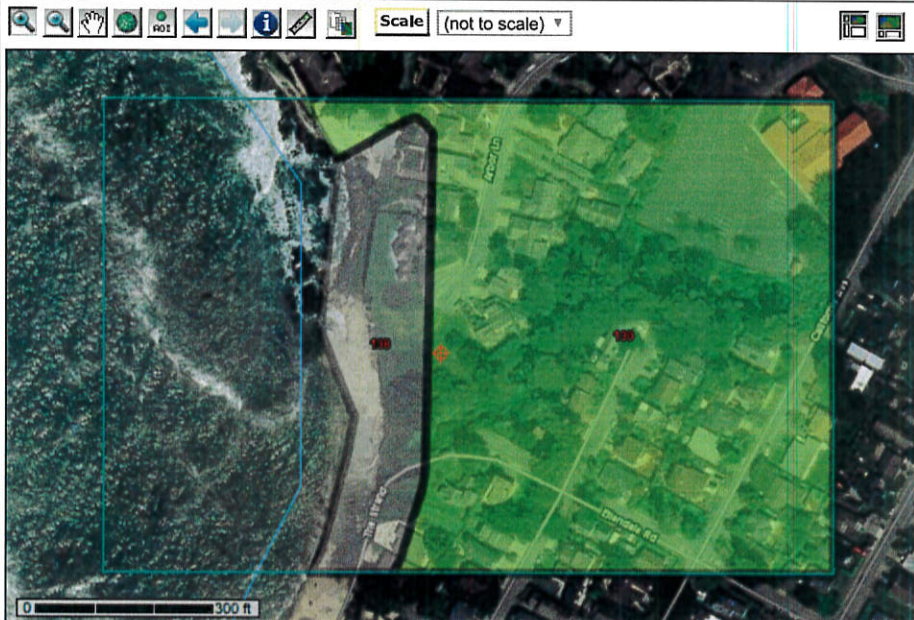
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Map — California Revised Storie Index (CA)

**Warning: Soil Ratings Map may not be valid at this scale.**

You have zoomed in beyond the scale at which the soil map for this area is intended to be used. Mapping of soils is done at a particular scale. The soil surveys that comprise your AOI were mapped at 1:24,000. The design of map units and the level of detail shown in the resulting soil map are dependent on that map scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Tables — California Revised Storie Index (CA) — Summary By Map Unit

Summary by Map Unit — San Mateo County, Eastern Part, and San Francisco County, California (CA689)

Summary by Map Unit — San Mateo County, Eastern Part, and San Francisco County, California (CA689)

Map unit symbol	Map unit name	Rating	Component name (percent)	Acres in AOI	Percent of AOI
130	Typic Argiustolls, loamy-Urban land association, 5 to 15 percent slopes	Grade 2 - Good	Typic Argiustolls (50%)	12.9	57.1%
138	Beaches	Not Applicable for Storie Index	Beaches (100%)	2.6	11.6%

Totals for Area of Interest**22.6 100.0%**

Description — California Revised Storie Index (CA)

The Revised Storie Index is a rating system based on soil properties that govern the potential for soil map unit components to be used for irrigated agriculture in California.

The Revised Storie Index assesses the productivity of a soil from the following four characteristics:

- Factor A: degree of soil profile development
- Factor B: texture of the surface layer
- Factor C: steepness of slope
- Factor X: drainage class, landform, erosion class, flooding and ponding frequency and duration, soil pH, soluble salt content as measured by electrical conductivity, and sodium adsorption ratio

Revised Storie Index numerical ratings have been combined into six classes as follows:

- Grade 1: Excellent (81 to 100)
- Grade 2: Good (61 to 80)
- Grade 3: Fair (41 to 60)
- Grade 4: Poor (21 to 40)
- Grade 5: Very poor (11 to 20)
- Grade 6: Nonagricultural (10 or less)

The components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as the one shown for the map unit. The percent composition of each component in a particular map unit is given to help the user better understand the extent to which the rating applies to the map unit.

Other components with different ratings may occur in each map unit. The ratings for all components, regardless the aggregated rating of the map unit, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options — California Revised Storie Index (CA)

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Lower

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Construction Materials

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Land Classifications

California Revised Storie Index (CA)

Conservation Tree and Shrub Group

Ecological Site ID

Ecological Site Name

Farmland Classification

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Map ☒Table ☒Description of Rating ☒Rating Options ☒☐ Detailed Description

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Hydric Rating by Map Unit

Irrigated Capability Class

Irrigated Capability Subclass

National Commodity Crop Productivity Index

NH Forest Soil Group

Nonirrigated Capability Class

Nonirrigated Capability Subclass

Order of Soil Survey

Soil Taxonomy Classification

Land Management

Military Operations

Recreational Development

Sanitary Facilities

Soil Health

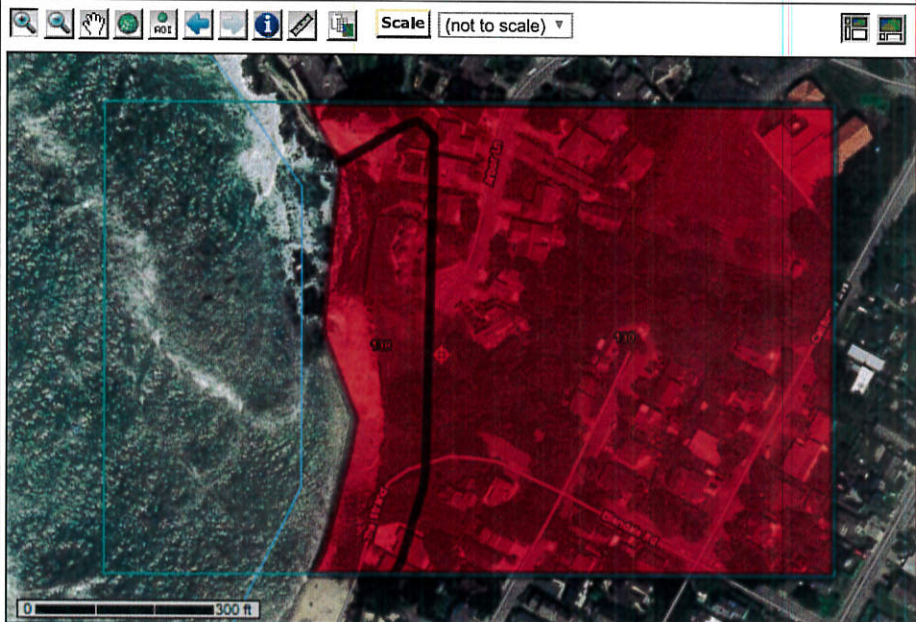
Vegetative Productivity

Waste Management

Water Management

Wildlife Management

Map — Farmland Classification

**Warning: Soil Ratings Map may not be valid at this scale.**

You have zoomed in beyond the scale at which the soil map for this area is intended to be used. Mapping of soils is done at a particular scale. The soil surveys that comprise your AOI were mapped at 1:24,000. The design of map units and the level of detail shown in the resulting soil map are dependent on that map scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Tables — Farmland Classification — Summary By Map Unit

Summary by Map Unit — San Mateo County, Eastern Part, and San Francisco County, California (CA689)

Summary by Map Unit — San Mateo County, Eastern Part, and San Francisco County, California (CA689)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
130	Typic Argiustolls, loamy-Urban land association, 5 to 1 5 percent slopes	Not prime farmland	12.9	57.1%
138	Beaches	Not prime farmland	2.6	11.6%

Totals for Area of Interest**22.6 100.0%**

Description — Farmland Classification

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options — Farmland Classification

Aggregation Method: No Aggregation Necessary**Tie-break Rule:** Lower

BIOLOGICAL RESOURCES ASSESSMENT

**199 Arbor Lane
Moss Beach, California
APN 037-123-043**

Prepared for:

Carlos Zubieta, Architect
1725-A Abbot Kinney Boulevard
Venice, CA 90291

May 9, 2015

Prepared by:

Kopitov Environmental LLC
POB 7380
Santa Cruz, CA 95061



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Attachment G

APPLICANT/OWNER

Carlos Zubieta, Architect
1725-A Abbot Kinney Boulevard
Venice, California 90291

PROJECT ADDRESS

199 Arbor Lane
Moss Beach, San Mateo County, California

ASSESSOR'S PARCEL NUMBER

037-123-430

SUMMARY

Report Summary (briefly state the results of the report, habitat type, rare, endangered, or unique species present, anticipated impacts, and proposed mitigation measures.)

At the request of Carlos Zubieta, Architect, Kopitov Environmental LLC conducted an assessment of biological resources on 1.04 acres biological study area centered on 199 Arbor Lane (approximately 14,320 square feet) in Moss Beach, San Mateo County, California. The proposed project is the construction of a single- family residence. This report assesses the potential environmental effects of the project pursuant to the County of San Mateo Local Coastal Program.

The study area consists of five plant communities or habitats: non-native grassland/ruderal, Monterey cypress, poison oak/California blackberry, herbaceous/ruderal and riparian/wetland. A grove of Monterey cypress (*Cupressus macrocarpa*), designated a Class 1 Heritage Tree by LCP Policy 7.50, was found on the study area. California blackberry (*Rubus ursinus*), a community designated as rare by the California Department of Fish and Wildlife, was observed on the study area including the proposed work area. The work area community included dense patch of poison oak (*Toxicodendron diversilobum*). Beach strawberry (*Fragaria chiloensis*), protected by County of San Mateo Local Coastal Program (LCP) Policy 7.49, was found within the proposed work area. No other special status plant species or natural communities were observed within the study area. The proposed project would result clearing of the beach strawberry and California blackberry on the work area and removal of one or more Monterey Cypress trees. Monterey cypress tree impacts would be subject to the County of Monterey Significant Tree Ordinance requires permits for tree removal. An expert in strawberry breeding determined that there would be no impact, thus no mitigation, for clearing the beach strawberry patch. California blackberry was found throughout the arroyo, thus, impacts would be less than significant.

Four special status plant species have historic populations within 3 miles of the project area. Potentially suitable habitat may be present on Dean Creek for coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*) and Hickman's cinquefoil (*Potentilla hickmanii*). Potentially suitable habitat for rose leptosiphon (*Leptosiphon rosaceus*) and yellow leptosiphon (*Leptosiphon croceus*) was found on the coastal bluff; however, *Leptosiphon* species were not detected during the field surveys conducted in the peak blooming period. The project would not affect the arroyo or the coastal bluff, thus, these species would not be impacted by the proposed

Attachment G

project.

Based on the presence of potentially suitable habitat (such as Dean Creek, cypress grove, and poison oak/blackberry scrub) and proximity to known occurrences, there is potential for California red-legged frog (*Rana draytonii*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), salt marsh common yellowthroat (*Geothlypis trichas sinuosa*), bats and the monarch butterfly (*Danaus plexippus*) to occur or pass through the project area. Nesting migratory birds have the potential to nest in all of the habitats found on the study area. The proposed project has the potential to significantly impact these species resulting in mortality. Implementation of mitigation measures including, but not limited to, pre-construction surveys, exclusionary fencing and stormwater best management practices would reduce impacts to less than significant (table 1).

There would be no impacts to Dean Creek, an intermittent stream, located approximately 30 feet south of the project area. Implementation of minimum stormwater best management practices and a 20-foot scenic easement would meet and/or exceed LCP minimum intermittent stream 30-foot buffer and required stormwater mitigation measures.

Attachment G

INTRODUCTION

At the request of the Carlos Zubieta, Kopitov Environmental LLC conducted an assessment of biological resources for a proposed single-family residence located on 199 Arbor Lane, Moss Beach, San Mateo County, California.

This report presents the results and analysis of potential project-related effects on special-status plant and wildlife species and sensitive habitats consistent with the LCP Sensitive Habitats Component, General Policies, 7.5 Permit Conditions (County of San Mateo LCP, 2013). This report also provides recommendations for avoidance and mitigation measures to reduce effects to special-status plants, wildlife and sensitive habitats.

PROJECT SETTING

Project and property description (describe the proposed project and property, including the size, topographic characteristics, water resources, soil types, and land uses on the property and in the vicinity up to a radius of one-quarter mile. Include a map of the area from the USGS 7.5-minute quadrangle series.)

PROJECT DESCRIPTION AND LOCATION

The project area was located on 199 Arbor Lane (a cul-de-sac) approximately 0.17 miles west of Highway 1 (The Cabrillo Highway) in Moss Beach, an unincorporated area of San Mateo County (figure 1). The project area encompasses the entirety of APN 037-123-430.

The proposed project is the construction of a single-family residence covering an estimated area of 3,400 square feet, plus a two-car garage of approximately 400 square feet. The single story home would be a concrete slab on grade construction. Other features include a concrete driveway (or a more permeable surface if permitted by local building officials), concrete decks surrounding a spa and BBQ area, and a pedestrian approach or walkway from Arbor Lane. The project would include a 20-foot scenic easement from the edge of the southern boundary (figure 2).

REGIONAL SETTING

The unincorporated community of Moss Beach is located along the San Mateo County coastline and encompasses 2.25 square miles. It has a population of approximately 3,103 (USDOC 2010). The communities of El Granada, and Princeton-by-the Sea were south and Montara and the City of Pacifica were north of the Moss Beach. The City of San Francisco was approximately 20 miles north. The Moss Beach climate was characterized by cool summer Mediterranean climate with an annual precipitation average of 30 inches.

BIOLOGICAL RESOURCES STUDY AREA

The project area was defined as the entirety of APN 037-123-430. The biological resources study area (study area) is defined as the project area and accessible areas bordering the project area (figure 2). The total study area encompasses approximately 1.04 acres.

ENVIRONMENTAL SETTING

SURROUNDING LAND USES AND SETTING

Attachment G



Figure 1
Vicinity Map and Region Map
USGS 7.5 Minute Quad



Biological Resource Assessment
199 Arbor Lane
Moss Beach, California

Date: 05/07/2015

The immediate surrounding land use includes single-family residences, Fitzgerald Marine Reserve, and a steep gully (arroyo) containing an intermittent creek. The project is bordered to the east by a single-family residence, to the north by an open space/vacant lot owned by the homeowners association and to the south by a steep gully containing Dean Creek. The Fitzgerald Marine Reserve and the Pacific Ocean were to the west (including Kelp Cove lagoons and beaches).

Land use along the Cabrillo Highway and within ¼ mile of the project area includes single-family residences and businesses, such as restaurants, offices.

TOPOGRAPHY

The project was located on a coastal bluff approximately 40 to 50 feet landward of the bluff edge. The elevation was approximately 66 feet (20 meters) above mean sea level. The topography was generally flat with an arroyo located along the southern boundary. The arroyo was characterized by near vertical slopes.

HYDROLOGY

The project was located within the Dean Creek Watershed with Dean Creek on the southern boundary of the project. This creek was characterized as an intermittent creek (USGS 2015). Intermittent creeks were depicted with dotted or dashed blue lines on the USGS NHD maps. Other hydrological features mapped nearby include:

- San Vicente Creek, approximately 530 feet south;
- Montara Creek, approximately 0.8 mile north;
- Pillar Point Marsh, approximately 0.75 mile south of the project and west of the Half Moon Bay Airport.
- Three ponds, east of Cabrillo Highway.
 - approximately 0.8 mile northeast and near Montara Creek;
 - approximately 1 mile southeast near San Vicente Creek (2 ponds).

SOILS

The study area is composed of two NRCS soils mapping units, Beaches and Typic Argiustolls/loamy Urban Land association. (Soil Survey Staff 2015). Beaches was listed as a County of San Mateo hydric soil. Typic Argiustolls/loamy Urban Land Association was described as setting on fluvio-marine terraces with a slope of 5 to 15 percent. Parent materials include coastal alluvium derived from sedimentary rock. There were no serpentine soils that could provide habitat for special status species present on site.

REGULATORY SETTING

This section provides an overview of the regulations that may apply to the project. Additional regulations may apply.

POTENTIALLY JURISDICTIONAL WATERS OF THE STATE AND US

Potentially jurisdictional waters include aquatic resources, such as riparian areas, streams, rivers, wetlands, and associated aquatic vegetation communities. These areas are considered sensitive

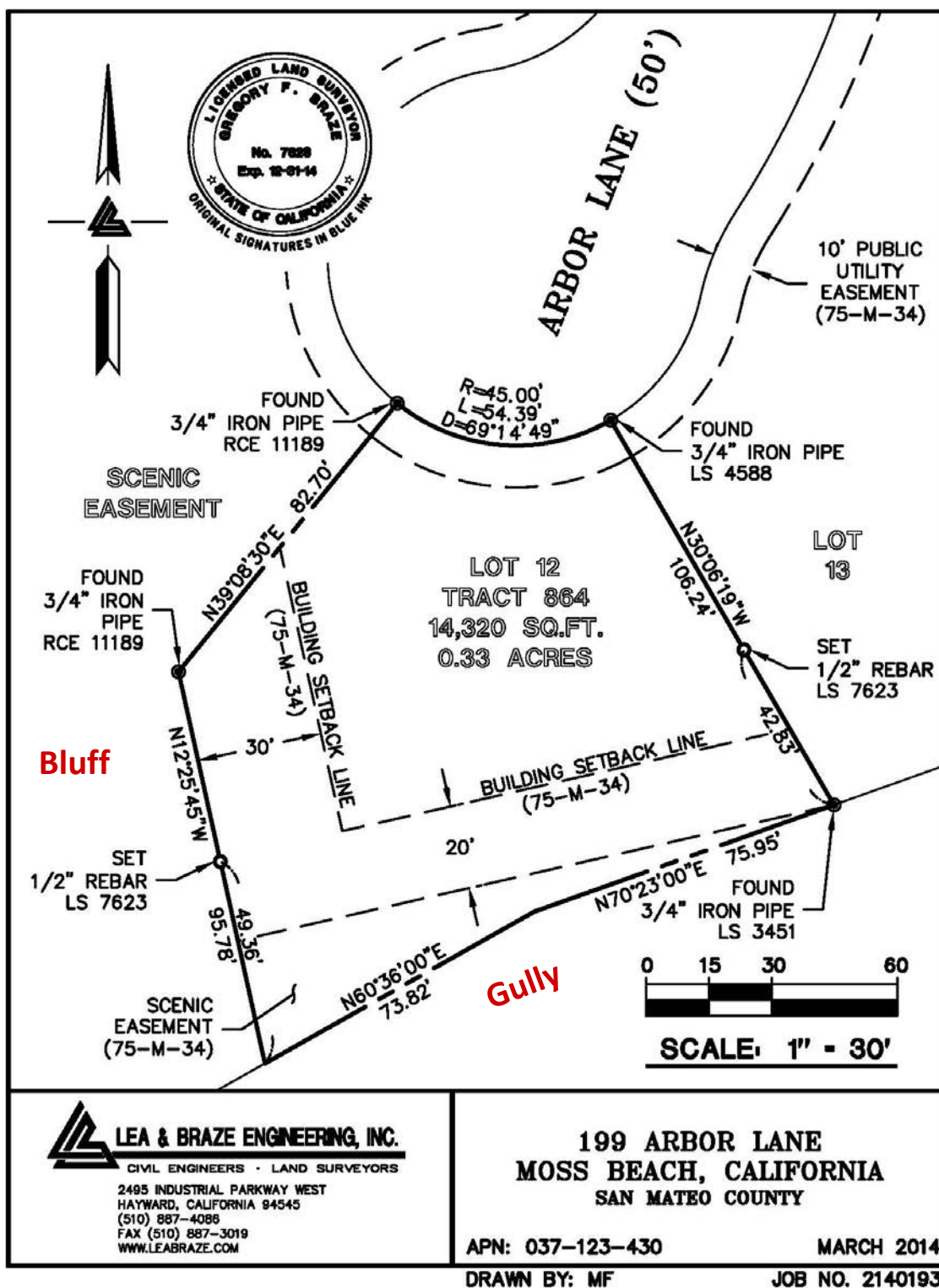


Figure 2
Project Area Survey depicting proposed buffer areas along the arroyo and bluff.

biological resources and could fall under the jurisdiction of local, state and federal regulatory agencies, as described below. Final jurisdictional determinations should be determined by the appropriate regulatory agency.

County of San Mateo Local Coastal Program

This project located within the Coastal Zone of San Mateo County, thus, subject to compliance with the County of San Mateo Local Coastal Program. Compliance would include applying for a Coastal Development Permit (CDP). In order for the CDP to be issued, the project must comply with the policies of the LCP and all ordinances adopted to implement the LCP. LCP jurisdictional waters include all perennial and intermittent streams and their tributaries, coastal tidelands and marshes, wetlands, lakes and ponds and adjacent shore habitat, riparian corridors, sea cliffs, and marine habitats.

Waters of the State

The California Coastal Commission (CCC), in partnership with coastal cities and counties, plans and regulates the use of land and water in the coastal zone. Development activities, which are broadly defined by the Coastal Act to include (among others) construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters, generally require a coastal permit from either the Coastal Commission or the local government. The County of San Mateo administers the Local Coastal Program in partnership with the CCC.

Stream channels consisting of a defined bed and bank are considered waters of the State and regulated by the California Fish and Game Code (CFGF) (Section 1600 et seq). In addition to the stream channel, the bed and banks, and adjacent riparian and/or hydrophytic vegetation (wetlands), extending to the outer drip-line of the vegetation, may be considered waters of the State. Wetlands are defined by the State as lands that are transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water, or periodically support hydrophytic dominant vegetation, or in which soils are hydric in nature (CERES 2011).

Additional applicable state laws may include California Porter-Cologne Water Quality Control Act the State Water Resources Control Board (SWRCB) that may require permits ("waste discharge requirements" [WDRs]) for the fill or alteration of "Waters of the State". The term "Waters of the State" is defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Section 13050[e]).

Waters of the US

Section 404 of the Clean Water Act (CWA) prohibits the discharge of dredged or fill material into "waters of the United States" without a permit from the US Army Corps of Engineers (Corps). These include all waters that are subject to the ebb and flow of tides, wetlands, lakes, rivers, streams (including intermittent or ephemeral streams), mudflats, sandflats, sloughs, prairie potholes, vernal pools, wet meadows, playa lakes, natural ponds, and tributaries of the above features. The extent of waters of the U.S. is generally defined as that portion which falls within the limits of "ordinary high water." Field indicators of ordinary high water include clear and natural lines on opposite sides of the banks, scouring, sedimentary deposits, drift lines, exposed roots, shelving, destruction of terrestrial vegetation, and the presence of litter or debris.

THREATENED, ENDANGERED, SPECIAL STATUS SPECIES INCLUDING UNIQUE SPECIES

Special-status species and their habitats were defined, for this report, as those species and habitats (1) listed as threatened or endangered by Local, State and Federal agencies, (2) proposed for listing as threatened or endangered by Federal and State agencies, or (3) designated as candidate or fully protected species under the Federal Endangered Species Act of 1973 (ESA), as amended (Code of Federal Regulations, Title 50, Section 17), California Endangered Species Act (CESA)(California Code of Regulations Title 14, Section 670.5), CFGC (Sections 1901, 2062, 2067, 3511, 4700, 5050 and 5515), (4) plants regulated by the Native Plant Protection Act of 1977 and included in lists 1 through 4 of the California Native Plant Society (CNPS) online inventory, (5) plants that qualify as “rare” in the California Environmental Quality Act (CEQA), section 15380, and (6) plants and animals considered “rare and endangered” in the County of San Mateo LCP.

Section 2080 of the CFGC prohibits "take" of any species that the commission determines to be an endangered or threatened species. CFGC Section 86, as to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill defines take." Take is prohibited for California Department of Fish and Wildlife (CDFW) fully protected species and no licenses or permits may be issued for take of fully protected species except for collection for scientific research.

County of San Mateo

Endangered and rare species and their habitats are regulated by the County’s LCP. The following species and their habitats are included: San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), San Francisco tree lupine moth (*Grapholitha edwardsiana*), brackish water snail (*Tryonia imitator*), sea otter (*Enhydra lutris nereis*), and globose dune beetle (*Coelus globosus*). Unique species includes the following species and habitats elephant seal (*Mirounga angustirostris*), Monterey pine (*Pinus radiata*), California wild strawberry (*Fragaria californica*), Champion Monterey cypress (*Cupressus macrocarpa*).

The project would be subject to the requirements of the County of San Mateo Significant Tree Ordinance should the project include removal or pruning of significant and/or heritage trees.

Other Regulated Sensitive and Locally Rare Wildlife Species

Monarch Butterflies. The monarch butterfly (*Danaus plexippus*) is not a state of federally listed species; however, it is given special consideration under the California Environmental Quality Act (CEQA) review process due to their sensitive life history and habitat requirements. Monarch butterflies depend upon winter roost sites that extend along the western coast. Roost habitats consist of wind-protected tree groves, including Monterey Cypress.

Bats. Various agencies have established status designations providing guidelines for the most sensitive and threatened bat species. The Townsend’s big-eared bat (*Corynorhinus townsendii*) is under review for protected status under CESA. During the review period, species are afforded protection under CESA. Bat species and their habitats also are afforded consideration under CEQA if potential significant adverse effects on the environment are determined. Sections 2000 and 4150 of the CFGC states that it unlawful to take or possess a number of species, including bats, without a license or permit as required by CFGC Section 3007. Title 14 of the California Code of Regulations (CCR) states it is unlawful to harass, herd, or drive a number of species, including bats. To harass is defined as “an intentional act, which disrupts an animal's normal

behavior patterns, which includes, but is not limited to, breeding, feeding or sheltering.”

Migratory Birds. Most bird species, breeding, migratory or of limited distribution, are protected by federal and state regulations. The Migratory Bird Treaty Act of 1918 (MBTA)(16 USC §703-712) federally listed (50 CFR §10), protects migratory bird species, their nests and their eggs from injury or death. The California Fish and Game Code (CFGF) §3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird; CFGF §3503.5 prohibits the take, possession, or needless destruction of any nests, eggs or birds in the orders Falconiformes (new world vultures, hawks, eagles, ospreys and falcons, among others) or Strigiformes (owls); CFGF §3511 prohibits the take or possession of fully protected birds; and CFGF §3513 prohibits the take or possession of any migratory nongame bird or part thereof as designated in the MBTA.

Birds of Prey. Birds of prey are also protected in California under provisions of the CFGF Section 3503.5, which states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “taking” by the CDFW.

MIGRATION, TRAVEL CORRIDORS AND HABITAT FRAGMENTATION

Wildlife corridors are included in Standards of Significance in Appendix G of the CEQA guidelines and are also regulated by the City’s Municipal Code. Wildlife movement corridors function to connect habitats used by native wildlife for purposes including, but not limited to, foraging, shelter, breeding, dispersal and migration. Studies suggest that habitat corridors provide connectivity for and are used by wildlife, and as such an important conservation component (Beier and Noss 1998). Proposed development that threatens to disrupt these natural movement patterns is required to evaluate the environmental impacts of these disruptions and address effects. Movement corridors in California include with valleys, rivers and creeks, riparian vegetation, and ridgelines. Maintaining movement corridors to allow access to the different biotic resources are essential to supporting various species. Evaluating the importance of an area that may function as a “movement corridor” depends on the species that occur in the area and that are dependent upon the natural resources or habitats in the area. While no detailed study of animal movements has been conducted for the study area, evaluating the site, its habitats, and understanding the life history of species potentially occurring on the site and in its vicinity provides sufficient information to infer the types of movements occurring in the region and whether or not proposed development would constitute a significant impact on animal movements.

METHODS

(briefly describe the survey methods used in preparing the report and show on an appropriately scaled map the location of sample points, transects, and any additional areas surveyed in the vicinity of the project.)

Aerial photographs were reviewed prior to background research and field surveys to identify potential habitat types, migration corridors, habitat connectivity, and potentially sensitive biological resources of the area, including but not limited to wetlands and streams.

BACKGROUND RESEARCH

Existing special-status species databases were reviewed to compile a list of sensitive natural communities and special-status species potentially occurring in the vicinity of each project area. Database queries included observations found in six USGS 7 ½ -minute quadrangles (quads) (collectively referred to as a six-quad search area). The six-quad search area was centered on the Montara Mountain quad and included the bordering quads of Half Moon Bay, San Mateo, Woodside, Hunters Point and San Francisco South.

The following data sources were queried:

- US Fish and Wildlife Service (USFWS) Sacramento Field Office Web Site: An official list of federal candidate, proposed, threatened, and endangered plant and wildlife species having the potential to occur in a six-quad search area (USFWS 2015).
- California Natural Diversity Database (CNDDDB): A list of federal and State special-status, proposed, threatened, and endangered plant and wildlife species, California Department of Fish and Wildlife (CDFW) designated sensitive natural communities, and California Native Plant Society (CNPS) listed special-status plant species was generated using a six-quad search area (CDFW 2015).
- CNPS Online Inventory of Rare and Endangered Plants of California: A list of CNPS special-status plant species that may occur in the project vicinity was generated using a nine-quad search (CNPS 2015).
- U.S. Geological Survey (USGS) National Hydrography Dataset (NHD): This national dataset depicts surface water features such as rivers, streams, lakes, ponds, drainage basins, and coastlines. This data was used to identify water features within the vicinity of the study area (USGS 2015).

FIELD SURVEYS

A reconnaissance level pedestrian survey of the study area was conducted on April 24, 2015 by Anna Kopitov, Senior Biologist and Neal Kramer, Senior Botanist and Wetland Specialist. Accessible areas were surveyed in a manner to ensure total survey coverage with special focus given to identifying areas with the potential to support sensitive habitats, rare, endangered, special-status and unique species. The weather was calm with clear skies and the temperature in the low to mid 50 degrees Fahrenheit.

Potentially Jurisdictional Waters and Other Regulated Habitats

Kopitov Environmental biologists evaluated the study area to determine if any areas met the definition of waters of the US, state and/or the County's zoning code and LCP. Field biologists generally followed the wetland determination methodology as described in the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and Arid West Supplement (USACE 2008). Kopitov Environmental L.L.C. biologists also assessed the surrounding habitat and land use types to evaluate potential effects on wildlife movement corridors and breeding habitats.

Special Status Species

The entire study area was accessed on foot with the exception of portions that were on private

land or in areas that were inaccessible as described below. Private lands and other inaccessible areas were visually assessed from nearby vantage points (i.e. roads, arroyo edge). All plant species in bloom, or otherwise recognizable, were identified to a level necessary to determine their regulatory status. All wildlife species observed or recognized by diagnostic sign (e.g., scat, tracks, prey remains, burrows, etc.) were recorded and identified.

Based on the findings of the field surveys, special status species lists were updated to include an assessment of the potential to support special-status species and to determine whether subsequent protocol-level surveys are recommended (appendix A, tables 2 and 3). Potential for occurrence is defined using the following categories.

1. None - Habitat requirements do not occur in the project area. No further surveys recommended.
2. Not Expected - Existing conditions or poor habitat quality make it unlikely that the species is present.
3. Possible - Suitable habitat present and documented occurrences recorded in the survey area or nearby.
4. Present - Species or species' sign was observed on the project area.

Botanical taxonomy and nomenclature in this report conforms to The Jepson Manual: Vascular Plants of California, 2nd Edition (Baldwin et. al. 2012). Common names of plant species were derived from The Calflora Database (Calflora 2015). Nomenclature for special-status plants conforms to the Online CNPS Inventory of Rare and Endangered Plants, 8th Edition (CNPS 2015) and Special Vascular Plants, Bryophytes and Lichens List (CDFW 2015). Wetland plant indicator status listings conform to the 2015 National Wetland Plant List (Lichvar 2013).

Limitation

Protocol-level plant and wildlife surveys were not conducted during the field survey. Negative survey findings may not indicate absence; however, determination of presence/absence within the study area was possible for some special-status plant and animal species referencing the following, but not limited to, blooming periods corresponding to the 2015 site visit, or the direct observation or presence of diagnostic signs for wildlife species.

Wetlands, waters, and/or riparian areas under the purview of state and local regulatory agencies may have broader jurisdictional scope and/or overlapping jurisdictions with that of the USACE. Final judgment of potentially jurisdictional wetlands, waters of the state and U.S., should be confirmed by the appropriate federal, state or local regulatory agency. Wetland and ordinary high water mark delineations were not completed due to topographic constraints (i.e. steep arroyo).

RESULTS

(at length, describe the botanical and zoological resources of the project site. To the extent possible, describe the food chain of the habitat and how the proposed project will impact those resources.

Kopitov Environmental L.L.C. senior biologists Anna Kopitov and Neal Kramer conducted a field survey of the study area on April 24, 2015. Background research of the above databases was conducted in April, 2015 for special status species and communities. Background research results appear in Appendix A.

FOOD CHAIN RESOURCES

The study area includes an undeveloped parcel, a grove of Monterey cypress trees, poison oak/blackberry and non-native grasses/ruderal vegetation with beach strawberry. These habitat types provide poor to moderate habitat for native plant species, and moderate habitat for native wildlife species. Wildlife species that likely utilize the site include raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and Virginia opossum (*Didelphis marsupialis*). Amphibian and reptile species that may seek shelter or forage within the brush and riparian corridor nearby include California slender salamander (*Batrachoseps attenuatus*), Pacific tree frog (*Pseudacris regilla*), western fence lizard (*Sceloporus occidentalis*), and coast garter snake (*Thamnophis elegans*). Bird species that may utilize the ruderal vegetation for nesting, forage and shelter, poison oak scrub and Monterey cypress grove on site include migratory passerines such as house finch (*Carpodacus mexicanus*), song sparrow (*Melospiza melodia*), Bewick's wren (*Thryomanes bewicki*), and black phoebe (*Sayornis nigricans*), and raptors such as red-tailed hawk (*Buteo jamaicensis*).

POTENTIALLY JURISDICTIONAL WATERS

There were no potentially jurisdictional waters of the state or US on the project area. Dean Creek and associated riparian habitat are potentially jurisdictional waters of the County, State and US.

Dean Creek, an intermittent stream, flows adjacent to the project area at the bottom of a steep gully (arroyo) on the south boundary. A portion of Dean Creek flows through underground pipes and a portion flows on open channel (ESA 2014). The arroyo along the south boundary of the property was too steep to safely traverse; however, biologists examined the mouth of Dean Creek that flows to Kelp Cove, Fitzgerald Marine Reserve. An old, rusted, and broken metal pipe was observed on the bed of the creek. It could not be determined how far this pipe continued upstream but it is presumed this pipe may run the length of the creek until it is undergrounded. The creek bed was damp with no standing water observed in the accessible portion of the creek bed (approximately 60-100 feet from mouth); a shallow amount of water (<1-inch deep) was observed inside the pipe at about 100 feet upstream of mouth.

Hydrophytic plants on the creek bed and bank approximately 60 - 75 feet upstream of the creek mouth included arroyo willow (*Salix lasiolepis*), *Typha species (sp.)*, hoary stinging nettle (*Urtica dioica ssp. holosericea*), watercress (*Nasturtium officinale*), water parsley (*Oenanthe sarmentosa*), silver weed cinquefoil (*Potentilla anserine*) and curly dock (*Rumex crispus*). Hydrophytic plants appeared to be restricted to the creek bed around the pipe. *Typha sp.* was also observed further upstream covering a larger area possibly indicating a potential wetland or a wider stream bed.

Other plant species observed at the toe of the arroyo and within the creek bed and bank included Italian stone pine (*Pinus pinea*), garden nasturtium (*Tropaeolum majus*), cape ivy (*Delairea odorata*), pampas grass (*Cortaderia selloana*), periwinkle (*Vinca species*), wild radish (*Raphanus sp.*), and iceplant/hottentot fig (*Carpobrotus edulis*).

Monterey cypress lined the top of the arroyo and continued down the slope. A portion of the arroyo adjacent to the project boundary was degraded by human use (i.e. rope swings on the cypress trees). There was no visible understory.

VEGETATION COMMUNITIES, SENSITIVE HABITATS AND SPECIAL STATUS SPECIES

Plant Communities

The study area consisted of five general vegetative communities described below (figure 2). Refer to Appendix B for a complete list of plants observed during the field surveys.

Non-native Grassland/Ruderal. Non-native Grassland/Ruderal vegetation covers the majority of the project site. “Ruderal” refers to areas that have been heavily impacted by human disturbance, such as roadsides and old fields/vacant lots, and support vegetation that is adapted to that type of environment. Ruderal species recorded within the study area were primarily non-native. The dominant species included non-native gazania and non-native grasses. Few native grass species detected included California brome (*Bromus carinatus* var. *carinatus*) and California hairgrass (*Deschampsia cespitosa* ssp. *holciformis*). Beach strawberry (*Fragaria chiloensis*) was observed on this community, concentrated mostly around a Monterey cypress and bordering the dense poison oak/California blackberry patch. Iceplant (*Carpobrotus edulis*) was also present on the study area.

Monterey Cypress. Cypress trees line the southern boundary of the parcel, along and downward on the arroyo slopes. The understory was characterized by bare ground and non-native plants. A single cypress tree, growing apart from the grove, was observed on the southern portion of the project area.

Poison Oak/California Blackberry. A poison oak/California blackberry was on the southern portion of the parcel (Figure 2). The poison oak/California blackberry habitat included common yarrow, bee plant, wild radish and stinging nettle. This community was adjacent to the cypress grove and bordering the arroyo. California blackberry was also found throughout the arroyo.

Herbaceous/Ruderal. A dense cover, dominated by non-native species, was observed on the arroyo slopes and bottom. Dominant species included periwinkle (*Vinca* sp.), nasturtium, cape ivy, California blackberry, and iceplant.

Wetland/Riparian. Hydrophytic plants were observed along the sides of the pipe on the creek bed. Species included Typha species, watercress, water parsley, and stinging nettle.

Sensitive Habitats

The Section 7.1 of the County of San Mateo LCP 7.1 defines Sensitive Habitats

“as any area in which plant or animal life or their habitats are either rare or especially valuable and any area which meets one of the following criteria: (1) habitats containing or supporting “rare and endangered” species as defined by the State Fish and Game Commission, (2) all perennial and intermittent streams and their tributaries, (3) coastal tide lands and marshes, (4) coastal and offshore areas containing breeding or nesting sites and coastal areas used by migratory and resident water-associated birds for resting areas and feeding, (5) areas used for scientific study and research concerning fish and wildlife, (6) lakes and ponds and adjacent shore habitat, (7) existing game and wildlife refuges and reserves, and (8) sand dunes. Sensitive habitat areas include, but are not limited to, riparian corridors, wetlands, marine habitats, sand dunes, sea cliffs, and habitats supporting rare, endangered, and unique species. In addition to the intermittent creek discussed above, the study includes sea cliffs (bluffs).”

Four sensitive habitats were observed on the study area: habitats supporting rare and endangered

Attachment G

Fitzgerald Marine Reserve

0 40 80 Feet

Legend

— Dean Creek Pipe	Habitats	grassland and ruderal
Dean Creek Habitat	Monterey cypress	herbaceous
Project Area	beach strawberry	iceplant
	cattail (<i>Typha</i> sp.)	poison oak

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Study Area Aerial View

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Figure 3
Study Area Vegetation
and Habitats



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species; Dean Creek; Fitzgerald Marine Reserve, an existing game and wildlife refuges and reserves; and sea cliffs (bluffs). Dean Creek, Fitzgerald Marine Reserve and vegetation communities of the study area have the potential to

Dean Creek

Dean Creek is an intermittent stream that provides potentially suitable habitat for rare, endangered and special status species. Per San Mateo County Local Coastal Program Policy 7.1, all intermittent streams are defined as sensitive habitats. Policy 7.3 (b) Protection of Sensitive Habitats states: "Development in areas adjacent to sensitive habitats shall be sited and designed to prevent impacts that could significantly degrade the sensitive habitats. All uses shall be compatible with the maintenance of biologic productivity of the habitats." The required buffer zone, pursuant to 7.11 Establishment of Buffer Zones (b), requires a 30-foot buffer zone from the midpoint of intermittent streams where no riparian vegetation exists along both sides of riparian corridors.

The project would have no impact on the intermittent stream or associated wetland vegetation. Dean Creek elevation ranges from 10 feet to 62 feet (creek mouth to Cabrillo Highway). The stream's elevation south of the project site is approximately 35 feet. The stream's centerline was approximately 28 to 40 feet from the project area. The proposed scenic easement would exceed the LCP intermittent stream buffer zone of 30-feet. The mid-point was based on the observed pipe located on the streambed and a review of the USGS NHD.

Fitzgerald Marine Reserve

The Fitzgerald Marine Reserve is managed by the County of San Mateo Parks Department. It is an Ecological Reserve by State of California designation authorized by the Marine Resources Protection Act of 1990 (California Fish and Game Code, Article 4, Section 1580-1584) (County Parks Department 2015). The ecological reserve is intended to protect natural areas with use restricted to scientific research relating to the management and enhancement of marine resources. Except as authorized in conjunction with scientific research approved by the California Department of Fish and Game and the San Mateo County Department of Parks, no disturbance or taking of marine life, archaeological resources or geological formations is allowed, and no fishing or collecting is permitted (County Parks Department 2015). The project would not impact the marine reserve.

Sea Cliffs

The project would not impact the sea cliff with the implementation of the required 50-foot setback.

List and discuss all probable impacts to threatened, rare, endangered or unique species either listed or proposed by the Local Coastal Program, a Federal or State agency, or the California Native Plant Society, both on-site and within an area of one- quarter mile radius from the project location.

Special Status Plants

Based on the review of available databases and literature for the six-quad search area, 56 special-status vascular and non-vascular plant species were identified with the potential to occur (CDFW 2015; CNPS 2015; USFWS 2015). Table 2 in appendix A describes each species, its habitat requirements, regional occurrences, listing status and potential to occur in the study area. Special status plant species known to occur within 3 miles the vicinity of the study area are shown in figure 3. Representative photographs of the study area appear in appendix B.

No special status species were detected during the field visit. Suitable habitat may be present for (*Potentilla hickmanii*) and coastal marsh milk-vetch on the Dean Creek habitat. Two CNPS listed species, coast yellow leptosiphon (*Leptosiphon croceus*) and rose leptosiphon (*L. rosaceus*), could have the potential to occur on the study area based on background research. However, these were deemed absent with no potential to occur because none were detected during the survey that was conducted in the peak blooming period. The peak blooming period was confirmed by visiting to two reference populations located within 1 mile of the project.

There were no USFWS-designated critical habitats for plant species within 5 miles of the project area. A complete list of plant species observed during the field survey is included with this report as appendix C. Hydrophytic plants are classified according to the *Arid West, 2013 Regional Wetland Plant List* (Lichvar 2013).

Special Status Wildlife

Based on a six-quadrant query of special-status wildlife, a total of 32 special status wildlife species were considered to have potential to occur (appendix A). CNDDDB special-status wildlife species recorded within five miles of the study area are shown in figure 4. A summary of the formal status, habitat affinities, and potential for occurrence within the study area for each of the wildlife species assessed is presented in appendix A, table 3. No special-status species or signs of special status species were detected during the field survey. Species dependent upon ocean and beach habitat are not included in this analysis because the project would have no impact to salt water and beach habitats.

Six special-status or unique species have the potential to occur in the study area: monarch butterfly (*Danaus plexippus*), California red-legged frog (*Rana draytonii*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), salt marsh common yellowthroat (*Geothlypis trichas sinuosa*), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), and hoary bat (*Lasiurus cinereus*). These species have the potential to occur in the study area due to nearby occurrences and/or potentially suitable habitat.

Monarch Butterfly (*Danaus plexippus*)

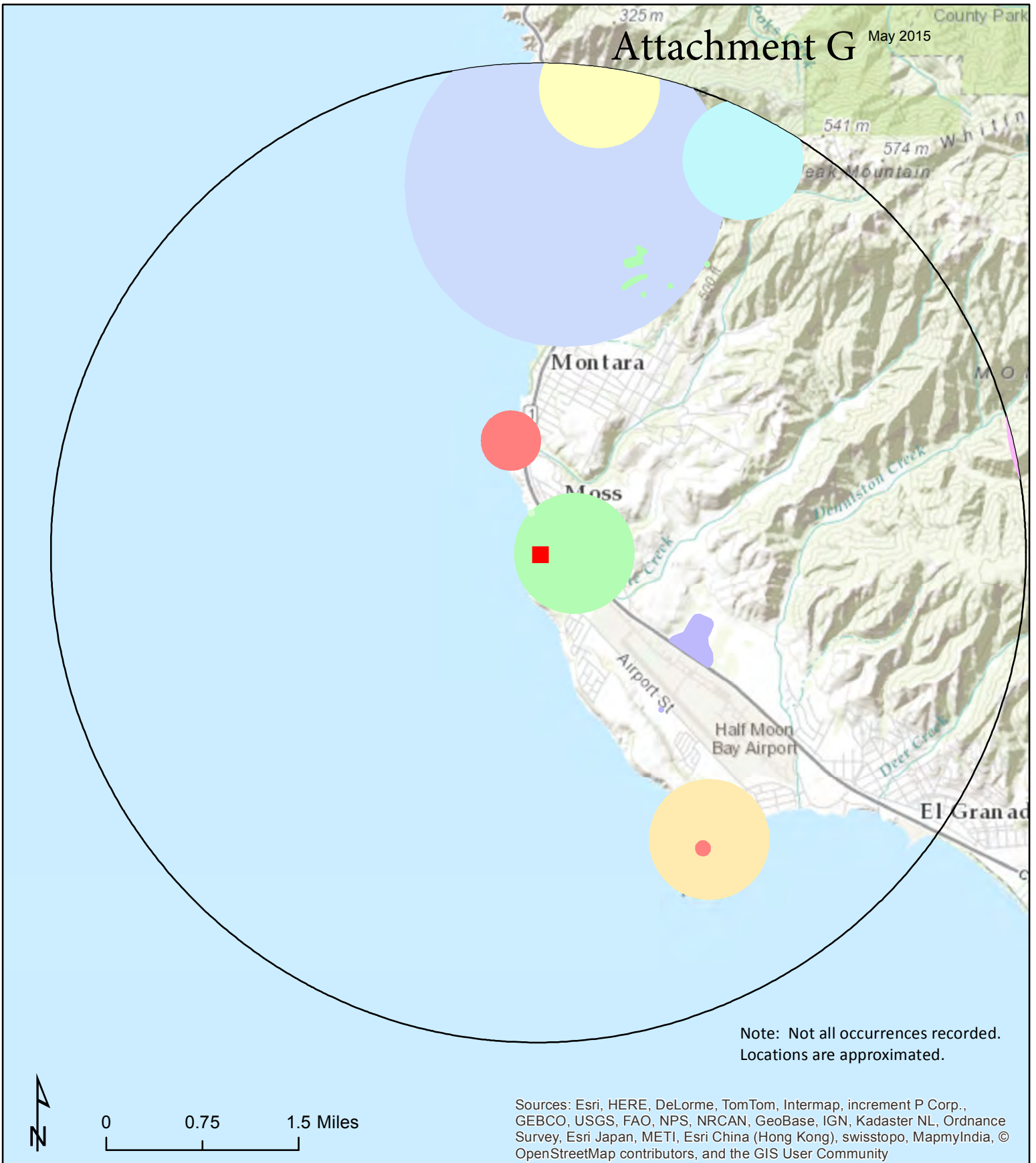
The nearest known roost site is located approximately 2 miles east of the project. The Monterey cypress, on the project area, has the potential to provide winter roosting habitat. Threats to monarch butterflies include loss of winter roost habitat. Tree removal on the project area could result in a less than significant impact to potential winter roosting habitat as the majority of the cypress grove would not be affected by the project.

California red-legged frog (*Rana draytonii*)

The California red-legged frog (CRF) is a federally threatened species and a California Species of Special Concern. These ranids spend the majority of their lives in or near ponds, marshes, springs, streams, and reservoirs. Aquatic areas characterized by deep pools and associated dense stands of overhanging willows and cattails are considered optimal habitat. CRF have been documented to breed in artificial ponds (i.e. stock and agricultural ponds) as well as natural ponds and wetlands. Breeding occurs generally between November and March and frogs often lay their eggs during or shortly after large rainfall events in late winter or early spring. Their eggs require 11-20 weeks for larval development (Stebbins and McGinnis 2011).

CRF were recorded moving long distances over land between water sources during winter rains

Attachment G May 2015



Legend

- | | |
|--|--|
| ■ Project | — San Francisco campion |
| Three mile buffer | ■ San Francisco gumpiant |
| ■ Franciscan thistle | ■ coast yellow leptosiphon |
| ■ Hickman's cinquefoil | ■ coastal marsh milk-vetch |
| ■ Kings Mountain manzanita | ■ rose leptosiphon |
| ■ Ornduff's meadowfoam | |

Figure 4

CNDDDB Special Status Plants within a 3-mile radius



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with movements occurring mostly at night. Bulger et al. (2003) documented adult California red-legged frog moving more than 2 miles “without apparent regard to topography, vegetation type, or riparian corridors” in northern Santa Cruz County. Upland habitat requirements include a blend of riparian, upland dispersal habitats with downed woody vegetation, leaf litter, and small mammal burrows, which provide protection from predation and desiccation.

The USFWS has designated four primary constituent elements (PCEs) considered to be essential for the conservation or survival of this species. These include aquatic breeding habitat, non-breeding aquatic habitat, upland habitat, and dispersal habitat (USFWS 2006). Dispersal habitat includes accessible upland or riparian habitats between occupied locations within 0.7 miles of each other that allow for movement between sites. Moderate to high density urban or industrial developments, large reservoirs and heavily traveled roads without bridges or culverts are considered barriers to dispersal (USFWS 2006).

Critical Habitat. Federally designated critical habitat is located within approximately 0.5 miles east of the study area.

Habitat assessment and occurrence in the study area. CRF adults or juveniles were not observed during the site visit; however, CRF have been found within approximately 1.5 miles to the south near ponds located west of the Half Moon Bay Airport and a sighting was reported during the construction of the nearby Fitzgerald Marine Reserve Dardenelle Trail in 2012. Since the study area was within species’ dispersal range, the potential for occurrence in study area remains. Breeding habitat was not observed on the project area.

Threats. California red-legged frogs are threatened by a variety of human caused actions such as urban development, wetland habitat loss and habitat fragmentation. CRF also fall prey to species such as domestic cats, raccoons, snakes and bullfrogs.

San Francisco garter snake (*Thamnophis sirtalis tetrataenia*)

The San Francisco garter snake (SFGS) is a federal and state listed endangered species and it is a fully protected species under Section 5050 of the CFGC. Historically, SFGS’s range was restricted to the San Francisco Peninsula from just south of the San Francisco-San Mateo County border along the eastern and western base of the Santa Cruz Mountains. While some local populations may have been either extirpated or diminishing, the species’ range may not have changed (USEPA 2010).

Prime habitats include aquatic habitats with dense vegetation, preferably near open hillsides, and with shallow water edges (EPA 2010). The SFGS’s peak activity occurs during spring and early summer when they are typically found near ephemeral ponds hunting Pacific tree frogs (*Pseudacris regilla*) that use the shallow ponds for breeding. As the ephemeral ponds dry, SFGS move to more permanent aquatic habitats where CRF breed, another valuable prey source. Other prey species include California newts (*Taricha torosa*), western toads (*Anaxyrus boreas*), and mosquito fish (*Gambusia affinis*). SFGS also requires suitable upland habitats for basking, shelter and hibernacula (Stebbins 2011; EPA 2010).

Upland habitat characteristics include, but are not limited to, open grassy habitat, coyote bush (*Bacharis pilularis*), wild oat (*Avena fatua*), wild barley (*Hordeum spp.*) and various brome species (*Bromus spp.*) (USFWS 2006; Larsen 1994). Shrub species likely provide sufficient cover from predators and grasses provide exposed surfaces for basking (USFWS 2006). San Francisco garter snake also retreat to shelters for dormant periods (hibernacula); upland habitats inhabited by fossorial mammals, such as Botta’s pocket gopher, provide

important hibernacula.

Mating occurs generally during early warm days of spring as snakes emerge from hibernacula and disperse to nearby aquatic habitat (EPA 2010). Females retain fertilized eggs inside their body until hatching, generally in July and August, so that SFGS offspring are born live and independent (EPA 2010). A single female may produce 12-24 offspring (EPA 2010).

Threats. San Francisco garter snakes are threatened by a variety of human caused actions such as urban development, wetland habitat loss and habitat fragmentation. San Francisco garter snake also fall prey to species such as domestic cats, raccoons and bullfrogs.

Critical Habitat. Critical habitat has not been designated for this species.

Habitat assessment and occurrence in the study area. The historic range for SFGS includes the entirety of San Mateo County (USFWS 2006). The nearest occurrence was approximately 1.5 miles south of the study area. Since the project area was within species' dispersal range, there was the potential for Dean Creek and the study area could provide dispersal and upland habitat for this species.

San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)

The San Francisco dusky-footed woodrat is a CDFW species of special concern. This species typically inhabits brushy and forested habitats in California. The woodrat builds mounded, multi-chambered stick complexes, often referred to as lodges, which range from 4 to 8 feet in diameter and up to 6 feet in height.

San Francisco dusky-footed woodrat structures were not observed on the study area but since the creek habitat was inaccessible it was not possible to eliminate the species potential for occurrence in the arroyo. The study area provided potential for San Francisco dusky-footed woodrat to use the poison oak and Monterey cypress habitat for forage and nesting.

Threats. Habitat loss and anthropogenic disturbance threaten this species.

Salt marsh common yellowthroat (*Geothlypis trichas sinuosa*)

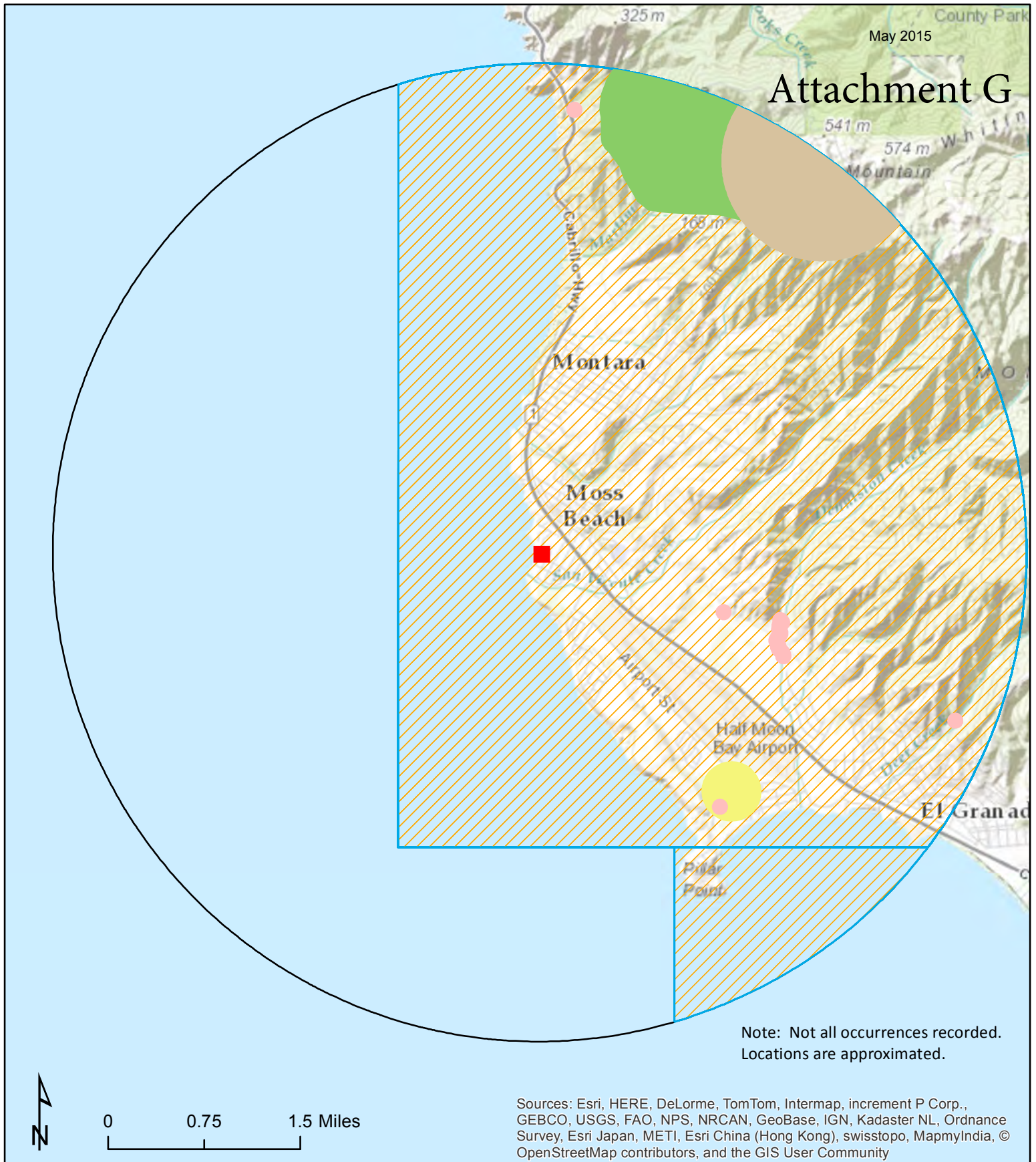
The salt marsh common yellowthroat is a California species of special concern. It is a year round resident of San Mateo County. Its primary habitat includes dense vegetation of wetlands, marshes, estuaries, prairies and riparian areas that are used for nesting and foraging. The nearest recorded occurrence was approximately 1.8 miles south of the project in Princeton Marsh (CNDDDB 2012). This species was not detected during the site visit; however, Dean Creek has potentially suitable habitat to support this species.

Bats

All bat species are given special consideration under CEQA. Bats could roost in nearby structures and Monterey cypress and may forage over the site. Threats include loss of habitat and mortality due to human activities.

Migratory Nesting Birds and Raptors

Attachment G



Legend

- Project
- Three mile buffer
- American badger
- San Bruno elfin butterfly
- California red-legged frog
- San Francisco garter snake
- saltmarsh common yellowthroat
- monarch - California overwintering population

Figure 5

CNDDDB Special Status Wildlife within a 3-mile radius



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The Monterey cypress and poison oak provide suitable nesting and foraging habitat for migratory nesting birds and raptors.

Migration, Travel Corridors and Habitat Fragmentation

The project would result in the loss of some habitat that could potentially be used for migration and travel corridors; however, the project would likely result in less than significant adverse effects to the movement of native resident species or migratory wildlife species or corridors. The arroyo, sea cliffs and adjacent vacant lot would continue to provide connectivity to migration and travel corridors.

The following wildlife species, or signs of wildlife, were detected during the 2015 field survey: American bushtit (*Psaltriparus minimus*), chestnut-backed chickadee (*Poecile rufescens*), house finch (*Carpodacus mexicanus*), killdeer (*Charadrius vociferous*) and California towhee (*Pipilo crissalis*). Signs of Botta's pocket gopher (*Thomomys bottae*), domestic dog (*Canis lupus familiaris*), and domestic cat (*Felis catus*) were detected on the study area.

DISCUSSION, IMPACT ANALYSIS AND MITIGATION MEASURES

The impact assessment was based on the project information provided by Carlos Zubieta, architect, standard building practices for single-family residences, and the standards of significance described below. The impact assessment discusses impacts to the study area. Avoidance and mitigation measures are presented in table 1.

STANDARDS OF SIGNIFICANCE

The following thresholds for measuring a project's environmental impacts are based on Appendix G of the CEQA Guidelines and previous standards of significance used by the City (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15000 et seq.).

For the purpose of this report, impacts are considered significant if the following could result from implementation of the proposed project:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, endangered, threatened, or other special status in local or regional plans, policies and regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies and regulations, or by the CDFW or USFWS;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, coastal, riverine, stream, marsh, vernal pool, etc.) as a result of direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

- Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.
- CEQA Guidelines Section 15380 further provides that a plant or wildlife species may be treated as "rare or endangered" even if not on one of the official lists if it is likely to become endangered in the foreseeable future.

An evaluation of the significance of potential impact on biological resources must consider both direct effects to the resource as well as indirect effect in a local or regional context. Potentially significant impacts would generally result in the loss of a biological resource or obviously conflict with local, state, or federal agency conservation plans, goals, policies, or regulations. Actions that would potentially result in a significant impact locally may not be considered significant under CEQA if the action would not substantially affect the resource on a population-wide or region-wide basis. Impacts are denoted by BIO-IMP and mitigation measures are denoted by BIO-MM.

IMPACTS AND MITIGATION MEASURES

Wetlands and Sensitive Habitats. The Project would not result in substantial adverse effects to any County, State or Federally protected wetlands or streams through direct removal, filling, hydrological interruption, or other means provided appropriate buffer areas and construction best management practices are implemented. However, construction activities could increase stormwater runoff to Dean Creek. Implementation of mitigation measures such as sediment and erosion control best management practices would reduce impacts to less than significant. See table 1, BIO-IMP 1 and BIO-MM1.

Special Status Species.

The project would result in no impacts to special status plants. Although some special status plants occur within one mile of the project area, field surveys conducted during peak blooming period found no special status plants on the project area or no potentially suitable habitat on the project area.

Beach strawberries were observed on the project area and would be impacted by the project clearing. California wild strawberry is regulated by the LCP as stated below.

Policy 7.49 Require any development, within one-half mile of the coast, to mitigate against the destruction of any California wild strawberry in one of the following ways:

- a) Prevent any development, trampling, or other destructive activity which would destroy the plant; or
- b) After determining specifically if the plants involved are of particular value, successfully transplant them or have them successfully transplanted to some other suitable site. Determination of the importance of the plants can only be made by a professional doing work in strawberry breeding.

This California wild strawberry population was determined to be of no significant value by a professional doing work with strawberry breeding (Mark Bolda, personal communication, May 7, 2015). Thus, mitigation would not be required for population.

Special status plant species occurring within a 3-mile radius were identified. Coastal marsh milk-vetch, Hickman's cinquefoil, rose leptosiphon and yellow leptosiphon habitat characteristics include the stream habitat and coastal bluff observed on the study area. The project would have no impact on the stream habitat, with implementation of stormwater best management practices to the stream habitat, thus, no impact to these species. There would be no impact to coastal bluff species because these species were deemed absent from the project area.

Construction activities could result substantial adverse effects to California red-legged frog and San Francisco garter snake in the form of direct mortality from construction activities and indirectly by interfering with dispersal. Both species have the potential for dispersal and movement from breeding ponds and creeks into the study area during significant rain events. Construction activities include, but are not limited to, vegetation removal, grading, staging and other construction related activities related to the proposed project. Implementation of mitigation measures would reduce potential adverse effects to less than significant.

At no time should California red-legged frog and San Francisco garter snake be handled, harassed or approached (i.e. picked up, trapped, or any action altering the natural behavior, etc.). If the species are observed, work shall stop until it leaves the worksite on its own, or if it does not leave, coordination with the USFWS and CDFW shall be implemented.

Implementation of BIO-MM2 would reduce impacts to less than significant.

Impacts to Nesting Migratory Birds and Raptors including salt marsh common yellowthroat. If the project activities coincide with the typical nesting bird season (February 15 to September 15), the project has the potential to result in substantial adverse effects to nesting birds as a result of nest abandonment or direct take of birds, young, nests, and eggs. Vegetation removal should occur, if possible, during the non-nesting period. Implementation of BIO-MM3 would reduce impacts to less than significant.

Impacts to San Francisco Dusky-footed Woodrat. The project could result in significant adverse effects to San Francisco dusky-footed woodrat if woodrats are nesting in the poison oak habitat. Implementation of BIO-MM4 would reduce effects to less than significant.

Impacts to Movement of Native Resident or Migratory Wildlife Species or Migratory Corridors. Although the project would eliminate some habitat, the arroyo, cypress grove and undevelopable adjacent lot will continue to provide movement corridors for native resident and migratory wildlife. The project would result in no impact to this resource.

Table 1 Impacts and Mitigation Measures

Impact	Mitigation Measure	Result
BIO-IMP 1: <i>Potential impacts to County, State or Federally protected wetlands or streams.</i> Less than significant with implementation of mitigation measures.	BIO-MM1: Implement stormwater best management practices to reduce stormwater related erosion in accordance with the County's LCP. Where sediment erosion control materials are installed, repaired or removed (i.e. wattles, silt fences, etc.), a qualified biologist should check the work area to ensure that sensitive species are not present or entrapped. Polymesh and/or other similar materials should not be used as these can entrap or snag reptiles, amphibians, or other small animals.	Implementing the mitigation measures would reduce any potential effects to wetlands or streams to less than significant by controlling sediment and erosion.
BIO-IMP 2: <i>Impacts to California red-legged frog and San Francisco garter snake.</i> Project could result in substantial adverse effects to CRF and SFGS in the form of direct mortality from construction activities, and indirectly by interfering with dispersal.	BIO-MM2: Avoid, minimize and mitigate for impacts to CRF and SFGS and their habitat. Within 48 hours prior to the onset of any project-related project activities qualified biologist should conduct pre-construction surveys of the project area to ensure that no CRF or SFGS are present. Immediately prior to vegetation removal or other construction activities, a biologist familiar with the habitat requirements of California red-legged frog and San Francisco garter snake shall conduct a preconstruction survey to determine whether any of these species is within the project area. A minimum 3-foot high exclusion fence shall be installed around the limits of construction, including clearing, grading, and staging, or the entire to create a barrier that would prevent CRF and SFGS from entering the project site unless otherwise directed by the County, USFWS or CDFW. No polymesh or similar materials should be used as fencing materials. The fencing should be removed only when all construction equipment is removed from the site. Fencing shall be inspected and any opening shall be repaired immediately. If openings are found, the project area shall be inspected by a biological monitor to ensure special status species have not entered the project area. If California red-legged frog or San Francisco garter snake are identified in the work area during preconstruction surveys or at any subsequent time during construction, construction activities in the immediate area shall halt until the species has left the area without interference. Vegetation or other materials should not be stockpiled at the worksite as it provides potential hiding areas for CRF and SFGS (and other wildlife species). Vegetation should be placed directly into a disposal container and removed from the area, as is practicable. If vegetation is stockpiled on the ground, removal should be conducted under the	Implementing mitigation measures would avoid or reduce adverse affects to California red-legged frog and San Francisco garter snake.

Table 1 Impacts and Mitigation Measures

Impact	Mitigation Measure	Result
	supervision of a qualified biologist. A worker education program and/or education materials prepared by a qualified biologist shall be provided to all workers on site prior to onset of activities. If required by the County, CDFW or USFWS, a biological monitor shall inspect the project area prior to the beginning of construction activities to ensure CRF and SFGS have not entered the project area. The designated biological monitor could be a construction team manager or supervisor trained in the identification of special-status species. Under no circumstances should CRF and SFGS be handled, relocated or otherwise harmed or harassed at any time. The County, USFWS and CDFW shall be notified immediately upon discovery of this species on the project areas.	
BIO-IMP 3: <i>Impacts to nesting migratory birds and raptors.</i> The project could result in nest destruction or nest abandonment during construction activities.	BIO-MM3: Pre-construction nesting bird surveys and buffer zones. If the project activities coincide with the nesting bird season (February 1 to September 15), pre-construction nesting bird surveys shall be conducted by a CDFW-approved biologist no more than 10 days prior to planned construction activities in order to locate nests within and adjacent to the proposed work area. For all migratory bird species, the survey will include nesting birds within an area 100 feet from the project. If no active nests are detected, construction activities can take place as scheduled. If an active nest is observed, the following shall be implemented: The project should be modified as necessary to avoid direct take of identified nest, eggs, and/or young. Modifications may include establishment of protective buffer as determined by a qualified biologists. Typical protective buffer zones are 50-feet for passerine nests and 250-feet for raptors. If construction activities are significantly impacted by the buffer zones, CDFW should be contacted to request a reduced buffer that would still protect nesting birds.	Nesting birds, including salt marsh common yellowthroat, would be protected from disturbance and harm.

Table 1 Impacts and Mitigation Measures

Impact	Mitigation Measure	Result
BIO-IMP 4: <i>Impacts to San Francisco Dusky-footed Woodrat</i>. The project could result in adverse effects to San Francisco dusky-footed woodrat in the form of nest destruction.	BIO-MM4: Pre-construction survey, Flag and Relocate Dusky-footed Woodrat Nests. Prior to the start of vegetation removal, a biologist familiar with the species and its habitat requirements shall survey for San Francisco dusky-footed woodrat nests within or immediately adjacent to the potential habitat (i.e. poison oak scrub). If no nests observed, then no further mitigation would be required. If nests are observed but would not be directly impacted by project activities, the biologist shall establish a 10-foot buffer around the nests using exclusion fencing to ensure they are not accidentally destroyed by construction activities. Exclusion fencing shall remain in place until project completion. If a nest is found within the vegetation clearing area, a qualified biologist shall disassemble the nest by hand and relocate/reconstruct it beyond the work area.	Mitigation measures would protect San Francisco dusky-footed woodrats by reducing potential for harm.
BIO-IMP 5: Potential impacts to roosting bats. Bats may roost in cypress trees on the project site. Tree removal or pruning could result in bat mortality.	BIO-MM5: Preconstruction surveys. If trees are not removed or pruned, no further action is necessary. If trees are removed or pruned, a qualified biologist shall conduct a pre-construction bat roost survey to determine if bats are present in the trees. If bats are detected, suitable measures to avoid and/or exclude bats shall be determined by CDFW.	Mitigation measures would avoid injury to roosting bats.

Attachment G

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Attachment G

APPENDIX A

SPECIAL STATUS SPECIES

TABLES 2 AND 3

Table 2 Special Status Plant Species – Potential to Occur				
Scientific Name Common Name	STATUS		Elevation (meters) Blooms (period) Habitat (general description)	Potential for Occurrence
	CDFW/CNPS	FEDERAL, STATE		
<i>Acanthomintha duttonii</i> San Mateo thorn-mint	1B.1	FE, CE	Elevation: 50-300 Bloom Period: Apr-Jun Habitat: Chaparral, Valley Grassland	None. Project was outside of elevation range for species. Species was not observed during field surveys conducted within bloom period.
<i>Allium peninsulare</i> var. <i>franciscanum</i> Franciscan onion	1B.2	--	Elevation: 50-300 Bloom Period: May-Jun Habitat: Cismontane Woodland, Valley and Foothill Grassland	None. Project was outside of elevation range for species. Habitat was greatly disturbed by human activity.
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	1B.2	--	Elevation: 50-500 Bloom Period: Mar-Jun Habitat: Valley Grassland, Foothill Woodland	None. Project was outside of elevation range for species. Species was not observed during field surveys conducted within bloom period.
<i>Arctostaphylos andersonii</i> Anderson's manzanita	1B.2		Elevation: 60-760 Bloom Period: Nov-May Habitat: Chaparral, Mixed Evergreen Forest, Redwood Forest	None. Project was outside of elevation range for species and potentially suitable habitat was absent.
<i>Arctostaphylos franciscana</i> Franciscan manzanita	1B.1	FE	Elevation: 60-300 Bloom Period: Feb-Apr Habitat: Chaparral	None. Project was outside of elevation range for species and potentially suitable habitat was absent.
<i>Arctostaphylos imbricata</i> San Bruno Mountain manzanita	1B.1	CE	Elevation: 275-365 Bloom Period: Feb-May Habitat: Chaparral	None. Project was outside of elevation range for species and potentially suitable habitat is not present.
<i>Arctostaphylos montana</i> <i>ssp. ravenii</i> Presidio manzanita	1B.1	FE, CE	Elevation: 20-215 Bloom Period: Feb-Mar Habitat: Open rocky serpentine slopes, Coastal Scrub, Coastal Prairie, Chaparral	None. Suitable habitat was not present. Manzanitas were not observed on the project area.
<i>Arctostaphylos montaraensis</i> Montara manzanita	1B.2	--	Elevation: 150-500 Bloom Period: Jan-Feb Habitat: Chaparral, Northern Coastal Scrub	None. Project was outside of elevation range for species. Manzanitas were not observed on the project area.
<i>Arctostaphylos pacifica</i> Pacific manzanita	1B.2	CE	Elevation: not available Bloom Period: Feb-Apr Habitat: Coastal Scrub	None. Suitable habitat was not present. Manzanitas were not observed on the project area
<i>Arctostaphylos</i>	1B.2	--	Elevation: 305-730	None. Project was outside of elevation range

Table 2 Special Status Plant Species – Potential to Occur				
Scientific Name Common Name	STATUS		Elevation (meters) Blooms (period) Habitat (general description)	Potential for Occurrence
	CDFW/CNPS	FEDERAL, STATE		
<i>regismontana</i> Kings Mountain manzanita			Bloom Period: Jan-Apr Habitat: Chaparral, Mixed Evergreen Forest, North Coastal Coniferous Forest	range for species and potentially suitable habitat is not present. Manzanitas were not observed on the project area.
<i>Astragalus pycnostachyus</i> <i>var. pycnostachyus</i> coastal marsh milk vetch	1B.2	--	Elevation: 0-30 Bloom Period: Apr-Oct Habitat: wetland-riparian	Possible. Potentially suitable habitat present near Dean Creek. Nearest recorded occurrences within the Crystal Springs Reservoir area approximately 9 miles east.
<i>Astragalus tener</i> <i>var. tener</i> alkali milk vetch	1B.2	--	Elevation: 1-170 Bloom Period: Mar-Jun Habitat: Valley Grassland, alkali sink, freshwater wetlands, wetland-riparian, playas, vernal pools	None. Suitable habitat absent. Last recorded occurrence approximately 15 northeast, in 1868, possibly extirpated (CNDDDB 2015).
<i>Carex comosa</i> <i>bristly sedge</i>	2B.1	--	Elevation: 5-1005 Bloom Period: May-Sept Habitat: Freshwater Wetlands, wetland-riparian	None. Suitable habitat absent. Last recorded occurrence approximately 15 northeast, in 1868, possibly extirpated (CNDDDB 2015).
<i>Centromadia parryi</i> <i>ssp. parryi</i> Pappose tarplant	1B.2	--	Elevation: 2-420 Bloom Period: May-Nov Habitat: Coastal Prairie, Meadows, and Seeps, Coastal Salt Marsh, Valley and Foothill Grassland	Not. Expected. Suitable habitat (grassland) was highly disturbed by human use. Single recorded occurrence north within approximately 6 miles.
<i>Chloropyron maritimum</i> <i>ssp. palustre</i> Point Reyes salty bird's - beak	1B.2	--	Elevation: 0-10 Bloom Period: Jun-Oct Habitat: Coastal Salt Marsh	None. Suitable habitat was not present.
<i>Chorizanthe cuspidata</i> <i>var. cuspidata</i> San Francisco Bay spineflower	1B.2	--	Elevation: 3-215 Bloom Period: Apr-Jul Habitat: Coastal strand, Coastal Prairie, Northern Coastal Scrub.	None. Suitable habitat was not present. Nearest recorded occurrences approximately 6 miles north. Species was not observed during field visit within bloom period.

Table 2 Special Status Plant Species – Potential to Occur				
Scientific Name Common Name	STATUS		Elevation (meters) Blooms (period) Habitat (general description)	Potential for Occurrence
	CDFW/CNPS	FEDERAL, STATE		
<i>Chorizanthe robusta</i> var. <i>robusta</i> Robust spineflower	1B.1	FE	Elevation: 3-120 Bloom Period: Apr-Sep Habitat: Coastal strand, Foothill Woodland, Northern Coastal Scrub	None. Suitable habitat was not present. Nearest recorded occurrences approximately 11 miles north from 1913. Species not observed on site.
<i>Cirsium andrewsii</i> Franciscan thistle	1B.2	--	Elevation: 0-150 Bloom Period: Mar-Jul Habitat: Mixed Evergreen Forest, Northern Coastal Scrub, wetland-riparian	Not expected. Habitat was greatly disturbed. Species not observed during surveys conducted during bloom period. Nearest recorded occurrence approximately 2.25 miles north.
<i>Cirsium fontinale</i> var. <i>fontinale</i> Crystal Springs fountain thistle	1B.1	FE, CE	Elevation: 45-175 Bloom Period: May-Oct Habitat: Chaparral, Valley Grassland, wetland-riparian	None. Habitat was greatly disturbed. Project was below minimum elevation range for species.
<i>Cirsium occidentale</i> var. <i>compactum</i> Compact cobwebby thistle	1B.2	--	None.	Not expected. Habitat was greatly disturbed. Nearest recorded occurrence from 1957 approximately 13 miles north project.
<i>Collinsia multicolor</i> San Francisco collinsia	1B.2	--	Elevation: 30-250 Bloom Period: Mar-May Habitat: Northern Coastal Scrub, Closed-cone Pine Forest	Not expected. Habitat was greatly disturbed by human use. Nearest recorded occurrence approximately 4 miles north. Species was not observed during field surveys conducted during bloom period.
<i>Dirca occidentalis</i> Western leatherwood	1B.2	--	Elevation: 25-4425 Bloom Period: Jan-Mar Habitat: Chaparral, Foothill Woodland, Mixed Evergreen Forest, Closed-cone Pine Forest, North Coastal Coniferous Forest, wetland-riparian	None. Suitable habitat was not present.
<i>Eriophyllum latilobum</i> San Mateo woolly sunflower	1B.1	FE, CE	Elevation: 45-150 Bloom Period: May-Jun Habitat: Foothill Woodland	None. Project was outside of elevation range for species and potentially suitable habitat is not present.

Table 2 Special Status Plant Species – Potential to Occur				
Scientific Name Common Name	STATUS		Elevation (meters) Blooms (period) Habitat (general description)	Potential for Occurrence
	CDFW/CNPS	FEDERAL, STATE		
<i>Fritillaria biflora</i> var. <i>ineziana</i> Hillsborough chocolate lily	1B.1	--	Elevation: 90-160 Bloom Period: Mar-Apr Habitat: Valley and Foothill Grassland	None. Project was outside of elevation range for species.
<i>Fritillaria liliacea</i> fragrant fritillary	1B.2	--	Elevation: 3-410 Bloom Period: Feb-Apr Habitat: Coastal Prairie, Valley Grassland, Northern Coastal Scrub, wetland-riparian	None. Suitable habitat was not present. Fritillaries were not observed on the project area.
<i>Gilia capitata</i> ssp. <i>chamissonis</i> blue coast gilia	1B.1	--	Elevation: 2-200 Bloom Period: Apr-Jul Habitat: Coastal Dunes, Coastal Scrub	None. Suitable habitat was not present.
<i>Grindelia hirsutula</i> var. <i>maritima</i> San Francisco gumplant	3.2	--	Elevation: 15-400 Bloom Period: Jun-Sep Habitat: Valley Grassland, Northern Coastal Scrub, Coastal Sage Scrub, wetland-riparian	Not expected/Possible. Suitable habitat present but greatly disturbed by human use. Nearest recorded occurrence within approximately 1.5 miles north.
<i>Helianthella castanea</i> Diablo helianthella	1B.2	--	Elevation: 25-1150 Bloom Period: Mar-Jun Habitat: Chaparral, Foothill Woodland, Northern Coastal Scrub, Valley Grassland	None. Suitable habitat was not present or greatly disturbed. Nearest recorded occurrence 12 miles northeast..
<i>Hemizonia congesta</i> ssp. <i>congesta</i> congested-headed hayfield tarplant	1B.2	--	Elevation: 20-560 Bloom Period: Apr-Nov Habitat: Northern Coastal Scrub, Valley Grassland	None. Suitable habitat was not present. Species was not observed on the project area.
<i>Hesperovax sparsiflora</i> var. <i>brevifolia</i> short-leaved evax	1B.2	--	Elevation: 0-215 Bloom Period: Mar-Jun Habitat: Coastal Strand, Northern Coastal Scrub	None. Suitable habitat was not present. Species not observed on the project area.
<i>Hesperolinon congestum</i> Marin western flax	1B.1	FT, CE	Elevation: 5-370 Bloom Period: Apr-Jul Habitat: Chaparral, Valley Grassland	None. Suitable habitat was not present or greatly disturbed by human use. Species not observed during field surveys conducted during blooming period. Nearest recorded occurrence

Table 2 Special Status Plant Species – Potential to Occur				
Scientific Name Common Name	STATUS		Elevation (meters) Blooms (period) Habitat (general description)	Potential for Occurrence
	CDFW/CNPS	FEDERAL, STATE		
				approximately 9 miles east.
<i>Heteranthera dubia</i> water star-grass	2B.2	--	Elevation: 30-1495 Bloom Period: Jul-Aug Habitat: wetland-riparian	None. Habitat not present.
<i>Horkelia cuneata</i> var. <i>sericea</i> Kellog's horkelia	1B.1	--	Elevation: 10-200 Bloom Period: Feb-Jul Habitat: Northern Coastal Scrub, Costal Sage Scrub, Closed-cone Pine Forest	None. Suitable habitat was not present. Horkelia was not observed on the project area.
<i>Horkelia marinensis</i> Point Reyes horkelia	1B.2	--	Elevation: 5-30 Bloom Period: May-Sep Habitat: Coastal Strand, Coastal Prairie, Northern Coastal Scrub, (dunes, coastal)	None. Suitable habitat was not present. Nearest recorded occurrence greater than 10 miles east.
<i>Layia carnosa</i> beach layia	1B.1	FE, CE	Elevation: 0-60 Bloom Period: Mar-Jul Habitat: Coastal Strand, (dunes, coastal)	None. Suitable habitat was not present. Species not observed during field survey conducted during bloom period.
<i>Leptosiphon croceus</i> coast yellow leptosiphon	1B.1	--	Elevation: 10-150 Bloom Period: Apr-May Habitat: Coastal Bluff Scrub, Coastal Prairie	Not expected. Habitat greatly disturbed. Reference population in Moss Beach was reviewed same day as field surveys to determine bloom status (full bloom). Species was not observed during field surveys thus not expected on study area.
<i>Leptosiphon rosaceus</i> rose leptosiphon	1B.1	--	Elevation: 0-100 Bloom Period: Apr-Jul Habitat: Coastal Bluff Scrub	Not expected. Habitat greatly disturbed. Reference population in Moss Beach, just south of project, was reviewed same day as field surveys; this population was in bloom. It was not observed during field surveys conducted during bloom period.
<i>Lessingia germanorum</i> San Francisco lessingia	1B.1	FE, CE	Elevation: 20-110 Bloom Period: Jul-Nov Habitat: Northern Coastal Scrub	None - Not expected. Dune habitat not present. Nearest recorded occurrence greater than 10 miles north of project

Table 2 Special Status Plant Species – Potential to Occur				
Scientific Name Common Name	STATUS		Elevation (meters) Blooms (period) Habitat (general description)	Potential for Occurrence
	CDFW/CNPS	FEDERAL, STATE		
			(dunes)	
<i>Limnanthes douglasii</i> var. <i>ornduffii</i> (Ornduff's meadowfoam)	1B.1	--	Elevation: 10-20 Bloom Period: Nov-May Habitat: Agricultural fields, Meadows, Seeps	None. Potentially suitable habitat is not present.
<i>Malacothamnus aboriginum</i> Indian Valley bush-mallow	1B.2	--	Elevation: 150-1700 Bloom Period: Apr-Oct Habitat: Rocky, granitic, Chaparral, Cismontane Woodland	None. Project is outside of elevation range for species and potentially suitable habitat is not present.
<i>Malacothamnus arcuatus</i> arcuate bush-mallow	1B.2	--	Elevation: 15-355 Bloom Period: Apr-Sep Habitat: Chaparral, Cismontane Woodland	None. Potentially suitable habitat is not present.
<i>Malacothamnus davidsonii</i> Davidson's bush-mallow	1B.2	--	Elevation: 185-855 Bloom Period: Jun-Jan Habitat: Chaparral, Cismontane woodland, Coastal Scrub, Riparian Woodland	None. Project is outside of elevation range for species.
<i>Malacothamnus hallii</i> Hall's bush-mallow	1B.2	--	Elevation: 10-550 Bloom Period: May-Oct Habitat: Chaparral, Coastal Scrub, riparian	None. Habitat is greatly disturbed. Nearest recorded occurrence, 1902 and 1891, approximately 5 miles east on Montara Mountain.
<i>Monardella sinuata</i> ssp. <i>nigrescens</i> northern curly-leaved monardella	1B.2	--	Elevation: 0-300 Bloom Period: Apr-Sept Habitat: Dunes, openings in coastal scrub	None. Habitat highly degraded. Nearest recorded occurrence, from 1933, was possibly extirpated and located greater than 10 miles north of project.
<i>Monolopia gracilens</i> woodland woollythreads	1B.2	--	Elevation: 100-1200 Bloom Period: Habitat: Chaparral, Coastal Dunes, Coastal Scrub, Lower Montane Coniferous Forest	None. Project is below of elevation range for species. Nearest recorded occurrence is approximately 4 miles east of project.
<i>Pentachaeta bellidiflora</i> white-rayed pentachaeta	1B.1	FE, CE	Elevation: 35-620 Bloom Period: Mar-May Habitat: Cismontane Woodland,	None. Potentially suitable habitat is not present.

Table 2 Special Status Plant Species – Potential to Occur				
Scientific Name Common Name	STATUS		Elevation (meters) Blooms (period) Habitat (general description)	Potential for Occurrence
	CDFW/CNPS	FEDERAL, STATE		
			Valley and Foothill Grassland (often serpentine)	
<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i> Choris' popcornflower	1B.2	--	Elevation: 15-160 Bloom Period: Mar-Jun Habitat: Chaparral, Coastal Prairie, Coastal Scrub	None - Not expected. Habitat greatly disturbed. Species not observed during field survey conducted during bloom period. Nearest recorded species approximately 6 miles south of project.
<i>Polemonium carneum</i> Oregon polemonium	2B.2	--	Elevation: 0-1830 Bloom Period: Apr-Sep Habitat: Coastal Prairie, Coastal Scrub, Lower Montane Coniferous Forest	None Habitat greatly disturbed. Species not observed during field survey conducted during bloom period. Nearest recorded occurrence approximately 5 miles east from 1916.
<i>Polygonum marinense</i> Marin knotweed	3.1	--	Elevation: 0-10 Bloom Period: Apr-Oct Habitat: Marshes and Swamps (coastal salt or brackish)	None. Potentially suitable habitat is not present.
<i>Potentilla hickmanii</i> Hickman's cinquefoil	1B.1	FE, CE	Elevation: 10-149 Bloom Period: Apr-Aug Habitat: Coastal Bluff Scrub, Closed-cone Coniferous Forest, Meadows and Seeps, Marshes and Swamps (freshwater)	Possible. Potentially suitable habitat may present on the creek bed and the nearest recorded occurrence within the Moss Beach area. Species was not observed during field surveys conducted during bloom period.
<i>Sanicula maritima</i> adobe sanicle	1B.1	CR	Elevation: 30-240 Bloom Period: Feb-May Habitat: Chaparral, Coastal Prairie, Meadows and Seeps, Valley and Foothill Grassland	None. Potentially suitable habitat is not present/highly degraded. Last recorded occurrence from 1896 was greater than 10 miles north of project.
<i>Silene verecunda</i> ssp. <i>verecunda</i> San Francisco companion	1B.2	--	Elevation: 30-645 Bloom Period: Mar-Aug Habitat: Sandy, Coastal Bluff Scrub, Chaparral, Coastal Prairie, Coastal Scrub, Valley and Foothill Grassland	None - Not expected. Habitat is greatly disturbed. Species not observed during field survey conducted within bloom period. Nearest recorded occurrence approximately 4 miles east on Montara Mountain.
<i>Suaeda californica</i> California seablite	1B.1	FE	Elevation: 0-15 Bloom Period: Jul-Oct	None. Potentially suitable habitat is not present.

Table 2 Special Status Plant Species – Potential to Occur				
Scientific Name Common Name	STATUS		Elevation (meters) Blooms (period) Habitat (general description)	Potential for Occurrence
	CDFW/CNPS	FEDERAL, STATE		
			Habitat: Marshes and swamps (coastal salt)	
<i>Trifolium amoenum</i> showy rancheria clover	1B.1	FE	Elevation: 5-415 Bloom Period: Apr-Jun Habitat: Coastal Bluff Scrub, Valley and Foothill Grassland (often serpentinite)	None - Not expected. Habitat is greatly disturbed by human use. Nearest recorded occurrence was approximately 10 miles north from 1907.
<i>Trifolium hydrophilum</i> saline clover	1B.2	--	Elevation: 0-300 Bloom Period: Apr-Jun Habitat: Marshes and Swamps, Valley and Foothill Grassland, vernal pools	None. Potentially suitable habitat is not present or greatly disturbed by human use. Last observed in 1886 approximately 14 miles east.
<i>Triphysaria floribunda</i> San Francisco owl's-clover	1B.2	--	Elevation: 10-160 Bloom Period: Apr-Jun Habitat: Coastal Prairie, Coastal Scrub, Valley and Foothill Grassland	None. Habitat was greatly disturbed by human use. Nearest recorded occurrence approximately 7 miles east. Species not observed on field survey conducted during bloom period.
<i>Triquetrella californica</i> coastal triquetrella	1B.2	--	Elevation: 10-100 Bloom Period: not applicable Habitat: Coastal Bluff Scrub, Coastal Scrub	Not expected. Habitat was greatly disturbed by human use. Nearest recorded occurrence approximately 6 miles north.

TABLE 3 Special Status Wildlife Species – Potential to Occur				
Species	Status		Habitat Association	Potential for Occurrence
	Federal	State		
Invertebrates				
<i>Callophrys mossii bayensis</i> San Bruno elfin butterfly	FE	--	Valley and Foothill Grassland. Coastal, mountainous areas with grassy ground cover, mainly in the vicinity of San Bruno Mountain, San Mateo County. Larval host plant is <i>Sedum spathulifolium</i>	None. Species is restricted to San Bruno Mountain area. Larval host plant was not present.
<i>Danaus plexippus</i> Monarch butterfly	--		Closed-coniferous forest. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	Possible. Cypress trees located on arroyo and project site could provide overwintering roosting habitat, although these trees may not be wind protected.
<i>Euphydryas editha bayensis</i> Bay checkerspot butterfly	FT	--	Coastal dunes, Valley and Foothill Grassland, ultramafic. Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. <i>Plantago erecta</i> is the primary host plant; <i>Orthocarpus densiflorus</i> & <i>O. purpurscens</i> are the	None. Species restricted to Crystal Springs area and near San Francisco Bay. Host plants were absent from site.
<i>Plebejus icarioides missionensis</i> Mission blue butterfly	FE	--	Coastal prairie. Inhabits grasslands of the S Francisco peninsula. Three larval host plant <i>Lupinus albifrons</i> , <i>L. variicolor</i> , and <i>L. form</i> of which <i>L. albifrons</i> is favored.	None. Potentially suitable habitat was absent. Nearest population is within San Bruno Mountain area.
<i>Speyeria callipe callipe</i> callipe silverspot butterfly	FE	--	Coastal scrub. Restricted to the northern coastal scrub of the San Francisco peninsula. Host <i>Viola pedunculata</i> . Most adults found on E slopes; males congregate on hilltops in sea females.	None. Potentially suitable habitat was not present. Only known population is on San Bruno Mountain.

TABLE 3 Specialt Status Wildlife Species – Potential to Occur				
Species	Status		Habitat Association	Potential for Occurrence
	Federal	State		
<i>Speyeria zerene myrtleae</i> Myrtle's silverspot butterfly	FE	--	Coastal dunes. Restricted to the foggy, coastal dunes/hills of the Point Reyes peninsula. Larval food plant thought to be <i>Viola adunca</i> .	None. Potentially suitable habitat was absent. Populations south of Golden Gate Bridge thought to be extirpated.
Fish				
<i>Eucyclogobius newberryi</i> tidewater goby	FE	SSC	Brackish water habitats along the Calif coast from Agua Hedionda Lagoon, San Diego Co. to the mouth of the Smith	None. Potentially suitable habitat is not preset.
<i>Mylopharadon conocephalus</i> hardhead	--	SSC	Low to mid-elevation streams in the Sacramento-San Joaquin drainage. Also present in the Russian River.	None. Potentially suitable habitat is not present.
<i>Oncorhynchus mykiss irideus</i> Steelhead -Central Coast DPS	FT	--	From Russian River, south to Soquel Cr & to, but not including, Pajaro River. Also San Francisco & San Pablo Bay basins.	None. Potentially suitable habitat is not present. Dean Creek mouth has no evident direct connection to Pacific Ocean or any other creeks or
<i>Spirinchus thaleichthys</i> Longfin smelt	FC	CT	Euryhaline, nektonic & anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column.	None. Potentially suitable habitat was absent.
Amphibians				

TABLE 3 Special Status Wildlife Species – Potential to Occur				
Species	Status		Habitat Association	Potential for Occurrence
	Federal	State		
<i>Ambystoma californiense</i> California tiger salamander	FT	CT, SSC	Cismontane woodland, Meadow & seep, Riparian woodland, Valley & foothill grassland, Vernal pool, Wetland. Central Valley DPS federally listed as threatened. Santa Barbara & Sonoma counties DPS federally listed as endangered. Need underground refuges, especially ground squirrel burrows, & vernal pools or other seasonal water sources for breeding.	None. Potentially suitable habitat was absent. There are no coastal occurrences and the nearest recorded occurrences are near Stanford University.
<i>Rana draytonii</i> California red-legged frog	FT	SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to aestivation habitat.	Possible. Nearest recorded occurrence within 1 mile of project west of Half Moon Bay Airport. Site may provide dispersal habitat. Breeding habitat was absent on project site. Aestivation habitat was low quality with low density of pocket gopher burrows.
Reptiles				
<i>Actinemys marmorata</i> Western pond turtle	--	SSC	Ponds, marshes rivers, streams, and irrigation ditches that have emergent or riparian vegetation and sunny basking sites. Upland nesting habitat consists of friable soil exposed to full sun.	None. Potentially suitable habitat was absent.
<i>Thamnophis sirtalis tetrataenia</i> San Francisco garter snake	FE	CE, FP	Vicinity of freshwater marshes, ponds and slow-moving streams in San Mateo County & extreme northern Santa Cruz County. Prefers dense cover & water depths of at least one foot. Upland areas near water are also very important.	Possible. Site may provide dispersal habitat. Nearest recorded occurrence within 1.5 miles. Aestivation habitat was low quality with low density of pocket gopher burrows.
Birds				

TABLE 3 Special Status Wildlife Species – Potential to Occur				
Species	Status		Habitat Association	Potential for Occurrence
	Federal	State		
<i>Athene cunicularia</i> burrowing owl	BCC	SSC	Open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	None. Potentially suitable habitat was absent.
<i>Charadrius alexandrius nivosus</i> western snowy plover	FT	SSC	Sandy beaches, salt pond levees & shores of large alkali lakes.	None. Potentially suitable nesting habitat was absent. May
<i>Falco columbarius</i> merlin	--	WL	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands & deserts, farms & ranches. Clumps of trees or windbreaks are required for roosting in open country.	Not expected. Nesting habitat was not present. May pass through site during hunting.
<i>Falco peregrinus anatum</i> peregrine falcon	BCC	CS, FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	Not expected. Nesting habitat was not present. May pass through site during hunting.
<i>Geothlypis trichas sinuosa</i> Saltmarsh common yellowthroat	--	SSC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	Possible. Potentially suitable marsh habitat was not present; however, the Dean Creek habitat may provide suitable nesting habitat. Nearest occurrence within 1.5 miles at the Pillar Point Marsh.
<i>Laterallus jamaicensis coturniculus</i> California black rail	BCC	CT, FP	Inhabits freshwater marshes, wet meadows & shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year & dense vegetation for nesting habitat.	None. Potentially suitable habitat was absent.

TABLE 3 Special Status Wildlife Species – Potential to Occur				
Species	Status		Habitat Association	Potential for Occurrence
	Federal	State		
<i>Melospiza melodia pusillula</i> Alameda song sparrow	BCC	SSC	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits Salicornia marshes; nests low in Grindelia bushes (high enough to escape high tides) and in Salicornia.	None. Potentially suitable habitat was absent.
<i>Phalacrocorax auratus</i> double-crested cormorant	--	WL	Colonial nester on coastal cliffs, offshore islands, & along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	None. Potentially suitable nesting habitat was absent.
<i>Rallus longirostris obsoletus</i> California clapper rail	FE	CE, FP	Salt-water & brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-	None. Potentially suitable habitat was absent.
<i>Riparia riparia</i> bank swallow	--	CT	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	None. Potentially suitable habitat was absent.
Mammals				
<i>Antrozous pallidus</i> Pallid bat	--	SSC	Deserts, grasslands, shrublands, woodlands & forests. Most common in open, dry habitats with rocky areas for roosting.	None. Potentially suitable habitat was absent.
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	--	WL	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls & ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Not expected. Nearest recorded occurrence approximately 14 miles northeast.

TABLE 3 Special Status Wildlife Species – Potential to Occur				
Species	Status		Habitat Association	Potential for Occurrence
	Federal	State		
<i>Lasiurus cinereus</i> hoary bat	--	--	Prefers open habitats or habitat mosaics, with access to trees for cover & open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	Possible. Potentially suitable foraging habitat present. May roost on cypress trees.
<i>Myotis thysanodes</i> fringed myotis	--	--	In a wide variety of habitats, optimal habitats are pinyon-juniper, valley foothill hardwood & hardwood-conifer. Uses caves, mines, buildings or crevices for maternity colonies and roosts.	Not expected. Potentially suitable habitat absent. Nearest recorded occurrence approximately 6 miles east of project.
<i>Neotoma fuscipes annectens</i> San Francisco dusky footed rat	--	SSC	Forest habitats of moderate canopy & moderate to dense understory. May prefer chaparral & redwood habitats. Constructs nests of shredded grass, leaves & other material. May be limited by availability of nest-building materials.	Possible. Potentially suitable nest habitat was present among the poison oak/California blackberry habitat and Dean Creek habitat.
<i>Nyctinomops macrotis</i> big free-tailed bat	--	SSC	Low-lying arid areas in Southern California. Rare in California. Prefers rugged, rocky canyons.	None. Potentially suitable habitat was low quality. Only recorded unconfirmed occurrence was approximately 5 miles north in 1985.
<i>Reithrodontomys raviventris</i> salt-marsh harvest mouse	FE	CE, FP	Only in the saline emergent wetlands of San Francisco Bay and its tributaries.	None. Restricted to saline emergent wetlands. Potentially suitable habitat was absent.
<i>Taxidea taxus</i> American badger	--	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	None. Potentially suitable habitat was absent.

Status Legend**Federal:**

FE - Listed as endangered under the Federal Endangered Species Act

FT - Listed as threatened under the Federal Endangered Species Act

FC - Listed as candidate species under the Federal Endangered Species Act

BCC - USFWS Bird of Conservation Concern

State:

CE - Listed as an endangered under the California Endangered Species Act

CT - Listed as a threatened under the California Endangered Species Act

CS - Listed as a candidate species under the California Endangered Species Act

SSC - Species of special concern under the California Endangered Species Act

FP – California fully protected species under the California Endangered Species Act

CNPS Rank:

1A Rare in California and elsewhere; presumed extirpated or extinct

1B Rare in California and elsewhere; rare, threatened, or endangered

2A Rare in California, but not elsewhere; presumed extirpated or extinct

2B Rare in California, but not elsewhere; rare, threatened, or endangered

Attachment G

APPENDIX B

PHOTOGRAPHS OF THE STUDY AREA

199 Arbor Lane
Biological Resources Survey

Photo 1 View of project area from northwest to northeast.



Photo 2 View of project area from northeast to northwest.



Photo 3 View of project area from west to north.



Photo 4 View of project area from north to west.



Photo 5 View from south to west.



Photo 6 Poison oak/California blackberry patch.



Photo 7 View of Dean Creek herbaceous cover from midslope of arroyo. Potentilla species visible running from the mid-right to upper left. Garden nasturtium, stinging nettle and wild radish visible.



Photo 8 View of Monterey cypress understory from top of the arroyo.



Photo 9 View of pipe on streambed. Typha sp. visible; garden nasturtium, cape ivy and wild radish are the dominant plants in photo.



Photo 10 View of Dean Creek upstream.

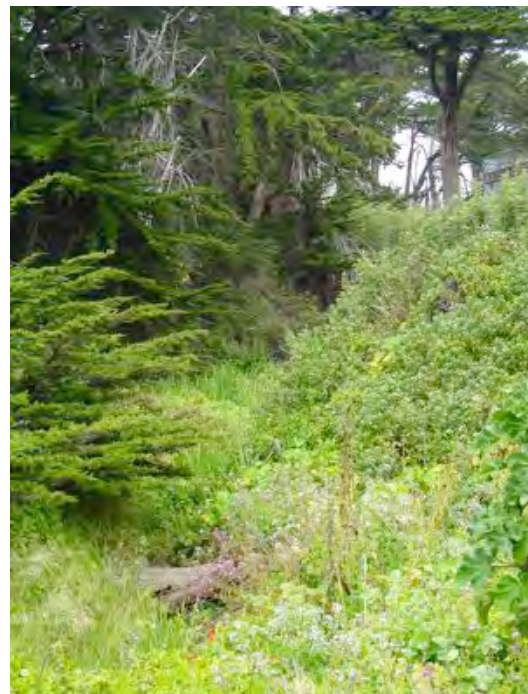


Photo 11 Beach strawberry on the proposed work area.



APPENDIX C

VASCULAR PLANT SPECIES OF 199 ARBOR LANE STUDY AREA

Plant Species List for 199 Arbor Lane, Moss Beach, California

The plant species listed below were observed on the project site during surveys conducted on April 24, 2015. Scientific nomenclature follows *The Jepson Manual* (Baldwin 2012).

* Indicates introduced non-native species.

Common Name	Scientific Name
AIZOACEAE - Fig-Marigold Family	
hottentot fig, iceplant	<i>Carpobrotus edulis</i> *
showy dewflower	<i>Drosanthemum floribundum</i> *
ANACARDIACEAE - Sumac or Cashew Family	
poison oak ⁴	<i>Toxicodendron diversilobum</i>
APIACEAE – Carrot Family	
water parsley ¹	<i>Oenanthe sarmentosa</i>
APOCYNACEAE - Dogbane Family	
periwinkle sp.	<i>Vinca sp.</i>
ASTERACEAE - Sunflower Family	
common soliva ⁴	<i>Soliva sessilis</i> *
common sow thistle ⁵	<i>Sonchus oleraceus</i> *
cotton-batting plant ³	<i>Pseudognaphalium stramineum</i>
gazania	<i>Gazania linearis</i> *
German/cape ivy	<i>Delairea odorata</i> *
pacific/coastal gumplant	<i>Grindelia stricta</i> var. <i>platyphylla</i>
prickly sow thistle	<i>Sonchus asper</i> ssp. <i>asper</i> *
rough cat's-ear ⁴	<i>Hypochaeris radicata</i> *
purple cudweed	<i>Gamochaeta ustulata</i>
Common yarrow ⁴	<i>Achillea millefolium</i>
BRASSICACEAE - Mustard Family	
Watercress ¹	<i>Nasturtium officinale</i>
wild radish	<i>Raphanus sativus</i> *
CARYOPHYLLACEAE - Pink Family	
common catchfly, windmill pink	<i>Silene gallica</i> *
mouse-eared chickweed ⁵	<i>Cerastium glomeratum</i> *
CUCURBITACEAE - Gourd Family	
California man-root	<i>Marah fabaceus</i>
CUPRESSACEAE - Cypress Family	
Monterey cypress	<i>Hesperocyparis macrocarpa</i> *
FABACEAE - Legume Family	
bird's foot trefoil ³	<i>Lotus corniculatus</i> *
Burclover ⁴	<i>Medicago polymorpha</i> *
common vetch ⁴	<i>Vicia sativa</i> *
little hop clover ⁵	<i>Trifolium dubium</i> *
sour clover ⁴	<i>Melilotus indicus</i> *
GERANIACEAE - Geranium Family	
cut-leaved geranium	<i>Geranium dissectum</i> *
red-stemmed filaree	<i>Erodium cicutarium</i> *
white-stemmed storksbill	<i>Erodium moschatum</i> *
LINACEAE - Flax Family	
narrowleaf flax	<i>Linum bienne</i> *
MALVACEAE - Mallow Family	
Cretian mallow	<i>Malva pseudolavatera</i> *

Common Name	Scientific Name
MYRSINACEAE - Myrsine Family	
scarlet pimpernel	<i>Anagallis arvensis</i> *
OXALIDACEAE - Oxalis Family	
Bermuda buttercup	<i>Oxalis pes-caprae</i> *
yellow/ creeping wood sorrel ⁴	<i>Oxalis corniculata</i> *
PAPAVERACEAE - Poppy Family	
California poppy	<i>Eschscholzia californica</i>
PINACEAE - Pine Family	
Italian stone pine	<i>Pinus pinea</i> *
PLANTAGINACEAE - Plantain Family	
cut-leaved plantain ²	<i>Plantago coronopus</i> *
English plantain ³	<i>Plantago lanceolata</i> *
POACEAE - Grass Family	
annual false brome	<i>Brachypodium distachyon</i> *
barnyard foxtail, foxtail barley	<i>Hordeum murinum ssp. leporinum</i> *
California brome	<i>Bromus carinatus var. carinatus</i>
California hairgrass	<i>Deschampsia cespitosa ssp. holciformis</i>
California oatgrass ⁴	<i>Danthonia californica var. californica</i>
pampas grass ⁴	<i>Cortaderia jubata</i> *
ripgut brome	<i>Bromus diandrus</i> *
rye grass	<i>Festuca perennis</i> *
six-week fescue	<i>Festuca bromoides</i> *
slender wild oat	<i>Avena barbata</i> *
soft chess ⁴	<i>Bromus hordeaceus</i> *
upright veldtgrass	<i>Ehrharta erecta</i> *
POLYGONACEAE - Buckwheat Family	
curly dock ³	<i>Rumex crispus</i>
fiddle dock ³	<i>Rumex pulcher</i> *
sheep sorrel ⁴	<i>Rumex acetosella</i> *
ROSACEAE - Rose Family	
beach strawberry ⁴	<i>Fragaria chiloensis</i>
California blackberry ³	<i>Rubus ursinus</i>
cotoneaster	<i>Cotoneaster sp.</i> *
silverweed cinquefoil ¹	<i>Potentilla anserina</i>
RUBIACEAE - Madder Family	
goose grass, bedstraw ⁴	<i>Galium aparine</i>
SALICACEAE – Willow Family	
arroyo willow ²	<i>Salix lasiolepis</i>
SCROPHULARIACEAE - Figwort Family	
California figwort, bee plant ³	<i>Scrophularia californica</i>
TROPAEOLACEAE – Nasturtium Family	
garden nasturtium ⁴	<i>Tropaeolum majus L.</i> *
TYPHACEAE – Cattail Family	
cattail sp. ¹	<i>Typha sp.</i>
URTICACEAE - Nettle Family	
hoary stinging nettle ²	<i>Urtica dioica ssp. holosericea</i>

Arid West Indicator categories

Indicator Code	Indicator Status	Designation	Comment
OBL	Obligate Wetland	Hydrophyte	Almost always occur in wetlands
FACW	Facultative Wetland	Hydrophyte	Usually occur in wetlands, but may occur in non-wetlands
FAC	Facultative	Hydrophyte	Occur in wetlands and non-wetlands
FACU	Facultative Upland	Nonhydrophyte	Usually occur in non-wetlands, but may occur in wetlands
UPL	Obligate Upland	Nonhydrophyte	Almost never occur in wetlands



Attachment H

COAST RIDGE ECOLOGY^{LLC}

BIOLOGICAL SURVEYS • MONITORING • PERMITTING • RESEARCH

October 2, 2017

Carlos Zubieta
1725-A Abbot Kinney Boulevard
Venice, CA 90291

Subject: Update to Biological Resources Assessment Report and Response to Biological Information Requests for 199 Arbor Lane, Moss Beach, CA. (APN 037-123-043).

Dear Mr. Zubieta:

This letter-report provides an update to the Biological Resources Assessment for 199 Arbor Lane, Moss Beach, California (APN 037-123-043), prepared by Kopitov Environmental, LLC in May 2015. Included in this report is an updated CNDDDB map and review of potential presence of special status species on the property, and a map of the adjacent riparian corridor associated with Dean Creek.

This report addresses all biological related comments from the San Mateo County Coastsides Design Review Committee (CDRC letter dated July 24, 2017; PLN 2016-00444), and from the California Coastal Commission (CCC letter dated July 14, 2017; PLN 2016-00444) to the applicant in regards to biological resources on or adjacent to the property. Information reviewed included the following resources:

- County of San Mateo Local Coastal Program Policies (June 18, 2013)
- California Natural Diversity Database (CNDDDB)
- California Native Plant Society (CNPS) Rare Plant Inventory
- Biological Resource Assessment for 199 Arbor Lane, Moss Beach, CA, APN 037-123-043 prepared by Kopitov Environmental LLC, May 2015.

The project area is located on 199 Arbor Lane (a cul-de-sac) approximately 0.17 miles west of Highway 1 (The Cabrillo Highway), in Moss Beach, an unincorporated area of San Mateo County, California. The property is located on a coastal bluff approximately 40 feet from a bluff edge that drops steeply to the beach and the Pacific Ocean. The proposed building envelope is approximately 80 feet from the bluff edge and the Pacific Ocean (Figure 1). The proposed project is the construction of a single-family residence covering an estimated area of 3,198 square feet, plus a two-car garage of approximately 400 square feet.

Map of Riparian Buffer Zone for Dean Creek and Consistency with Section 7 of the San Mateo County LCP

Figure 1 shows a map of Dean Creek and the riparian corridor associated with Dean Creek, in proximity to the property at 199 Arbor Lane. Dean Creek is an intermittent creek that flows near the south side of the property. A Trimble GeoExplorer submeter accuracy GPS unit was used to map the creek, and the adjacent floodplain/riparian corridor on September 22, 2017. A 30-foot buffer from this corridor was measured and delineated from the outside edge of the riparian zone and is shown on Figure 1. Dean Creek is considered an intermittent creek, and the LCP states that for intermittent creeks, a 30-foot buffer is required from the outside edge of the riparian vegetation.

Section 7 of the San Mateo County Local Coastal Program Policies (2013) states the following:

ESTABLISHMENT OF BUFFER ZONES

7.11 a. On both sides of riparian corridors, from the “limit of riparian vegetation” extend buffer zones 50 feet outward for perennial streams and 30 feet outward for intermittent streams.

Under the definition of riparian corridors, the following is stated:

RIPARIAN CORRIDORS

7.7 Definition of Riparian Corridors

Define riparian corridors by the “limit of riparian vegetation” (i.e., a line determined by the association of plant and animal species normally found near streams, lakes and other bodies of freshwater: red alder, jaumea, pickleweed, big leaf maple, narrow-leaf cattail, arroyo willow, broadleaf cattail, horsetail, creek dogwood, black cottonwood, and box elder). Such a corridor must contain at least a 50% cover of some combination of the plants listed.

None of the plants listed in the LCP Section 7.7 definition of riparian are present within the riparian corridor section of Dean Creek downslope of the property at 199 Arbor Lane. Plant species within the creek and associated flood zone include a combination of native and non-native plant species such as Bur Reed (*Sparganium sp.*), California blackberry (*Rubus ursinus*), stinging nettle (*Urtica dioica*), wild radish (*Raphanus sp.*), nasturtium (*Tropaeolum majus*), and cape ivy (*Delairea oderata*). To delineate the outside edge of the riparian zone, the outside edge of the riparian wetland floodplain feature of Dean Creek was used. The boundary between the floodplain and upland area is evidenced by a visible soil, slope and vegetative change, and therefore this boundary was used as the practical boundary to measure the 30-foot buffer from the riparian zone (Figure 1, and Photos 1 and 2).

Dean Creek is shown as an unnamed intermittent stream on the USGS Montara Mountain OE W 7.5 minute quadrangle (2015). In most years, Dean Creek has intermittent flow whereas in higher rainfall years, such as 2016/2017, Dean Creek may have year-round flow. Residential land-uses in the area contribute additional flow to the creek, especially during the dry season due to yard irrigation and runoff/seepage to the Creek. During the riparian mapping on September 22, 2017, Dean Creek had some water present, in the low flow channel, and the wetted channel was approximately 1.5 feet wide and 2 inches deep.

The steep canyon upland slope that is in between the property and the riparian zone is dominated by large Monterey Cypress trees. There is very little understory vegetation, with the exception of invasive plants such as cape ivy (Photos 3 and 4). The riparian buffer zone extends upslope from the floodplain area and encompasses a large section of the steep slope dominated by Monterey Cypress trees. The development footprint for the project is located on the top of the coastal bluff, and is well outside of the riparian buffer zone. The distance from the floodplain/riparian boundary to the property line varies from approximately 50 to 70 feet. No impacts are expected to occur to the riparian buffer zone due to the placement of the project site on the top of the bluff. The project as designed is consistent with LCP policies 7.4, 7.9, and 7.10 (Permitted Uses in Riparian Corridors/ Sensitive Areas) as no components of the project are within or adjacent to, the riparian buffer zone (Figure 1).

Attachment H

Impacts to California Wild Strawberry (*Fragaria californica*)

Section 7.49 of the San Mateo County LCP states:

7.49 CALIFORNIA WILD STRAWBERRY (*FRAGARIA CALIFORNICA*)

Require any development, within one-half mile of the coast, to mitigate against the destruction of any California wild strawberry in one of the following ways:

- a. Prevent any development, trampling, or other destructive activity which would destroy the plant; or*
- b. After determining specifically if the plants involved are of particular value, successfully transplant them or have them successfully transplanted to some other suitable site. Determination of the importance of the plants can only be made by a professional doing work in strawberry breeding.*

Botanist Neal Kramer of Kramer Botanical, LLC identified the strawberry plants on the property as California beach strawberry (*Fragaria chiloensis*), and not California wild strawberry (*F. californica*). Mr. Kramer is a leading expert on coastside flora and made this determination based on the following:

*The leaflets of the beach strawberry (*Fragaria chiloensis*) are leathery, generally shiny and hairless on the upper surface, the marginal serrations are rounded obtuse and the central tooth on the tip of the leaflet is generally much smaller than adjacent teeth. Flower petals on the beach strawberry are generally 10-18mm, are larger than the those of the wood strawberry (*Fragaria vesca*), generally only 5-8mm. Leaflets on the wood strawberry are thinner, upper surface is sparsely hairy - not shiny and veins are distinctly depressed, marginal serrations are obtuse to acute and the central tooth may be larger to only slightly smaller than adjacent teeth.*

Wood strawberry (*Fragaria vesca*) is the currently accepted Jepson Manual 2012 name for the California wild strawberry (*F. californica*) referred to in the San Mateo County LCP. Based on this information, no mitigation requirements should apply to the property due to the lack of California wild strawberry on site.

Updated CNDDDB Report and Review of Special Status Species

A CNDDDB report and maps of special status plants and animals was included in the Biological Resource Assessment prepared by Kopitov Environmental in May 2015 for the property. An updated CNDDDB map for 2017 showing special status plants and animals within a 3-mile radius of the site is shown in [Figure 2](#).

The project site was surveyed for rare plants by local coastside botanical expert, Neal Kramer of Kramer Botanical, LLC on April 24, 2015 as part of the biological resource assessment prepared by Kopitov Environmental. No rare plants were documented on the site during Mr. Kramer's survey. Additional information based on more recent special status plant observation data in the CNDDDB (2017) is provided below.

Additional information based on more recent special status animal and plant records in the CNDDDB (as of September 2017) is provided below.

California red-legged frog

The California red-legged frog (CRF) was evaluated for its potential on site and was determined to have a potential for occurrence within Dean Creek, though Dean Creek does not provide suitable breeding habitat (Kopitov Environmental, 2015). One additional observation of CRF was found in our recent (September 2017) CNDDDB search, and this location is approximately 0.8 miles north of the project area.

Attachment H

There are no recommended changes to the mitigation measures listed for CRF in the BRA prepared by Kopitov Environmental.

San Francisco garter snake

The San Francisco garter snake (SFGS) was evaluated for its potential on site and was determined to have a potential for occurrence within Dean Creek (Kopitov Environmental, 2015). No additional observations of SFGS were found in our recent (September 2017) CNDDDB search, as the nearest locations of the species was found to be 1.5 miles south of the project area. There are no recommended changes to the mitigation measures listed for SFGS in the BRA prepared by Kopitov Environmental.

Fogbelt Bumblebee (*Bombus caliginos*)

This species was not discussed in the 2015 BRA report for the project. The fogbelt bumblebee does not have federal or state listing protection, but is ranked as an S1/S2 (State Critically Imperiled/ State Imperiled) by the state of California. Based on the CNDDDB, this bumblebee has not been seen in the region since the late 1920's, when it was recorded in the Moss Beach, Pacifica and Hillsborough areas. This species is unlikely to be present on site as it has likely been extirpated from the region for decades.

Blasdale's bent grass

Blasdale's bent grass (*Agrostis blasdalei*) was observed approximately 0.2 miles north of the site in May 2015 (CNDDDB 2017). This species is not expected to be present on the property, as this species was not detected when surveyed by a knowledgeable botanical expert in April 2015.

Perennial goldfields

Perennial goldfields (*Lasthenia californica* ssp. *macrantha*) was observed approximately 1.0 mile north of the site at Montara State Beach in May 2015. This species is not expected to be present on the property, as this species was not detected when surveyed by a knowledgeable botanical expert in April 2015.

No additional special status plant or animal species were determined to have any potential for presence in the project area, other than those identified in the 2015 BRA report.

Impact of Story Pole Installation

Story poles were installed on the site on July 3rd 2017. The contractors that installed the story poles mowed the vegetation within the building footprint area to install the story poles. Vegetation that was mowed looked to be primarily California blackberry. No evidence of San Francisco dusky-footed woodrat (SFDFW) middens was found within the mowed area during a site inspection on September 14, 2017 (Photos 5 and 6). In addition, no SFDFW middens were observed on the remainder of the parcel or within the riparian corridor of Dean Creek downslope of the property.

Tree Removals Proposed for Removal on Site, and Potential Impacts to Dean Creek:

Two Monterey Cypress trees are to be removed, (27" and 36" Diameter Breast Height (DBH)). These will be replaced with two Monterey Cypress trees on the east end of the property. These trees are located on the flat bluff top, within the building envelope (Photo 5). Removal of these trees would not cause any impact to Dean Creek, as there would be no disturbance to the steep slope that slopes down to Dean Creek.

Recommendations on Plantings for Landscape Plan

The site is a coastal bluff, and a combination of native grasses and shrubs as proposed in the landscape plan is appropriate for the site based on the native plant community in this habitat type. There are no

invasive species on the proposed plan, (Delta # 3 Plan), which has incorporated changes in response to comments in the CDRC letter dated July 24, 2017.

If you have any questions or require further information, please contact me.

Sincerely,



Patrick Kobernus
Senior Biologist/ Managing Member
Coast Ridge Ecology, LLC

References

Kopitov Environmental, LLC 2015. Biological Resource Assessment for 199 Arbor Lane, Moss Beach, CA. Prepared May, 2015.

San Mateo County Local Coastal Program Policies (2013). <http://planning.smcgov.org/documents/local-coastal-program>

USGS Montara Mountain OE W 7.5 minute quadrangle (2015).

Attachment H



Photo 1. View of lighter green vegetation below taller darker green Monterey Cypress trees. Riparian boundary runs along approximately the lower 1/3 of the photo. Photo date: 09/14/2017.



Photo 2. Far right side of photo shows boundary between riparian floodplain and upland at Dean Creek. Photo date: 09/22/2017.

Attachment H



Photo 3. Understory vegetation is lacking on the steep slope underneath the Monterey Cypress trees. Photo date: 09/14/2017.



Photo 4. Understory of Monterey cypress trees. Photo date: 09/22/17.

Attachment H

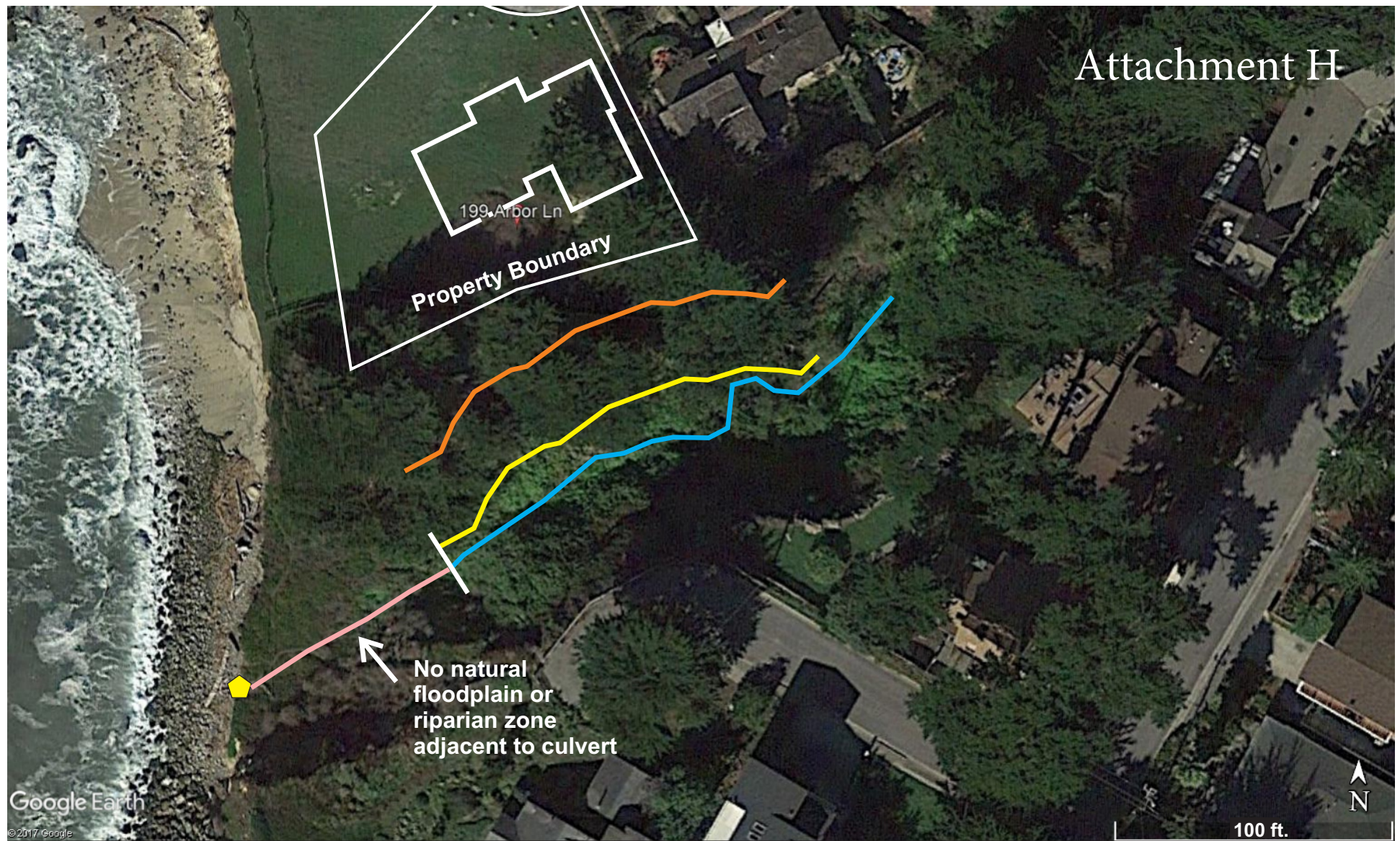


Photo 5. View of property where brush was mowed and story poles were erected. Monterey Cypress Tree on right side of photo would be removed as part of project. Photo date: 09/14/2017.



Photo 6. View of property where brush was mowed and story poles were erected. Monterey Cypress Tree on right side of photo would be removed as part of project. Photo date: 09/14/2017.

Figure 1. Approximate 30-foot buffer from riparian zone associated with Dean Creek for 199 Arbor Lane, Moss Beach, CA.



- Dean Creek - low flow channel
- Dean Creek - high flow channel /riparian edge (boundary on north side of creek shown)
- 30 foot buffer from Dean Creek riparian edge
- Dean Creek underground culvert pipe
- Dean Creek culvert outlet



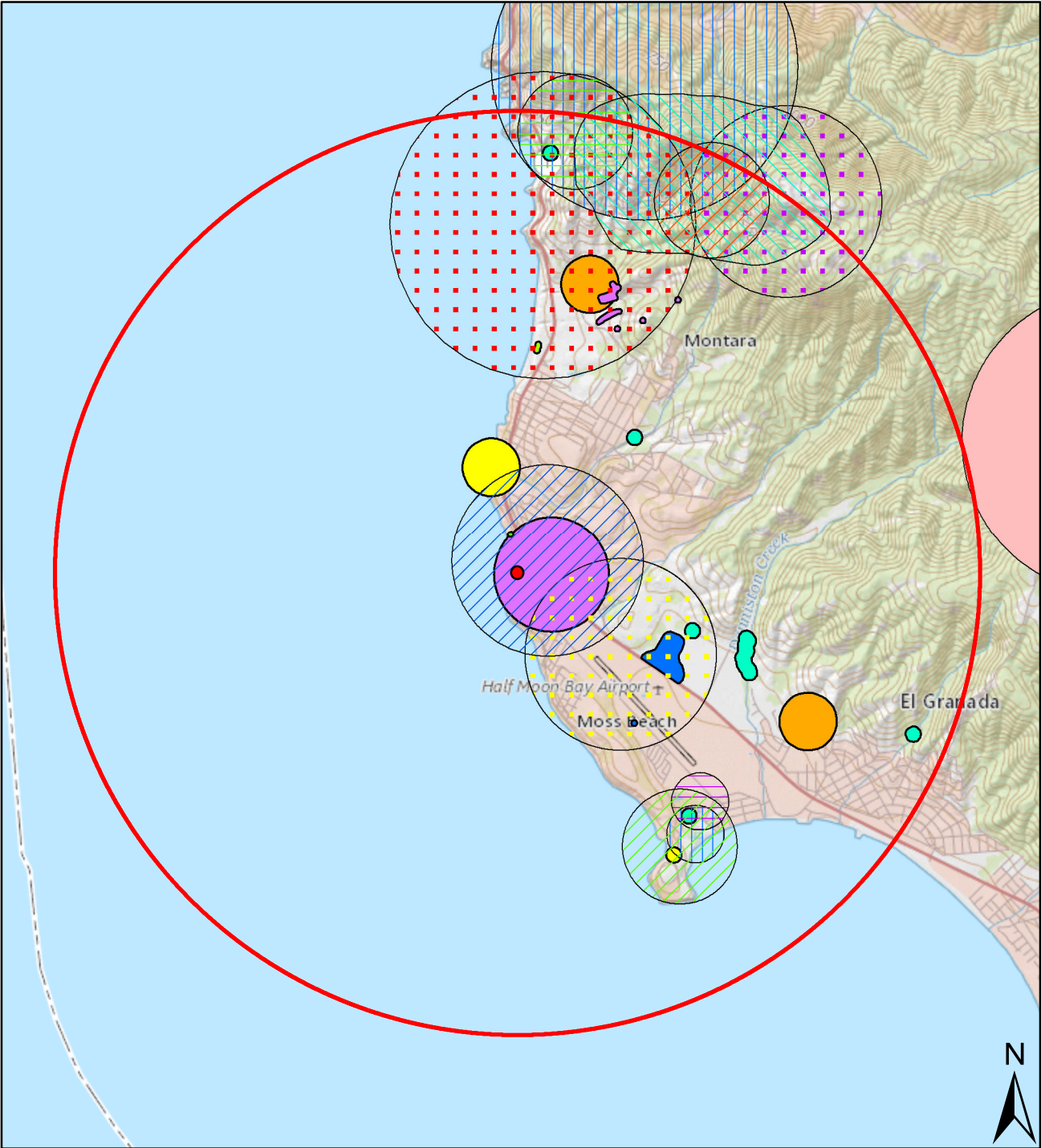


Figure 2: CNDDDB Occurrences Map

0 0.4 0.8 1.6 2.4 3.2 Miles

Legend	
● Project Location	<i>Horkelia cuneata</i> var. <i>sericea</i>
3 Mile Buffer	<i>Lasthenia californica</i> ssp. <i>macrantha</i>
<i>Agrostis blasdalei</i>	<i>Leptosiphon croceus</i>
<i>Arctostaphylos regismontana</i>	<i>Leptosiphon rosaceus</i>
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	<i>Limnanthes douglasii</i> ssp. <i>omduffii</i>
<i>Bombus caliginosus</i>	Northern Coastal Salt Marsh
<i>Callophrys mossii bayensis</i>	<i>Potentilla hickmanii</i>
<i>Cirsium andrewsii</i>	<i>Rana draytonii</i>
<i>Danaus plexippus</i> pop. 1	<i>Silene verecunda</i> ssp. <i>verecunda</i>
<i>Geothlypis trichas sinuosa</i>	<i>Taxidea taxus</i>
<i>Grindelia hirsutula</i> var. <i>maritima</i>	<i>Triphysaria floribunda</i>





COAST RIDGE ECOLOGY_{LLC}

BIOLOGICAL SURVEYS • MONITORING • PERMITTING • RESEARCH

Attachment I

November 3, 2017

Carlos Zubieta
1725-A Abbot Kinney Boulevard
Venice, CA 90291

Subject: *Response to Comments on Update to Biological Resources Assessment Report for 199 Arbor Lane, Moss Beach, CA. (APN 037-123-043).*

Dear Mr. Zubieta:

This letter provides a response to a comments on the *Update to the Biological Resources Assessment for 199 Arbor Lane, Moss Beach, California (APN 037-123-043)*, prepared by Coast Ridge Ecology, October 2, 2017.

In a letter dated October 22, 2017 from the adjacent property owner at 191 Arbor Lane, three (3) comments were made in regards to the Updated Biological Resources Assessment:

Comment #1:

The commenter says there is one 'obvious error' in the Updated BRA. The commenter is referring to a statement that the distance between the edge of the bluff and the Pacifica Ocean was estimated to be 80 feet. The commenter says that the distance is actually between 62 and 67 feet.

Response to Comment #1:

Based on the site plan for 199 Arbor Lane dated October 14, 2016; the estimated distance from the wood deck (which forms the western edge of the building envelope), the distance to the top of the bluff above the Pacific Ocean varies between 88.9 feet and 71.3 feet. This distance was averaged and estimated to be 80 feet.

Comment #2:

The commenter says there is 'one taxonomic classification that is in dispute'.

Response to Comment #2:

The commenter does not provide any additional information to back up the statement that a 'taxonomic classification' in the Update to the BRA is 'in dispute'. No example of a taxonomic classification is given, and it's not clear what the commenter is referring to.

Comment #3a:

The commenter states that the report misrepresents "photograph 5" as stating that it 'shows two trees 27" and 36" DBH', whereas "Photograph 5 actually only depicts the smaller of the two trees".

Response to Comment #3a:

Photograph 5 was referenced in the Update to the BRA to primarily show the story pole installation and mowing that had been done, the flat bluff top, as well as the trees on site. The commenter is correct in that it only shows one of the trees due to the angle the photo was taken. This was not meant to

Attachment I

misrepresent the location of the trees. The trees are shown on the site plan for the project, and they are both located on the flat area of the bluff top.

Comment #3b:

The commenter questions the statement in the Update to the BRA that 'removal of the trees would not cause any impact to Dean Creek, as there would be no disturbance to the steep slope that slopes down to Dean Creek'. The commenter also states that 'the author does not have the qualifications' to make this evaluation. The commenter also states that there was 'careful omission of the reality of bluff top erosion',

Response to Comment #3b:

The two Cypress trees referred to by the commenter are both located on the flat bluff top within the proposed building envelope, and are not located along the edge of the bluff. As a biologist with over 22 years of professional experience, having observed tree removals in many types of terrains, I am sure these trees could be easily removed without causing erosion to the edge of the bluff and Dean Creek, based on their distance from the edge of the bluff; however the project's Civil Engineer and Geologist should evaluate this. There was no 'careful omission of the reality of bluff top erosion' as the commenter states.

It should be noted that in some areas near the property at 199 Arbor Lane, the bluff edge that borders the slope that descends to Dean Creek is steep, but not too steep to walk down. I traversed the slope several times when taking distance measurements between the property boundary and the riparian corridor and Dean Creek itself. The bluff edge is well vegetated with native brush (California blackberry) in places and Monterey cypress trees. The project's Civil Engineer and Geologist should provide an evaluation for the potential for erosion of this slope and any potential for impact from the proposed development.

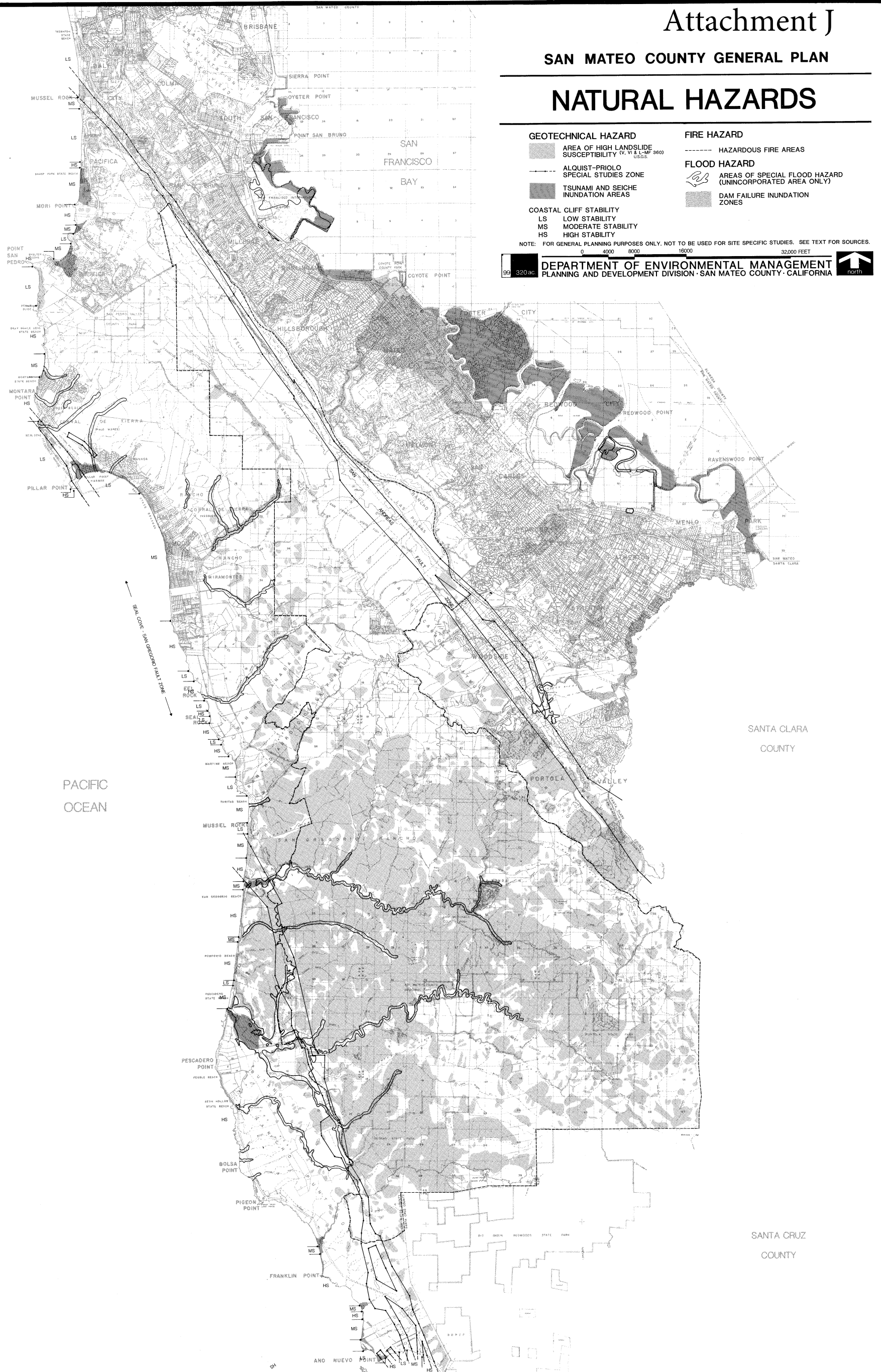
If you have any questions or require further information, please contact me.

Sincerely,

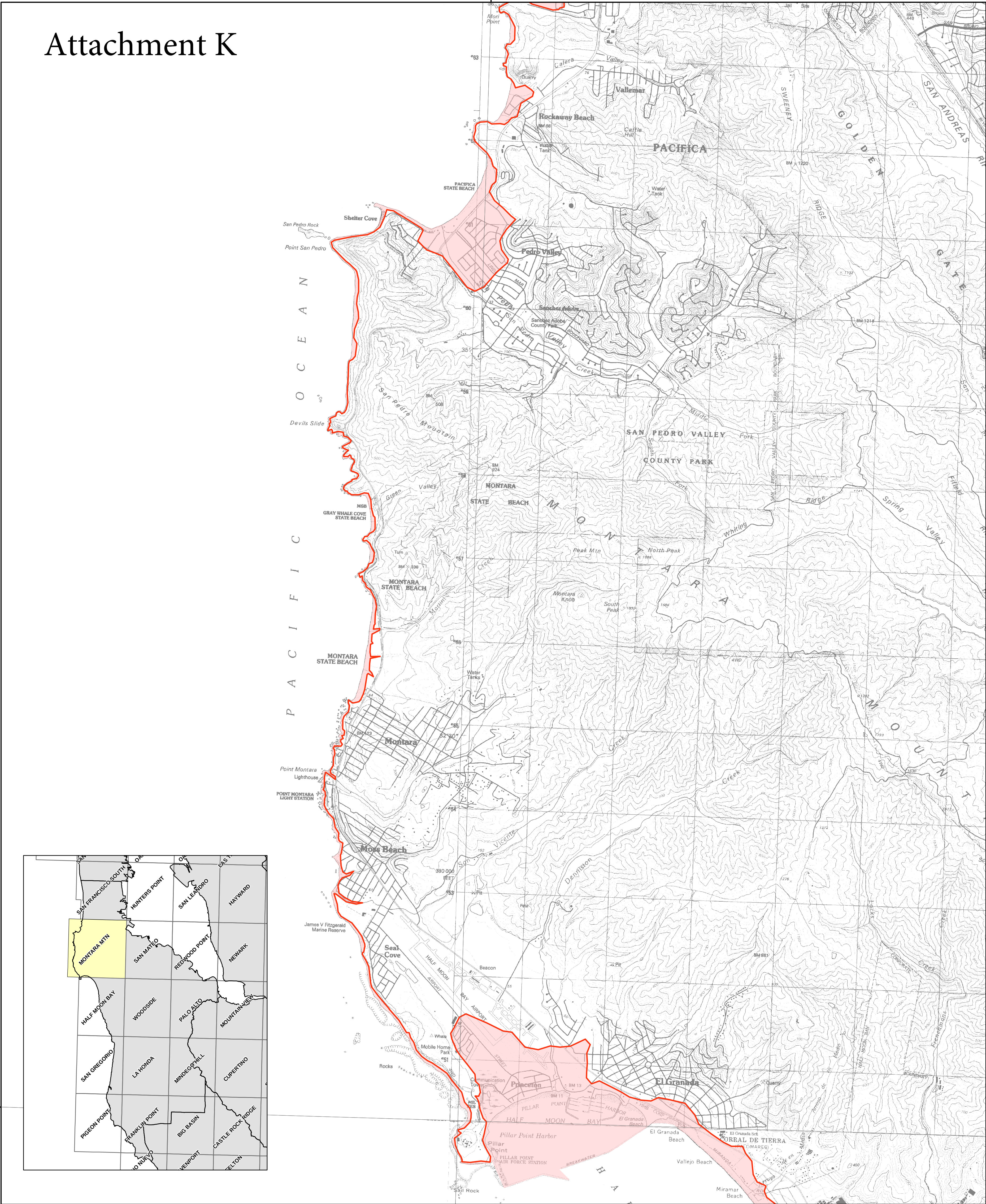


Patrick Kobernus
Senior Biologist/ Managing Member
Coast Ridge Ecology, LLC

NATURAL HAZARDS



Attachment K



METHOD OF PREPARATION

Initial tsunami modeling was performed by the University of Southern California (USC) Tsunami Research Center funded through the California Emergency Management Agency (CalEMA) by the National Tsunami Hazard Mitigation Program. The tsunami modeling process utilized the MOST (Method of Splitting Tsunamis) computational program (Version 0), which allows for wave evolution over a variable bathymetry and topography used for the inundation mapping (Titov and Gonzalez, 1997; Titov and Synolakis, 1998).

The bathymetric/topographic data that were used in the tsunami models consist of a series of nested grids. Near-shore grids with a 3 arc-second (75- to 90-meters) resolution or higher, were adjusted to "Mean High Water" sea-level conditions, representing a conservative sea level for the intended use of the tsunami modeling and mapping.

A suite of tsunami source events was selected for modeling, representing realistic local and distant earthquakes and hypothetical extreme undersea, near-shore landslides (Table 1). Local tsunami sources that were considered include offshore reverse-thrust faults, restraining bends on strike-slip fault zones and large submarine landslides capable of significant seafloor displacement and tsunami generation. Distant tsunami sources that were considered include great subduction zone events that are known to have occurred historically (1960 Chile and 1964 Alaska earthquakes) and others which can occur around the Pacific Ocean "Ring of Fire."

In order to enhance the result from the 75- to 90-meter inundation grid data, a method was developed utilizing higher-resolution digital topographic data (3- to 10-meters resolution) that better defines the location of the maximum inundation line (U.S. Geological Survey, 1993; Intermat, 2003; NOAA, 2004). The location of the enhanced inundation line was determined by using digital imagery and terrain data on a GIS platform with consideration given to historic inundation information (Lander, et al., 1993). This information was verified, where possible, by field work coordinated with local county personnel.

The accuracy of the inundation line shown on these maps is subject to limitations in the accuracy and completeness of available terrain and tsunami source information, and the current understanding of tsunami generation and propagation phenomena as expressed in the models. Thus, although an attempt has been made to identify a credible upper bound to inundation at any location along the coastline, it remains possible that actual inundation could be greater in a major tsunami event.

This map does not represent inundation from a single scenario event. It was created by combining inundation results for an ensemble of source events affecting a given region (Table 1). For this reason, all of the inundation region in a particular area will not likely be inundated during a single tsunami event.

References:

Intermap Technologies, Inc., 2003, Intermat product handbook and quick start guide: Intermat NEXTmap document on 5-meter resolution data, 112 p.

Lander, J.F., Lockridge, P.A., and Kozuch, M.J., 1993, Tsunamis Affecting the West Coast of the United States 1806-1992: National Geophysical Data Center Key to Geophysical Record Documentation No. 29, NOAA, NESDIS, NGDC, 242 p.

National Atmospheric and Oceanic Administration (NOAA), 2004, Interferometric Synthetic Aperture Radar (IFSAR) Digital Elevation Models from GeoSAR platform (EarthData): 3-meter resolution data.

Titov, V.V., and Gonzalez, F.I., 1997, Implementation and Testing of the Method of Tsunami Splitting (MOST): NOAA Technical Memorandum ERL PMEL – 112, 11 p.

Titov, V.V., and Synolakis, C.E., 1998, Numerical modeling of tidal wave runup: Journal of Waterways, Port, Coastal and Ocean Engineering, ASCE, 124 (4), pp 157-171.

U.S. Geological Survey, 1993, Digital Elevation Models: National Mapping Program, Technical Instructions, Data Users Guide 5, 49 p.

TSUNAMI INUNDATION MAP
FOR EMERGENCY PLANNING

State of California ~ County of San Mateo
MONTARA MOUNTAIN QUADRANGLE

June 15, 2009

SCALE 1:24,000

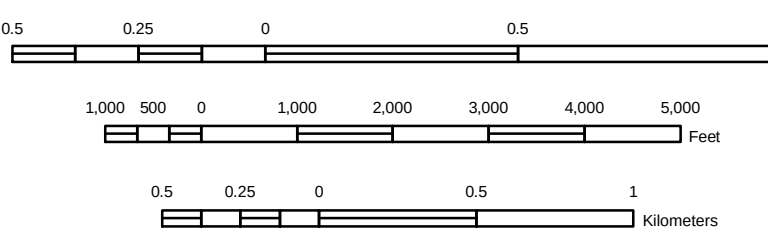


Table 1: Tsunami sources modeled for the San Mateo County coastline.

Sources (M = moment magnitude used in modeled event)		Areas of Inundation Map Coverage and Sources Used	
		San Francisco Bay	Pescadero
Local Sources	Point Reyes Thrust Fault	X	
	Rodgers Creek-Hayward Faults	X	
	San Gregorio Fault	X	
Distant Sources	Cascadia Subduction Zone-full rupture (M9.0)	X	
	Central Aleutians Subduction Zone #1 (M8.9)	X	X
	Central Aleutians Subduction Zone #2 (M8.9)	X	
	Central Aleutians Subduction Zone #3 (M9.2)	X	X
	Chile North Subduction Zone (M9.4)	X	
	1960 Chile Earthquake (M9.3)	X	
	1964 Alaska Earthquake (M9.2)	X	X
	Japan Subduction Zone #2 (M8.8)	X	
	Kuril Islands Subduction Zone #2 (M8.8)	X	
	Kuril Islands Subduction Zone #3 (M8.8)	X	
	Kuril Islands Subduction Zone #4 (M8.8)	X	
	Marianas Subduction Zone (M8.6)	X	X

MAP EXPLANATION

- Tsunami Inundation Line
- Tsunami Inundation Area

PURPOSE OF THIS MAP

This tsunami inundation map was prepared to assist cities and counties in identifying their tsunami hazard. It is intended for local jurisdictional, coastal evacuation planning uses only. This map, and the information presented herein, is not a legal document and does not meet disclosure requirements for real estate transactions nor for any other regulatory purpose.

The inundation map has been compiled with best currently available scientific information. The inundation line represents the maximum considered tsunami runup from a number of extreme, yet realistic, tsunami sources. Tsunamis are rare events; due to a lack of known occurrences in the historical record, this map includes no information about the probability of any tsunami affecting any area within a specific period of time.

Please refer to the following websites for additional information on the construction and/or intended use of the tsunami inundation map:

State of California Emergency Management Agency, Earthquake and Tsunami Program: <http://www.oes.ca.gov/WebPage/oeswebsite.nsf/Content/B1EC51BA215931768825741F005E8D80?OpenDocument>

University of Southern California – Tsunami Research Center: <http://www.usc.edu/dept/tsunamis/2005/index.php>

State of California Geological Survey Tsunami Information: http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/index.htm

National Oceanic and Atmospheric Agency Center for Tsunami Research (MOST model): <http://nctr.pmel.noaa.gov/time/background/models.html>

MAP BASE

Topographic base maps prepared by U.S. Geological Survey as part of the 7.5-minute Quadrangle Map Series (originally 1:24,000 scale). Tsunami inundation line boundaries may reflect updated digital orthophotographic and topographic data that can differ significantly from contours shown on the base map.

DISCLAIMER

The California Emergency Management Agency (CalEMA), the University of Southern California (USC), and the California Geological Survey (CGS) make no representation or warranties regarding the accuracy of this inundation map nor the data from which the map was derived. Neither the State of California nor USC shall be liable under any circumstances for any direct, indirect, special, incidental or consequential damages with respect to any claim by any user or any third party on account of or arising from the use of this map.



[Home](#) | [CGS](#) | [Geologic Hazards](#) | [Tsunami](#) | [About Tsunamis](#)

FAQ About Tsunamis

Introduction

What is a tsunami?

What are the sources for and examples of tsunamis that might affect California?

How can I determine whether tsunamis are possible where I live, and what kind of warning could I get?

Are there any warning signs of an impending tsunami?

What should I do before, during, and after a tsunami in my area?

Historic Tsunamis in California

Introduction

The California Geological Survey (CGS) provides geologic and seismic expertise to the public, other State government offices, such as the [California Governor's Office of Emergency Services](#) (CalOES), and local government agencies (cities and counties). For tsunami hazards, CGS works closely with CalOES and the [Tsunami Research Center at the University of Southern California](#) to produce statewide tsunami inundation maps and preparedness information for California. CGS is also the Scientific Representative for California on the [National Tsunami Hazard Mitigation Program](#) Coordinating Committee, a state and federal cooperative responsible for developing policies and standards for tsunami mitigation efforts in the United States and its territories.

What is a tsunami?

A tsunami is a wave, or series of waves, generated by an earthquake, landslide, volcanic eruption, or even large meteor hitting the ocean (The Japanese word tsu means "harbor"; nami means "wave"). What typically happens is a large, submarine earthquake (magnitude 8 or higher) creates a significant upward movement of the sea floor resulting in a rise or mounding of water at the ocean surface. This mound of

water moves away from this center in all directions as a tsunami. A tsunami can travel across the open ocean at about 500-miles per hour, the speed of a jet airliner. As the wave approaches land and as the ocean shallows, the wave slows down to about 30 miles-per-hour and grows significantly in height (amplitude).

Although most people think a tsunami looks like a tall breaking wave, it actually resembles a flood or surge.

What are the sources for and examples of tsunamis that might affect California?

More than eighty tsunamis have been observed or recorded in California in historic times. Fortunately, almost all of these were small and did little or no damage. Though damaging tsunamis have occurred infrequently in California, they are a possibility that must be considered in coastal communities. There are two sources for California tsunamis, based on distance and warning time:

Local sources - Local tsunami sources, like large offshore faults and massive submarine landslides, can put adjacent coastal communities at the greatest risk of a tsunami because the public must respond quickly with little or no official guidance. The Cascadia Subduction Zone is an example of a local tsunami source that could threaten northern California. Stretching from Cape Mendocino, California, to Vancouver Island, British Columbia, this 700-mile long submarine fault system forms the crustal plate boundary where the offshore Gorda and Juan de Fuca plates dive, or subduct, beneath the North American plate. Examples of local tsunamis that have impacted California include:

January 26, 1700 - An earthquake estimated at a magnitude 9 ruptured the entire length of the Cascadia Subduction Zone, likely causing a 50-foot tsunami in parts of northern California. Though there were no local written accounts, scientists have reconstructed the event based on geologic evidence and oral histories from the Native American people in the area, and determined the exact date and time from Japanese documents that describe the effects of a large tsunami that hit the coast of Japan later that same day.

December 21, 1812 - A tsunami struck the Santa Barbara and Ventura coastline shortly after a large earthquake was felt in the area. Though reports of the size of this tsunami have been debated, the event was large enough to inundate lowland areas and cause damage to nearby ships. One theory is that the tsunami was caused by a nearby submarine landslide triggered by the earthquake.

Distant sources - A tsunami caused by a very large earthquake elsewhere on the Pacific Rim could reach the California coast many (4 to 15) hours after the earthquake. The Alaska-Aleutians Subduction Zone is an example of a distant source that has caused destructive tsunamis in California. Notable distant tsunamis that have impacted California include:

April 1, 1946 - A magnitude 8.8 earthquake in the Aleutian Islands generated a tsunami that caused damage along the coast of California, including flooding over 1000-feet inland in **Half Moon Bay**.

March 28, 1964 – Twelve people were killed in California when a tsunami was generated by a magnitude 9.2 earthquake off the coast of Alaska. A surge approximately 20-feet high flooded 29 city blocks of Crescent City.

March 11, 2011 – A magnitude 9.0 earthquake in the Tohoku region of Japan produced a moderate amplitude tsunami in California. Although it did not generate significant flooding in California, strong tsunami currents caused one death and over \$100-million in damages to 27 harbors statewide, with the most significant damage occurring in Crescent City and Santa Cruz.

The table appended to the bottom of this page contains information on some additional tsunamis in California from 1812 to 2012, compiled from the following website:

<http://www.ngdc.noaa.gov/nndc/servlet/ShowDatasets>.

How can I determine whether tsunamis are possible where I live, and what kind of warning could I get?

Tsunamis generally affect coastal communities and low-lying (low-elevation) river valleys in the vicinity of the coast. Buildings closest to the ocean and near sea level are most at jeopardy. Type in an address or city using the CGS Information Warehouse to access Statewide Inundation Maps to see if areas where you live, work, or visit are in tsunami inundation areas.

In order to determine whether a tsunami has been generated following a large earthquake, scientists from the West Coast and Alaska Tsunami Warning Center monitor an array of buoys and tide gauges that measure vertical changes to the ocean surface ([more info on ocean tides and currents](#)). If a potentially damaging tsunami is headed towards California, a warning will be broadcast through the Emergency Alert System and the National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS) Weather Radio (<http://www.nws.noaa.gov/nwr/>). Check with your local city or county to see what ways they will notify you of a tsunami.

In situations where tsunami travel times are short (due to nearby earthquakes or landslides), it is difficult for government agencies to identify and warn the public. Individuals should know what the natural warning signs of a tsunami are and have a plan to evacuate if necessary.

Are there any warning signs of an impending tsunami?

One noticeable, but not universal, sign is the rapid receding of ocean water from the beach before the first tsunami wave hits. In many accounts (including the current Indian Ocean tsunami), this effect has caused greater loss of life because it became a curiosity that attracted people to the oceanfront.

Very strong ground shaking along the coast is an indication of an earthquake that could cause seafloor displacements and/or a submarine landslide large enough to generate a tsunami. Though many large earthquakes have occurred along the coast without causing a tsunami, you should still be aware of the

potential and plan accordingly. In the event you are at the coast and feel strong shaking, it may be prudent to move to higher ground.

What should I do before, during, and after a tsunami in my area?

Education and preparation are the best ways to avoid injury and increase your chances for survival. Know whether you are in a potential tsunami zone by observing street signs or looking online to see if you are in a zone. Know the evacuation routes for your area. Contact your local city and/or county government to see what the evacuation plan is for your area and where you will be expected to evacuate to. Have a “to go bag” ready, in the event you have to evacuate. Do not return to the evacuated zone until officials tell you it is safe to do so. The first tsunami is not always the largest, and tsunami waves, flooding and strong currents can last for several hours.

For more information about tsunami preparedness to go www.tsunamizone.org.

Historic Tsunamis in California

The chart below shows data from some of the tsunamis recorded in central and southern California from 1812 to 2012 (from

<http://www.ngdc.noaa.gov/nndc/servlet/ShowDatasets>):

Date	Travel (hours)	Time (minutes)	Tsunami Location	Height (meters)	Source Location	Source Event	Source Magnitude (Ms)	Source Magnitude (Mw)
12/21/1812			EL REFUGIO (GAVIOTA), CA	3.4	CA	Purisima	7.7	
12/21/1812			SANTA BARBARA, CA	2	CA	Purisima	7.7	
12/21/1812			VENTURA, CA	2	CA	Purisima	7.7	
9/24/1856			SAN DIEGO, CA	3.6	Japan	Tokaido		
9/24/1859			HALF MOON BAY, CA	4.6	N. CA			
5/27/1862			SAN DIEGO, CA	1.2	S. CA		5.8	
10/21/1868			SAN FRANCISCO BAY, CA	4.5	SF area		6.8	
8/13/1868			SAN PEDRO, CA	1.8	N. Chile		8.5	
8/13/1868			WILMINGTON, CA	1.8	N. Chile		8.5	
4/16/1877			ANAHEIM LANDING, CA	1.8	CA			
4/16/1877			CAYUCOS, CA	3.6	CA			
5/10/1877			GAVIOTA, CA	1.8	N. Chile		8.3	
5/10/1877			SAN PEDRO, CA	1	N. Chile		8.3	
5/10/1877			WILMINGTON, CA	1.7	N. Chile		8.3	

11/22/1878			WILMINGTON, CA	1	S. CA			
12/17/1896			SANTA BARBARA, CA	2.5	S. CA			
6/15/1896			SANTA CRUZ, CA	1.5	Japan	Sanriku	7.6	
11/4/1927			SURF, CA	1.8	CA		7.3	
4/1/1946			ARENA COVE, CA	2.4	Alaska	E. Aleutian Islands	7.3	
4/1/1946	5	36	AVILA BEACH, CA	1.3	Alaska	E. Aleutian Islands	7.3	
4/1/1946			DRAKES BAY, CA	2.6	Alaska	E. Aleutian Islands	7.3	
4/1/1946			HALF MOON BAY, CA	2.6	Alaska	E. Aleutian Islands	7.3	
4/1/1946			MORRO BAY, CA	1.5	Alaska	E. Aleutian Islands	7.3	
4/1/1946	5	36	SAN LUIS OBISPO, CA	1.3	Alaska	E. Aleutian Islands	7.3	
4/1/1946			SANTA CATALINA ISLAND, CA	1.8	Alaska	E. Aleutian Islands	7.3	
4/1/1946			SANTA CRUZ, CA	1.5	Alaska	E. Aleutian Islands	7.3	
11/4/1952	8	36	AVILA BEACH, CA	1.4	Russia	Kamchatka	8.2	9
5/22/1960			MONTEREY, CA	1.1	Chile	Central Chile		9.5
5/22/1960			PACIFICA, CA	1.2	Chile	Central Chile		9.5
5/22/1960			PISMO BEACH, CA	1.4	Chile	Central Chile		9.5
5/22/1960	14	4	PORT HUENEME, CA	1.3	Chile	Central Chile		9.5
5/22/1960	14	12	SANTA MONICA, CA	1.4	Chile	Central Chile		9.5
5/22/1960			STINSON BEACH, CA	1.5	Chile	Central Chile		9.5
5/22/1960	13	43	WILSON COVE, CA	1.2	Chile	Central Chile		9.5
3/28/1964			ARENA COVE, CA	1.8	Alaska	Gulf of Alaska		9.2
3/28/1964	5	10	AVILA BEACH, CA	1.6	Alaska	Gulf of Alaska		9.2
3/28/1964			CAPITOLA, CA	2.1	Alaska	Gulf of Alaska		9.2
3/28/1964			MARTINS BEACH, CA	3	Alaska	Gulf of Alaska		9.2

3/28/1964			MONTEREY, CA	1.4	Alaska	Gulf of Alaska		9.2
3/28/1964			MOSS LANDING, CA	1.4	Alaska	Gulf of Alaska		9.2
3/28/1964			PACIFICA, CA	1.4	Alaska	Gulf of Alaska		9.2
3/28/1964	5	6	SAN FRANCISCO, CA	1.1	Alaska	Gulf of Alaska		9.2
3/28/1964			SAN RAFAEL, CA	1.5	Alaska	Gulf of Alaska		9.2
3/28/1964			SANTA CRUZ, CA	1.5	Alaska	Gulf of Alaska		9.2
3/28/1964	5	39	SANTA MONICA, CA	1	Alaska	Gulf of Alaska		9.2
3/28/1964			SAUSALITO, CA	1.2	Alaska	Gulf of Alaska		9.2
3/28/1964			SEA VIEW, CA	3.8	Alaska	Gulf of Alaska		9.2
3/28/1964			TOMALES BAY, CA	1	Alaska	Gulf of Alaska		9.2
11/29/1975			SANTA CATALINA ISLAND, CA	1.4			7.2	
10/18/1989			MOSS LANDING, CA	1	CA	Loma Prieta	7.1	
11/4/2000			POINT ARGUELLO, CA	unknown	CA	Pt. Arguello		
11/15/2006	8	16	Arena Cove,	0.61	Russia	So.Kuril Islands	7.8	8.3
11/15/2006	8	31	Crescent City	0.88	Russia	So.Kuril Islands	7.8	8.3
11/15/2006	9	41	La Jolla	0.1	Russia	So.Kuril Islands	7.8	8.3
11/15/2006			Los Angeles	0.11	Russia	So.Kuril Islands	7.8	8.3
11/15/2006	9	418	North Spit Humboldt Bay	0.17	Russia	So.Kuril Islands	7.8	8.3
11/15/2006	8	36	Point Reyes,	0.33	Russia	So.Kuril Islands	7.8	8.3
11/15/2006			Port San Luis	0.56	Russia	So.Kuril Islands	7.8	8.3
11/15/2006			Richmond	0.09	Russia	So.Kuril Islands	7.8	8.3
11/15/2006			San Diego	0.09	Russia	So.Kuril Islands	7.8	8.3

11/15/2006	9	6	San Francisco, CA	0.16	Russia	So.Kuril Islands	7.8	8.3
11/15/2006			Santa Barbara	0.4	Russia	So.Kuril Islands	7.8	8.3
11/15/2006	10	8	Santa Monica	0.15	Russia	So.Kuril Islands	7.8	8.3
8/16/2007	12	11	Crescent City	0.16	Peru	Peru	7.9	8
9/30/2009	10	27	Arena Cove	0.44	Samoa	Samoa Islands	8.1	8
9/30/2009	10	56	Crescent City	0.33	Samoa	Samoa Islands	8.1	8
9/30/2009			Los Angeles	0.13	Samoa	Samoa Islands	8.1	8
9/30/2009	11	38	Monterey	0.15	Samoa	Samoa Islands	8.1	8
9/30/2009	11	2	Point Reyes	0.39	Samoa	Samoa Islands	8.1	8
9/30/2009	11	43	Port San Luis	0.28	Samoa	Samoa Islands	8.1	8
9/30/2009	11	0	San Francisco	0.1	Samoa	Samoa Islands	8.1	8
9/30/2009			Santa Barbara	0.25	Samoa	Samoa Islands	8.1	8
9/30/2009			Santa Cruz	0.7	Samoa	Samoa Islands	8.1	8
9/30/2009	10	51	Santa Monica	0.15	Samoa	Samoa Islands	8.1	8
2/27/2010	14	14	Arena Cove	0.36	Chile	Central Chile	8.5	8.8
2/27/2010	15	6	Crescent City	0.64	Chile	Central Chile	8.5	8.8
2/27/2010			Dana Point Harbor	0.7	Chile	Central Chile	8.5	8.8
2/27/2010			Half Moon Bay	0.6	Chile	Central Chile	8.5	8.8
2/27/2010	13	28	La Jolla	0.6	Chile	Central Chile	8.5	8.8
2/27/2010	13	41	Los Angeles	0.42	Chile	Central Chile	8.5	8.8
2/27/2010	13	57	Monterey	0.36	Chile	Central Chile	8.5	8.8
2/27/2010			Morro Bay Harbor	0.5	Chile	Central Chile	8.5	8.8

2/27/2010			Moss Landing	0.3	Chile	Central Chile	8.5	8.8
2/27/2010			Marina Del Rey	0.1	Chile	Central Chile	8.5	8.8
2/27/2010			Mission Bay San Diego	0.6	Chile	Central Chile	8.5	8.8
2/27/2010	15	2	North Spit Humboldt Bay	0.23	Chile	Central Chile	8.5	8.8
2/27/2010			Newport Beach	0.5	Chile	Central Chile	8.5	8.8
2/27/2010			Oxnard	1	Chile	Central Chile	8.5	8.8
2/27/2010			Oceanside Harbor	0.6	Chile	Central Chile	8.5	8.8
2/27/2010			Pismo Beach	1.2	Chile	Central Chile	8.5	8.8
2/27/2010	14	25	Point Reyes	0.46	Chile	Central Chile	8.5	8.8
2/27/2010			Port Hueneme	0.7	Chile	Central Chile	8.5	8.8
2/27/2010			Port San Luis	0.8	Chile	Central Chile	8.5	8.8
2/27/2010	13	30	San Diego	0.4	Chile	Central Chile	8.5	8.8
2/27/2010	14	46	San Francisco	0.32	Chile	Central Chile	8.5	8.8
2/27/2010	13	56	Santa Barbara	0.91	Chile	Central Chile	8.5	8.8
2/27/2010			Santa Cruz	0.9	Chile	Central Chile	8.5	8.8
2/27/2010	13	51	Santa Monica	0.64	Chile	Central Chile	8.5	8.8
2/27/2010			Sunset	0.5	Chile	Central Chile	8.5	8.8
2/27/2010			Ventura	0.9	Chile	Central Chile	8.5	8.8
3/11/2011	10	49	ALAMEDA, CA	0.51	Japan	Honshu	8.3	9
3/11/2011	9	44	ARENA COVE, CA	1.74	Japan	Honshu	8.3	9
3/11/2011			Albion, CA	0.8	Japan	Honshu	8.3	9
3/11/2011			Ballona Creek, CA	0.6	Japan	Honshu	8.3	9
3/11/2011			Berkeley Marina, CA	0.51	Japan	Honshu	8.3	9
3/11/2011			Bodega Bay/Spud Point Marina, CA	0.7	Japan	Honshu	8.3	9

3/11/2011			Bolinas Stinson Beach, CA	0.9	Japan	Honshu	8.3	9
3/11/2011	9	47	CRESCENT CITY, CA	2.47	Japan	Honshu	8.3	9
3/11/2011			Carlsbad, CA	0.6	Japan	Honshu	8.3	9
3/11/2011			Channel Islands Harbor, CA	1.2	Japan	Honshu	8.3	9
3/11/2011			Chula Vista Marina, CA	0.2	Japan	Honshu	8.3	9
3/11/2011			Clipper Yacht Harbor, Sausalito, CA	0.8	Japan	Honshu	8.3	9
3/11/2011			Coronado Island Lifeguard HQ, CA	0.6	Japan	Honshu	8.3	9
3/11/2011			Dana Point Harbor, CA	0.6	Japan	Honshu	8.3	9
3/11/2011			Del Mar, CA	0.9	Japan	Honshu	8.3	9
3/11/2011			Dolphin Isle Marina, Noyo River, CA	0.8	Japan	Honshu	8.3	9
3/11/2011			Emery Cove Yacht Harbor, CA	0.6	Japan	Honshu	8.3	9
3/11/2011			Encinitas Batiquitos, San Elijo, C	1	Japan	Honshu	8.3	9
3/11/2011			HALF MOON BAY, CA	0.7	Japan	Honshu	8.3	9
3/11/2011			Harbor Island West Marina, CA	0.3	Japan	Honshu	8.3	9
3/11/2011			Huntington Harbor, CA	0.72	Japan	Honshu	8.3	9
3/11/2011			Imperial Beach	0.5	Japan	Honshu	8.3	9
3/11/2011			Jenner Russian River	1	Japan	Honshu	8.3	9
3/11/2011			KLAMATH RIVER	2.5	Japan	Honshu	8.3	9
3/11/2011			King Harbor , Redondo Beach	0.7	Japan	Honshu	8.3	9
3/11/2011	11		La Jolla	0.39	Japan	Honshu	8.3	9
3/11/2011			La Jolla	0.9	Japan	Honshu	8.3	9
3/11/2011			Long Beach Marina	0.7	Japan	Honshu	8.3	9
3/11/2011			Los Angeles	0.49	Japan	Honshu	8.3	9
3/11/2011			Mare Island	0.07	Japan	Honshu	8.3	9
3/11/2011			Martinez	0.06	Japan	Honshu	8.3	9
3/11/2011	10	1	Monterey	0.7	Japan	Honshu	8.3	9
3/11/2011			Morro Bay Harbor	1.6	Japan	Honshu	8.3	9
3/11/2011			Marina Del Rey	1	Japan	Honshu	8.3	9
3/11/2011			Mission Bay	0.9	Japan	Honshu	8.3	9
3/11/2011			Moss Landing	2	Japan	Honshu	8.3	9
3/11/2011			North Spit Humboldt Bay	0.97	Japan	Honshu	8.3	9
3/11/2011			Coronado Naval Air Base	0.3	Japan	Honshu	8.3	9
3/11/2011			New Port Beach Harbor	0.3	Japan	Honshu	8.3	9

3/11/2011			Noyo River Harbor	1	Japan	Honshu	8.3	9
3/11/2011			OXNARD	1.2	Japan	Honshu	8.3	9
3/11/2011			Ocean Beach	1	Japan	Honshu	8.3	9
3/11/2011			Oceano Dunes SRA	1	Japan	Honshu	8.3	9
3/11/2011			Oceanside Harbor	0.5	Japan	Honshu	8.3	9
3/11/2011			PISMO BEACH	1	Japan	Honshu	8.3	9
3/11/2011			PLATFORM HARVEST	0.15	Japan	Honshu	8.3	9
3/11/2011			POINT ARENA	1.74	Japan	Honshu	8.3	9
3/11/2011	10	6	POINT REYES	1.35	Japan	Honshu	8.3	9
3/11/2011			PORT CHICAGO	0.04	Japan	Honshu	8.3	9
3/11/2011			PORT HUENEME	1.4	Japan	Honshu	8.3	9
3/11/2011			PORT OF LONG BEACH		Japan	Honshu	8.3	9
3/11/2011	10	23	PORT SAN LUIS	2.02	Japan	Honshu	8.3	9
3/11/2011			Pacifica	1	Japan	Honshu	8.3	9
3/11/2011			Pier 39, San Francisco	0.6	Japan	Honshu	8.3	9
3/11/2011			Pillar Point Harbor	0.7	Japan	Honshu	8.3	9
3/11/2011			Pt Loma Sub Base/Ballast Pt	0.5	Japan	Honshu	8.3	9
3/11/2011	11	54	REDWOOD CITY	0.12	Japan	Honshu	8.3	9
3/11/2011			RICHMOND	0.35	Japan	Honshu	8.3	9
3/11/2011			Rio Del Mar/Aptos		Japan	Honshu	8.3	9
3/11/2011	11	20	SAN DIEGO	0.63	Japan	Honshu	8.3	9
3/11/2011			SAN FRANCISCO	0.62	Japan	Honshu	8.3	9
3/11/2011	10	40	Santa Barbara	1.02	Japan	Honshu	8.3	9
3/11/2011	10	56	SANTA MONICA	0.85	Japan	Honshu	8.3	9
3/11/2011			SHELTER COVE MARINA, SAN DIEGO	0.3	Japan	Honshu	8.3	9
3/11/2011			SHELTER I. DOCK, SAN DIEGO	0.8	Japan	Honshu	8.3	9
3/11/2011			Smith River	2	Japan	Honshu	8.3	9
3/11/2011			Santa Ana River		Japan	Honshu	8.3	9
3/11/2011			Santa Cruz Harbor	1.9	Japan	Honshu	8.3	9
3/11/2011			Scripps	0.25	Japan	Honshu	8.3	9
3/11/2011			Silver Strand State Beach	0.6	Japan	Honshu	8.3	9
3/11/2011			Tijuana River Wetlands	0.2	Japan	Honshu	8.3	9
3/11/2011			Two Harbors Catalina		Japan	Honshu	8.3	9
3/11/2011			Ventura Harbor	1.3	Japan	Honshu	8.3	9
3/11/2011			Waldo Point Marina, Sausalito	1.5	Japan	Honshu	8.3	9
10/28/2012	4	8	ALAMEDA	0.11	Canada	Queen Charlotte Islands	7.5	7.7

10/28/2012	2	57	ARENA COVE	0.35	Canada	Queen Charlotte Islands	7.5	7.7
10/28/2012	2	40	CRESCENT CITY	0.44	Canada	Queen Charlotte Islands	7.5	7.7
10/28/2012	4	37	LA JOLLA	0.05	Canada	Queen Charlotte Islands	7.5	7.7
10/28/2012	4	24	LOS ANGELES	0.08	Canada	Queen Charlotte Islands	7.5	7.7
10/28/2012	3	30	MONTEREY	0.14	Canada	Queen Charlotte Islands	7.5	7.7
10/28/2012	2	42	NORTH SPIT, HUMBOLDT BAY	0.12	Canada	Queen Charlotte Islands	7.5	7.7
10/28/2012	3	15	POINT REYES	0.24	Canada	Queen Charlotte Islands	7.5	7.7
10/28/2012	3	54	PORT SAN LUIS	0.27	Canada	Queen Charlotte Islands	7.5	7.7
10/28/2012	4	4	RICHMOND	0.09	Canada	Queen Charlotte Islands	7.5	7.7
10/28/2012	6		SAN DIEGO	0.05	Canada	Queen Charlotte Islands	7.5	7.7
10/28/2012	3	48	SAN FRANCISCO	0.14	Canada	Queen Charlotte Islands	7.5	7.7
10/28/2012	4	19	SANTA MONICA	0.08	Canada	Queen Charlotte Islands	7.5	7.7

-END-

Web page created by M. Reichle, D. Hoirup, R. Wilson, and E. Mattison, California Geological Survey, 2005.

Updated 4/20/2015 by Cindy Pridmore, California Geological Survey

Attachment M

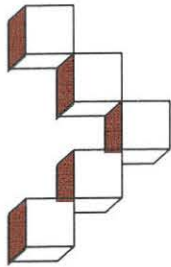
GEOTECHNICAL AND GEOLOGIC INVESTIGATION

*Proposed New Residence
Vacant Lot on Arbor Lane
APN# 037-123-430
Moss Beach, San Mateo County, California*

*Prepared for:
Carlos Zubieta Architect
Attn: Carlos Zubieta*

July 6, 2016

Attachment M



Michelucci & Associates, Inc.

Geotechnical Consultants

Joseph Michelucci, G.E.
joe@michelucci.com

Richard Quarry
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July 6, 2016
Job No. 16-4572

via e-mail: Carlos.zubieta@gmail.com

Carlos Zubieta Architect
Attn: Carlos Zubieta
1725-A Abbot Kinney Boulevard
Venice, CA 90291

Re: Geotechnical and Geologic Investigation
Proposed New Residence
Vacant Lot on Arbor Lane
APN# 037-123-430
Moss Beach, San Mateo County, California

Dear Mr. Zubieta:

As authorized, we have completed geotechnical and geologic investigations at the site of the planned new residence on the currently vacant lot (APN #037-123-430) on Arbor Lane in Moss Beach, San Mateo County, California. The property is referred to as 199 Arbor Lane on various documents.

The purpose of our study was to provide general geotechnical recommendations and design criteria related to the new residence that is planned at the property. We have also evaluated the geologic setting, as the site is located within a complex geologic area where active ocean bluff retreat is occurring immediately west of the property and a strand of the Seal Cove (San Gregorio) Fault is located immediately offshore west of the site. The primary geologic hazard to the site is coastal bluff retreat. In our opinion, the project is feasible from a geologic and geotechnical viewpoint, provided that the recommendations contained in the report are incorporated into the final plans and followed during construction.

As will be discussed in the accompanying report, it is our basic conclusion that the site is located adjacent to a coastal bluff that has been impacted by bluff erosion which has occurred historically at a reported average rate on the order of 1.25 feet per year (as measured between 1866 and 1971 by Griggs & Savoy, 1985). However, our re-analysis of the published bluff retreat rate as well as further analysis of subsequent aerial photographs, results in our conclusion that a more reasonable average retreat rate is about 0.8 feet per year. The measured average rates of bluff retreat and resulting estimate of bluff retreat impact to the proposed residence are discussed within the body of this report.

We are pleased to have been of service to you on this project, and will be available to review our findings with you and your other consultants at the earliest convenience.

Very truly yours,
MICHELUCCI & ASSOCIATES, INC.


John Petroff
Staff Geologist


David F. Hoexter
Certified Engineering Geologist #1158
(expires 11/30/17)


Joseph Michelucci
Geotechnical Engineer #593
(expires 3/31/17)



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Attachment M

GEOTECHNICAL AND GEOLOGIC INVESTIGATIONS

Proposed New Residence
Vacant Lot on Arbor Lane
APN# 037-123-430
Moss Beach, San Mateo County, California

INTRODUCTION

This report addresses the geotechnical and engineering geologic conditions that occur at the site of the planned new residence on the vacant lot on Arbor Lane (APN# 037-123-430) in Moss Beach, San Mateo County, California (Site Vicinity Map, Figure 1). The property is referred to as 199 Arbor Lane on some documents.

A Regional Geologic Map of the site area is presented as Figure 2. It is noted that the site is located within a sensitive geologic area where bluff retreat/erosion is affecting the cliffs west of the property, and the site is also located within close proximity to a strand of the active Seal Cove (San Gregorio) Fault.

The purpose of our study was to evaluate the soil and geologic conditions that occur at the site, and if found geologically feasible, to provide geotechnical recommendations and design criteria pertaining to building foundations, site grading, retaining walls, drainage, and other items that relate to the site soil and geologic conditions. An overview of the property, including the location of test borings performed in conjunction with our study, is included on the attached Site Plan/Engineering Geologic Map, Figure 3.

DESCRIPTION OF PROJECT

We understand that future development plans will call for the construction of a new 2-story residence. We understand that a reinforced concrete slab-on-grade floor is desired.

SCOPE OF SERVICES

Our study included:

1. Detailed site inspections by our geotechnical and geologic personnel;
2. A review of our files for other projects our firm has completed in the site vicinity;
3. A review of preliminary architectural drawings by Carlos Zubieta Architecture, depicting a plan view of the proposed new residence;
4. Discussions with the architect Carlos Zubieta;
5. A review of available published geologic maps and literature;
6. Stereoscopic interpretation of aerial photographs taken between 1941 and 2005; evaluation of bluff retreat in the site vicinity;
7. The excavation of 3 exploratory test borings with a truck mounted drill rig;
8. The recovery of samples from the borings, and the performance of a variety of engineering tests upon the various soil layers encountered;
9. The performance of engineering geologic and geotechnical engineering analysis utilizing the above items; and,
10. The preparation of this report.

FIELD INVESTIGATION AND LABORATORY TESTS

In order to evaluate the geotechnical engineering characteristics of the soil layers which underlie the site, 3 borings were drilled at the approximate locations indicated on the attached Figure 3. The borings were drilled by Hew Drilling of Palo Alto on April 20, 2016, with hollow stem augering equipment. Relatively undisturbed samples were recovered in thin brass tubes from the borings at selected intervals with a free-falling, 140-pound automatic hammer advancing modified California, and in some cases standard penetration, drive samplers 18 inches into the subsurface soil layers. The brass tube encased samples were labeled in the field and carefully sealed to preserve their in-situ moisture content.

As the borings were excavated, logs of the materials encountered were prepared based upon an inspection of the recovered samples and auger cuttings. The final Boring Logs, as presented on the attached Figures 4 through 6, are based upon the field logs with occasional modifications made upon further laboratory examinations of the recovered samples and laboratory test results.

Laboratory tests were performed upon samples that were extruded from the brass tubes. These tests, which are useful in evaluation of the general strength properties of the materials tested, including the determinations of moisture content, dry density and unconfined compressive strength of selected samples. The results of these tests, along with the resistance to penetration of the sampler, are listed opposite the corresponding sample location on Figures 4 through 6. A Boring Log Key is also included as Figure 7.

We also performed a plasticity index test upon a representative near surface sample from Boring 3. The result of this test, which is useful in evaluating the shrink/swell properties of the soils, is included on Figure 8.

SITE CONDITIONS

The site is located on an elevated bluff adjacent to the Pacific Ocean in Moss Beach, in unincorporated San Mateo County, California. The subject property is accessed at the southeast corner of the cul-de-sac ending of Arbor Lane. It is irregularly shaped and comprises approximately 0.32 acres. The site is essentially flat lying and is bound by a slope down to Dean Creek, an ephemeral creek channel along the south side, and by Fitzgerald Marine Preserve, a natural wildlife preserve to the west and northwest. It should be noted that the subject property does not extend directly to the ocean bluff; an intervening lot extending from the termination of Arbor Lane, reportedly owned by the neighborhood association, is situated between the subject lot and the ocean bluff/beach.

An approximately 35 to 40 foot tall near-vertical bluff exists along the west side of the preserve, and the beach is at the base of the bluff. The slope at the ocean bluff is inclined at approximately 0.53 to 1.0 (feet to feet horizontal to vertical), equivalent to 189 percent at the location of Cross Section A-A' (Figure 9). The maximum ocean bluff slope is approximately 0.2 to 1.0 (feet to feet horizontal to vertical), equivalent to 490 percent. The southerly slope adjacent to the drainage is inclined at approximately 1.56 to 1.0 feet to feet (horizontal to vertical) at the location of Cross Section B-B' (Figure 10), equivalent to 64 percent; and 2.2 to 1.0 feet to feet, equivalent to 46 percent, at the location of Cross Section C-C' (Figure 11).

The topography in the area to be developed with the proposed residence is generally level. Presently, the lot is covered with seasonal low-lying grasses and brush.

There are also two wells that were previously installed on the north end of the property. Well #1 was reportedly completed to approximately 200 feet and the deeper well (Well #2) reportedly extends 550 feet below grade (California Department of Water Resources (CDWR), Well Drillers Log, 1998).

REGIONAL GEOLOGIC SETTING

The site is located within the central region of the Coast Ranges Geomorphic Province, which extends from the Oregon border south to the Transverse Ranges. Sub-parallel, northwest trending mountain ranges and intervening valleys characterize the general topography. The region has undergone a complex geologic history of sedimentation, volcanic activity, folding, faulting, uplift and erosion. The Santa Cruz Mountains are located northeast of the site; the Pacific Ocean is located to the west.

The site is located within the Montara Mountain 7.5' Quadrangle. A California Geological Survey (CGS) Seismic Hazard Zone Map has not (to date) been prepared for this quadrangle. The site is not located within a CGS Fault Rupture Hazard Zone.

SITE GEOLOGY

The geologic setting of the site area is shown on the attached Regional Geologic Map, Figure 2. As indicated on Figure 2, the site vicinity is primarily underlain by Marine Terrace Deposits (Qmt) (Brabb, Graymer and Jones, 1998; Pampeyan, 1994). These sediments are commonly poorly to moderately consolidated marine, eolian (wind deposited), and alluvial sand, silt, gravel and clay in various proportions and combinations, in distinct to indistinct lenses and beds, and are commonly as much as 40 to 50 feet thick; based on visual observation of the adjacent bluff and on our exploratory borings, we estimate that these sediments are essentially flat-lying and on the order of 50 feet thick in maximum thickness at the site. The Marine Terrace Deposits are underlain by Purisima Formation sediments, consisting of thinly bedded and highly fractured siltstone, shale and sandstone. At greater depth are plutonic rocks known as the Montara Mountain Granite or Quartz Diorite.

The Well #2 drillers log that we reviewed indicates the presence of 5 feet of "topsoil" and apparent terrace deposits consisting of sand and clay and sand to a depth of 45 feet; underlain by gray clay with shells and gray sand to a depth of 145 feet, likely the Purisima Formation; and thence by "granite" (Montara Mountain Granite/Quartz Diorite) to the total depth drilled of 550 feet.

A layer of beach sand mantles the Purisima Formation sediments between the shoreline and the base of the bluff. The occurrence of beach sand varies over the course of the year. Talus or bluff fall material is commonly present at the base of the bluff.

Some artificial fill was also placed in the area of the ephemeral creek channel along the south side of the property. The fill is of unknown origin and composition, although we did observe that there were cobbles and boulders present at the ground surface in the area of the fill.

The nearby Seal Cove Fault is discussed in the Seismic Setting section of this report.

AERIAL PHOTOGRAPHIC INTERPRETATION

Sixteen sets of aerial photographic stereo pairs taken between 1941 and 2005 were interpreted for this investigation. Imagery scales ranged from 1:7,200 to 1:24,000. The photos are referenced at the conclusion of this report. We also viewed and compared periodic imagery from the website NETRonline.com dating from 1946 through 2012.

Arbor Lane is not present in 1941. The site and nearby vicinity are the location of row crops. The ground surface is level, with a slight slope and thus drainage discharge to the northwest towards the ocean bluff. An incised drainage/ephemeral creek is immediately adjacent to the south. The creek bank adjacent to the site is exposed and slopes down to the creek channel; the slope exhibits minor slumping and sloughing of soil but not landsliding or active bluff retreat. The western ocean bluff is near vertical near the subject site with exposed sedimentary bedrock along the beach in the adjacent tidal zone. The adjacent offshore bedrock sedimentary syncline, located in the surf zone, is visible. There are no landslides or rotational failures along the bluff; past bluff retreat appears to be due to periodic sloughing of relatively loose soil.

Subsequent imagery through 2005 indicates periodic sloughing/falling of soil from the exposed ocean bluff face both directly west of the site as well as to the north and the south. The imagery depicts The Strand, a road along the bluff to the south, as it is gradually undercut by ocean bluff retreat until no longer passable by 1969. The imagery also depicts bluff retreat adjacent to the three residences constructed between 1955 and 1969 off of Reef Point Road to the north.

Arbor Lane was constructed between 1969 and 1975, with five residences under or recently constructed near the subject site indicated on the 1975 images; the subject site remains vacant in 1975. Slope protection measures (shotcrete) have been instituted for the Reef Point Road residences. By 1976 there is apparent fill and a culvert near the beach immediately south of the site to convey the lateral drainage flow. The purpose of this fill and culvert is not evident, as there are no indications of erosion or bluff failure along the lateral drainage at this location which would necessitate placement of the fill.

A retaining wall is present by 1991 along the ocean bluff adjacent to the residence north of the adjacent Arbor Lane cul-de-sac (newly constructed in the 1976 imagery). This appears to be the wall which is currently present at this location.

In general, the subject site remains essentially unchanged during the period from 1941 through 2005 (and to the present). The sloping bluff to the south along the lateral drainage is subject to minor sloughing and erosion, and to a growth of dense vegetation, but the top of the bluff does not appear to retreat. However, the aerial imagery indicates periodic retreat of the bluff face and top adjacent to the beach to the west. The western ocean bluff retreat is further discussed in the following section of this report.

OCEAN BLUFF RETREAT

There are no indications of landsliding within or on property adjacent to the subject site. However, the adjacent bluffs to the south along the adjacent lateral drainage (to a minor degree) and to the west along the Pacific Ocean (to a much greater degree) are actively retreating by periodically sloughing along the exposed bluff face.

The southern ephemeral drainage bluff is covered with vegetation and mature trees, and it is not feasible to view the ground surface on aerial photographs. A comparison of the 1997 and 2016 site surveys indicates negligible/minor slope retreat, which, based on the general slope appearance in historic aerial photographs, is applicable to a longer period of time. The southern bluff retreat does not appear to be direct hazard to the proposed residence.

We observed indications of failure of the ocean bluff during the past winter, with debris from the slope present at the base of the slope and a bare "scar" on the bluff face at the location of the debris fall. The failure mechanism of the ocean bluff face appears to be undercutting of the relatively weak, unconsolidated bluff sediments by wave action at the beach level.

We identified one published calculation of average annual ocean bluff retreat at or near the site, prepared by Griggs and Savoy (1985). Griggs & Savoy, as shown on Figure 11.14, estimate an average rate of 15 inches (1.25 feet) per year over a 105-year period. This estimate is based on approximate measurements of the distance of prominent rocks shown on a 1866 Coast and Geodetic Survey map (and remaining to the present) to the base of the sea cliff, in comparison to the cliff location on a 1971 map (source of the map not indicated). We obtained a copy of the 1866 map, and measured the magnitude of bluff erosion at three locations adjacent to the subject site, using the current 2016 Google Earth image to compare with the 1866 map. Our three measurements were 144, 133 and 51 feet respectively for the three locations, corresponding to 0.96, 0.89, and 0.34 feet/year for the 150-year intervening period, an average of 109 feet (0.73 feet/year).

We then compared the location of the top edge of the ocean bluff in 1946 and 2012, using downloaded scaled imagery purchased from the website NETR Online/Historic Aerials (<http://www.historicaerials.com>). We measured at two locations, with magnitudes of retreat of 14 and 26 feet. The average rate of bluff retreat for the 26 feet measurement within this 66 period was approximately 0.40 feet/year.

We also compared the location of the bluff base as shown on 2005 stereo pair imagery supplied by Pacific Aerial Surveys of Oakland, California with the 1866 survey. Based on measuring from the center of the offshore rocks and from the eastern edge of the rocks, we measured bluff retreat of 80 and 108 feet, respectively, corresponding to average retreat rates of 0.58 and 0.78 feet/year.

Based on the 2016 topographic survey of the site when compared to the earlier 1997 site survey, the bluff retreat at four representative locations from the north to the south was 8, 16, 12, and 6 feet, an average of 10.5 feet, corresponding to an average retreat rate of 0.55 feet/year.

The western property line is currently located about 30 feet at its closest point from the edge of the ocean bluff. Assuming the most conservative average bluff retreat rate (of Griggs & Savoy), 1.25 feet/year, we would project the bluff to retreat 30 feet to the western property line in approximately 24 years. At this rate, the ocean bluff would retreat to the western building setback line (an additional 30 feet) in approximately 48 years, and to the current closest point of the proposed residence, approximately 17 feet further inland, in approximately 14 additional years, resulting in bluff retreat at the maximum rate of 1.25 feet/year reaching the proposed residence in approximately 62 years.

However, in our opinion, this period of time (62 years), based on the Griggs and Savoy measurement, is unnecessarily conservative inasmuch as our calculations, based on the same 1866 survey as Griggs & Savoy, result in a lower average rate (0.73 versus 1.25 feet/year). Additional calculations based on aerial photographs and site-specific surveys, albeit for shorter periods of time, also result in lower average rates of retreat, ranging from 0.40 to 0.78 feet/year. Thus, the actual rate of retreat is likely to be slower. Utilizing an average retreat rate of **0.78 feet/year**, which in our opinion is a more reasonable rate, the ocean bluff retreat would reach the western property line, western building setback line, and closest point of the proposed residence in approximately 38, 76 and 99 years, respectively.

Note that the calculated rates of bluff edge retreat are based on an assumption that the rate of retreat is constant. However, ocean bluff failures occur episodically and not uniformly through time. Therefore, the measured/calculated rates of retreat must be assumed to be indicative but not strictly representative of the long-term rates. Furthermore, any one-failure episode is likely to involve considerably greater retreat than the average. In other words, an individual failure episode may involve several feet of bluff edge retreat, followed by many years and even decades of no retreat.

We also qualitatively evaluated the ocean bluff seismic stability. A brief evaluation of the geologic literature suggests that ocean bluff failures have occurred along the San Mateo County coast during earthquakes, in particular the 1906, 1957 and 1989 San Francisco, Daly City and Loma Prieta events. The events appear to generally consist of “peeling” or “slumping” of bluff face material similar to undercutting by wave erosion, as opposed to circular or block glide type failures.

At the subject site, earthquake-caused instability would in our opinion be similar in scope to the periodic primarily winter wave undercut failures, and would likely “replace” or occur at the location of an imminent undercutting failure. Seismic bluff failure would thus be incorporated into as opposed to being additive to the long-term bluff retreat.

SEISMIC SETTING

The closest mapped major active fault zone to the site is the Seal Cove Fault Zone, the main active trace of which is located approximately 0.1 miles (0.2 kilometers) to the northeast. The Seal Cove Fault is the northern extension of the San Gregorio Fault, which extends at least to Monterey Bay on the south and northward into the Pacific Ocean west of San Francisco. The fault is well-defined west of the site where it offsets prominent Purissima Formation bedding. The fault is a minimum of 545 feet at its closest location from the site.

The major active trace of the San Andreas Fault is mapped approximately 9.0 miles (14.5 kilometers) also to the northeast. The Hayward Fault and the Calaveras Fault are located further to the northeast. The San Andreas, Seal Cove, Hayward and Calaveras Faults are all part of the major active San Andreas Fault System and the sources of numerous earthquakes which have impacted the San Francisco Bay Area and throughout California. It is highly probable that the site will experience very strong ground shaking in the future during a moderate to large nearby earthquake on one of these or additional active or potentially active faults that are a part of the San Andreas Fault System.

SOIL AND BEDROCK CONDITIONS

We excavated three test borings on the property at the approximate locations shown on the attached Figure 3. In general the materials encountered in the borings were very consistent. The only differences (and very slightly at that) were the depths to the various soil horizons at each boring location.

In Boring 1, The soil encountered in the uppermost 1 ½ feet was interpreted to be artificial fill (soil A) and consisted of soft to medium stiff dark olive brown fine sandy silty clay to clayey silt with rock fragments and rootlets. The fill was underlain by about 1 foot of native soil (soil B) consisting of medium dense very dark brown silty clayey fine to coarse sand with rootlets and weathered granite fragments. The native soil graded to medium stiff to stiff terrace deposits (soil C) consisting of dark yellowish brown to yellowish brown fine to coarse sandy silt to sandy clay with some fine to coarse sandy lenses. At about 6 ½ feet below grade, the terrace deposits were noted to be stiff to very stiff and consisted of mottled light yellowish brown fine to coarse sandy clay to sandy silt containing granite pebbles/fragments and fine to coarse sandy and silty clay lenses (soil D). At about 18 feet below grade, the terrace deposits graded to generally sandy material consisting of light yellowish brown silty fine to medium sand with yellow and yellowish brown mottling (soil E). The sandy terrace deposits extended to a depth of about 36 ½ feet below grade, where very moist, dense to very dense dark greenish gray silty fine to coarse sand containing scattered shale fragments and lenses of coarse sand and gravel was encountered (soil F). Boring 1 was terminated at 41-1/3 feet below grade where refusal was encountered in the dark greenish gray sandy material.

Boring 2, was the deepest of the three borings. As noted, the various soil horizons we encountered were similar to those encountered in Boring 1. In Boring 2, about 1-½ feet of soil A was encountered at the ground surface, which was underlain by about 2 ½ feet of soil B. Clayey terrace deposits (soil C) were encountered beneath soil B, which extended to about 6 ½ feet below grade. Sandier terrace deposits (soil D) were encountered beneath soil C, and at about 18 feet below grade, the terrace deposits grade to predominantly fine to coarse sandy deposits (soil E). At 40 feet below grade, the dense to very dense dark greenish gray sandy material was encountered (soil F). At about 50 feet below grade, we encountered material we are interpreting as Purisima Formation bedrock, which consisted of hard dark gray sandstone and shale; we should point out that this material strongly resembled the bedrock materials exposed on the beach and in the tide pools below the site immediately to the west. Boring 2 was terminated in the Purisima Formation material at a depth of 50-1/6 feet below grade.

Boring 3, was the shallowest of the three borings and was excavated within close proximity to the cul-de-sac ending of Arbor Lane. Again, similar materials were encountered in this boring. Artificial fill (soil A) extended to a depth of 1 ½ feet below grade, and native soil (soil B), which tested to be non plastic in expansion potential, extended to a depth of about 3 ½ feet below grade. Dense to very dense terrace deposits were encountered beneath the topsoil layer; the terrace deposits extended to the depth explored of 21-1/6 feet below grade.

Groundwater was encountered in Boring 1 at about 40 ½ feet below grade and in Boring 2 at about 49 feet below grade at the time of drilling. Based on our review of the available previously excavated well data, stabilized water in the deep well was measured at 38 feet after it was drilled. Groundwater levels, however, tend to fluctuate seasonally, and could rise to shallower depths in the future.

A plan of the general site features is included on Figure 5. For a more complete description of the soil and bedrock layers encountered in the borings, refer to the final Boring Logs included as Figures 4 through 6 and the Boring Log Key included as Figure 7. The results of our plasticity test on the near surface soil sampled in Boring 3 are included on the attached Figure 8.

CONCLUSIONS

Based upon our study, it is our opinion that the project can be developed as planned, provided that the recommendations contained within this report are followed. The primary geotechnical consideration involves the upper 2 to 4 feet of surface soil that was generally weak. This material, is compressible, and thus, consideration should be given to supporting the planned slab on grade floor on drilled reinforced concrete piers that gain support in the strong Marine Terrace Deposits that were encountered below the weak surface soils in our three test borings. In order to fortify the foundation and make it resistant to bluff retreat one day in the distant future causing a catastrophic failure consideration could be given to constructing deep drilled piers along the edge of the structure closest to the bluff and utilizing the slab and more conventional interior and perimeter piers as "tie backs".

The primary geologic consideration is the rate of ocean bluff retreat, which, based on the most conservative calculated value of 1.25 feet/year, will result in the bluff edge retreating to the proposed residence location in approximately 62 years. However, based on recalculating the published retreat rate and measuring on additional imagery, we conclude that the bluff edge will retreat to the proposed residence location in approximately 99 years.

Specific recommendations follow.

RECOMMENDATIONS

The following recommendations are contingent upon our firm being retained to review the development plans and to observe the geotechnical aspects of construction.

A. Seismic Criteria Per 2013 CBC

As of January 1, 2014, the 2013 CBC is being utilized for projects in California. This new code is based upon the 2012 International Building Code.

It is our opinion that the subject site can be classified as Site Class "D" for the purpose of structural engineering calculations as defined in Section 1613 of the 2013 CBC.

B. Grading

In areas to receive new driveways, patios, or flatwork, the upper 2 to 3 feet of weak surface should be over-excavated exposing strong subgrade soil approved by our representative. The upper 4 to 6 inches of this soil contains organic matter; this material should either be hauled away or stored on the site for possible landscaping purposes. The subgrade should be scarified, brought to a moisture content that will allow proper compaction and then be compacted to a minimum degree of 90 percent, based upon ASTM D1557, latest revision. The existing soil that is free of organics may be recompacted (to a minimum degree of 95 percent) as engineered fill. Any areas to receive flatwork, pavements, or slabs on grade should also be underlain by at least 12 inches of select granular engineered fill (such as class II baserock). The select granular fill should be compacted to a minimum degree of 95 percent, based upon ASTM D1557, latest revision.

C. Drilled Piers

In our opinion the slab on grade should be structural in nature and supported upon drilled piers.

Drilled piers should be designed on the basis of a skin friction value of 500 psf beginning at the top of supporting material. In this case, the top of supporting material should be assumed to begin at a depth of 4 feet, or the top of the marine terrace deposits, whichever is deeper.

Pier depths should be based upon actual design loads. However, as a minimum, the piers should extend 8 feet below the top of supporting material. Therefore, it is anticipated that average pier depths will be on the order of 12 feet below existing grade.

We also suggest that voluntary consideration be given to deepening the piers along the perimeter of the structure that is closet to the bluff.

In addition to vertical loading, such "bluff" piers should be designed to resist a horizontal "creep" load equal to a fluid weighing 45 pounds per cubic foot, projected over 2-½ pier diameters. The load should begin at the ground surface and extend to a depth of 20 feet. The piers can resist the lateral load through a passive resistance of 350 pounds per cubic foot, projected over 2 pier diameters. The creep load could be transmitted to the interior piers through slab reinforcement. It is suggested that the structural engineer contact us during the design phase, so that a specific lateral load criteria can be developed for each pier location.

Reinforcing for the piers should be determined by the structural engineer based upon anticipated loading.

It is possible that water may accumulate in the pier excavations. Therefore, provisions for casing may be necessary. Any water that accumulates in the piers should be pumped out prior to concrete placement. Alternatively concrete may be placed by the "tremie technique".

D. Slab-On-Grade Construction

The slabs should be reinforced with steel bars and supported upon drilled piers. It is recommended that some type of moisture retardant be provided beneath the slabs. We have included a commonly used treatment on the attached Figure 12, however the project architect, or moisture control consultant should provide the final plan. This is critical as the piers could provide a capillary rise of moisture that could by pass conventional systems.

E. Surface Drainage

We recommend that the site be fine-graded to direct water to flow away from the building foundations. As a general requirement, storm water should not be allowed to pond or flow in concentrated streams or channels on the site. Such ponding or flows and the resulting saturation can weaken the soils and perhaps cause some minor site erosion.

It is further recommended that all roof downspouts be led into tightline disposal pipes that deposit water well away from building foundations and into a suitable disposal area, ideally the street gutter.

F. Review of Plans and Construction Observations

It is recommended that all of the plans related to our recommendations be submitted to our office for review. The purpose of our review will be to verify that our recommendations are understood and reflected on the plans, and to allow us to provide supplemental recommendations, if necessary.

It is important that our firm be retained to provide observation and testing services during construction. Our observations and tests will allow us to verify that the materials encountered are consistent with those found during our study, and will allow us to provide supplemental, on-site recommendations, as necessary.

LIMITATIONS

The conclusions and opinions expressed in this report are based upon the exploratory borings that were drilled on the site, spaced as shown on the Site Plan/Engineering Geologic Map, Figure 3. While in our opinion these borings adequately disclose the soil conditions across the site, the possibility exists that abnormalities or changes in the soil conditions, which were not discovered by this investigation, could occur between borings.

This study was not intended to disclose the locations of any existing utilities, septic tanks, leaching fields, hazardous wastes, or other buried structures. The contractor or other people should locate these items, if necessary.

The passage of time may result in significant changes in technology, economic conditions, or site variations that could render this report inaccurate. Accordingly, neither Carlos Zubieta Architect nor any other party shall rely on the information or conclusions contained in this report after 12 months from its date of issuance without the express written consent of Michelucci & Associates, Inc. Reliance on this report after such period of time shall be at the user's sole risk. Should Michelucci & Associates, Inc. be required to review the report after 12 months from its date of issuance, Michelucci & Associates, Inc. shall be entitled to additional compensation at then-existing rates or such other terms as may be agreed upon between Michelucci & Associates, Inc. and Carlos Zubieta Architect.

This report was prepared to provide engineering opinions and recommendations only. It should not be construed to be any type of guarantee or insurance.

REFERENCES

Aerial Photographs

Black and white (unless otherwise noted) vertical stereo pairs.

Source	Image ID	Date	Scale
Fair	6660-5/6	3/23/41	1:24,000
PAS-AV-	9-16-1/2	7/29/46	1:23,600
PAS-AV-	170-01-21/22	5/6/55	1:10,000
PAS-AV-	933-02-25/26	10/29/69	1:12,000
PAS-AV-	1188-01-27/28	4/28/75	1:12,000
Unk	28965-1/2	3/11/76	1:11,760
PAS-AV-	1356-01-15/16	6/2/77	1:12,000
PAS-AV-	2020-01-28/29	6/19/81	1:12,000
PAS-AV-	2265-01-27/28	6/6/83	1:12,000
PAS-AV-	2670-1-29/30	10/14/85	1:12,000
PAS-SMT-AV-	4075-1-17/18	7/2/91	1:12,000
PAS-SMT-AV-	4515-0201-7/8	8/27/93	1:12,000
PAS-AV-	4916-201-8/9	9/7/95	1:12,000
PAS-AV-	5434-201-6/7	6/23/97	1:12,000
PAS-AV-	6600-201-7/8	8/15/00	1:12,000
PAS-KAV-	9200-71-1/2	10/31/05	1:7,200

Fair – Fairchild Aerial Photography Collection, Whittier College

PAS - Pacific Aerial Surveys, Oakland, California

Unk – unknown

KAV - color

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California Division of Mines and Geology, 1982, Montara Mountain, California 7.5' Quadrangle, State of California, Special Studies Zones, Revised Official Map, January 1, 1982; Scale 1:24,000.

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United States Geological Survey, 1956, Montara Mountain, California 7.5' Topographic Quadrangle 1956, photo revised 1980.

Attachment M

SITE VICINITY MAP*

199 Arbor Lane
Moss Beach, San Mateo County, California



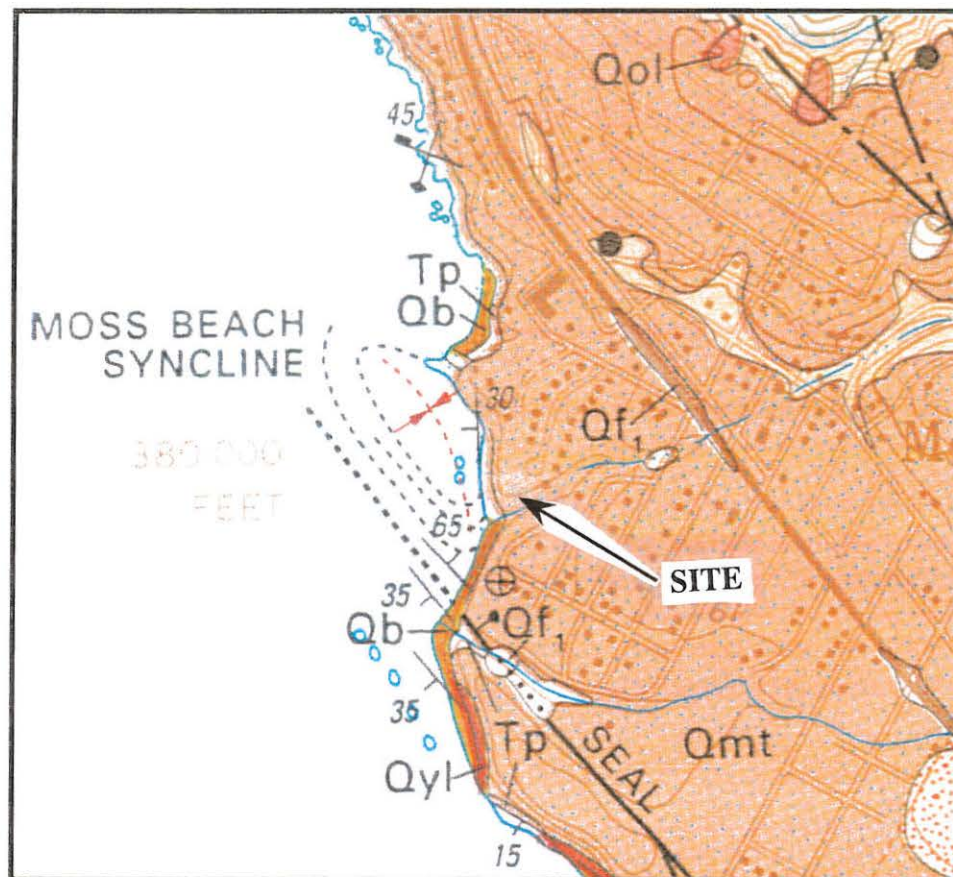
0 400' 800'
Scale

*BASE MAP FROM COUNTY OF SAN MATEO CADASTRAL TOPOGRAPHIC SERIES, SHEETS 9A, 1973, (REVISED 1-1-82).



Attachment M

REGIONAL GEOPLOGIC MAP*
199 Arbor Lane
Moss Beach, San Mateo County, California



EXPLANATION

Surficial Deposits

- Qf1 Artificial Fill (Unit 1)
- Qyl Younger Landslide Deposit
- Qol Older Landslide Deposit
- Qac? Coarse Grained Alluvium
- Qsr Slope Wash, Ravine Fill, and Colluvium
- Qb Beach Deposits
- Qmt Marine Terrace Deposits

Bedrock Deposits

- Tp Purisima Formation
- Km Granitic Rock Of Montara Mountain

Symbols

- Contact
- Fault (dashed where inferred, dotted where concealed, bar and ball on downthrown side)
- Photo-lineament
- Strike And Dip Of Beds
- Syncline
- Borrow Pit
- Shallow Landslide
- Horizontal Beds

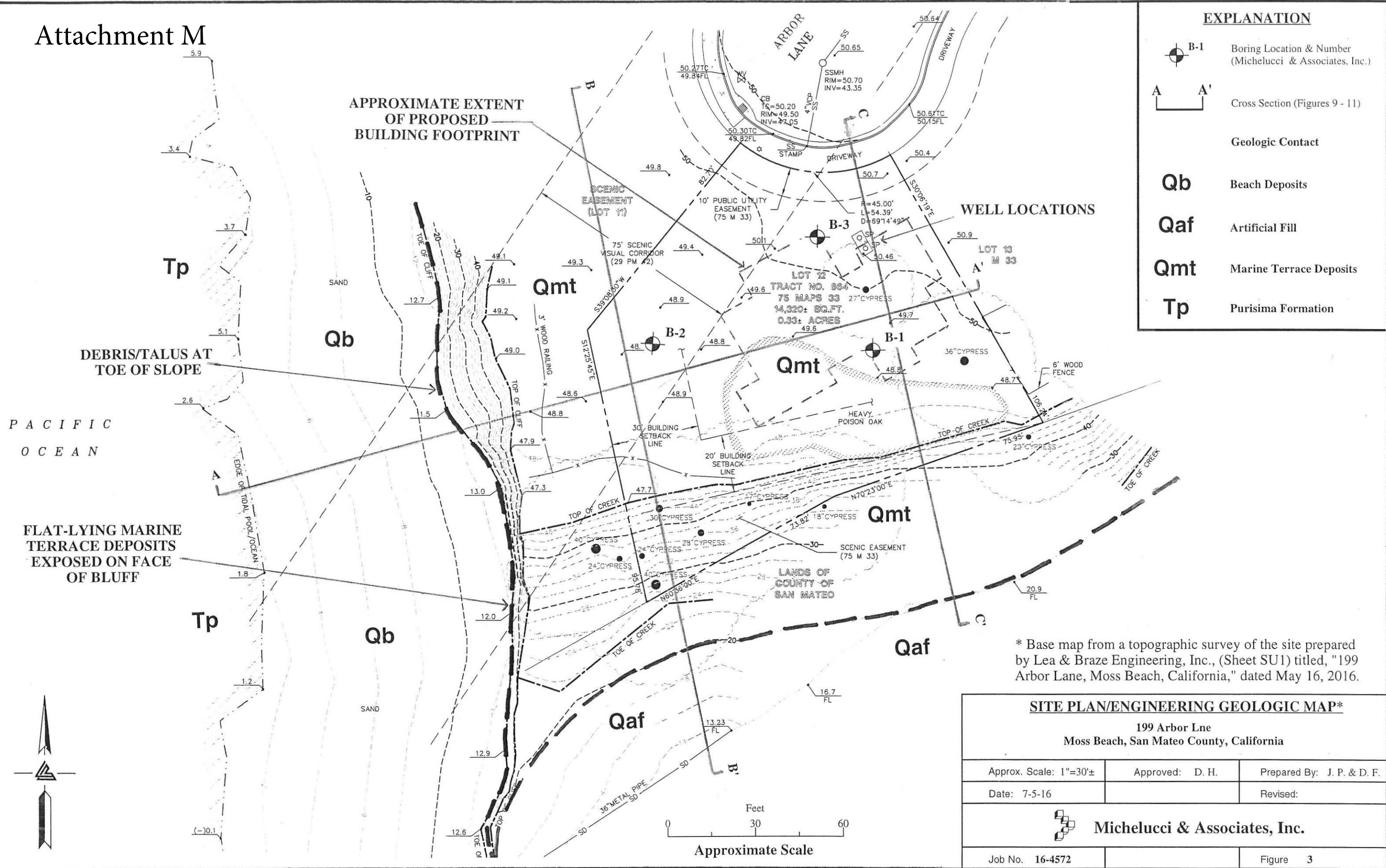
0 1000' 2000'

Approximate Scale

*BASE MAP FROM PAMPEYAN (1994)



Attachment M



Attachment M

Project: **199 Arbor Lane**
 Project Location: **Moss Beach, CA**
 Project Number: **16-4572**

Log of Boring 1 Sheet 1 of 2

Date(s) Drilled 04/20/16	Logged By J.P	Checked By J.P
Drilling Method 6" hollow stem	Drill Bit Size/Type	Total Depth of Borehole 41.3 feet
Drill Rig Type CME-75 Truck Rig	Drilling Contractor	Approximate Surface Elevation
Groundwater Level and Date Measured Dry	Sampling Method(s) 2.0", SPT	Hammer Data 140 lb; Automatic
Borehole Backfill Grout		

Depth (feet)	Graphic Log	Material Type	MATERIAL DESCRIPTION	Sample Type	Sample Number	Driving Resistance, blows/ft	Dry Unit Weight, pcf	Water Content, %	UC, psf	Deg. of Saturation (%)	PI, %
0		ML	Soft to medium stiff, dark olive brown, fine sandy silty clay to clayey silt with rock fragments and rootlets, moist. (Disturbed/Cultivated Soil)								
		SM-SC			1-1 (2.0")	23					
		GL	Medium dense, very dark brown, silty clayey fine to coarse sand, with rootlets and weathered granite fragments. (Native Soil)								
5			Medium stiff to stiff, dark yellowish brown to yellowish brown, fine to coarse sandy silt to sandy clay, with lenses of fine to coarse sand. (Marine Terrace Deposits)		1-2 (2.0")	24	113.1	15.4	6272	84.9	
		GL									
10			Stiff to very stiff, light yellowish brown, fine to coarse sandy clay to sandy silt, various colors of mottling and weathered granite pebbles/fragments. (Marine Terrace Deposits)		1-3 (2.0")	19	106.2	18.8	3344	86.3	
			- Fine to coarse sandy and thin silty clayey lenses. - Strong brown and light yellowish brown staining.		1-4 (SPT)	44					
15					1-5 (2.0")	49	119.7	12.9	1809	85.7	
20		SM	Dense, light yellowish brown, silty fine to medium sand, with yellow and yellowish brown mottling, moist. (Marine Terrace Deposits)		1-6 (2.0")	40	109.4	19.6		97.9	
					1-7 (SPT)	53					
25					1-8 (2.0")	54	104.8	21.4		95.0	



Michelucci & Associates

Figure 4

Project: **199 Arbor Lane**
 Project Location: **Moss Beach, CA**
 Project Number: **16-4572**

Log of Boring 1
 Sheet 2 of 2

Depth (feet)	Graphic Log	Material Type	MATERIAL DESCRIPTION	Sample Type	Sample Number	Driving Resistance, blows/ft	Dry Unit Weight, pcf	Water Content, %	UC, psf	Deg. of Saturation (%)	PI, %
30		SM	Dense, light yellowish brown, silty fine to medium sand, with yellow and yellowish brown mottling, moist. (Marine Terrace Deposits)		1-9 (2.0")	79	114.1	15.5		88.1	
					1-10 (SPT)	63					
35					1-11 (2.0")	54	96.7	23.9		86.9	
40		SM	Dense, dark greenish gray, silty fine to coarse sand with scattered shale fragments, lenses of coarse sand and pebbles/gravel, very moist. (Marine Terrace Deposits) - Water first observed at 40'6"		1-12 (2.0")	52/5"	114.5	14		80.3	
					1-13 (SPT)	52/5"					
45			Boring terminated at 41'4"								
50											



Michelucci & Associates

Figure 4

Project: 199 Arbor Lane	Log of Boring 2 Sheet 1 of 2
Project Location: Moss Beach, CA	
Project Number: 16-4572	

Date(s) Drilled 04/20/16	Logged By J.P	Checked By J.P
Drilling Method 6" hollow stem	Drill Bit Size/Type	Total Depth of Borehole 50.16 feet
Drill Rig Type CME-75 Truck Rig	Drilling Contractor	Approximate Surface Elevation
Groundwater Level and Date Measured Dry	Sampling Method(s) 2.0", SPT	Hammer Data 140 lb; Automatic
Borehole Backfill Grout		

Depth (feet)	Graphic Log	Material Type	MATERIAL DESCRIPTION	Sample Type	Sample Number	Driving Resistance, blows/ft	Dry Unit Weight, pcf	Water Content, %	UC, psf	Deg. of Saturation (%)	PI, %
0		ML	Soft to medium stiff, dark olive brown, fine sandy clayey silt with rootlets and rock fragments. (Disturbed/Cultivated Soil)								
		SC	Medium dense, loose, very dark grayish brown to black, clayey fine to coarse sand, with rootlets and granite fragments/pebbles, moist. (Native Soil)		2-1 (2.0")	18					
		ML-GL	Medium stiff to stiff, brown to dark yellowish brown, fine to coarse sandy clay to sandy silt with medium to coarse sand lenses. (Marine Terrace Deposits)		2-2 (2.0")	21	87.2	26.5	1156	76.8	
5		SC-GL	Stiff to very stiff, light yellowish brown to light olive brown, fine to coarse sandy clay to clayey sand, mottled various colors, strong brown and brownish yellow mottling and weathered granite fragments/pebbles. (Marine Terrace Deposits)		2-3 (2.0")	93	110.9	8.2	1312	42.6	
			- Lenses of fine to coarse sand		2-4 (2.0")	52/5"	121.5	8		55.8	
15					2-5 (SPT)	54					
		SM	Dense, light yellowish brown, silty fine to medium sand, with yellow mottling, moist. (Marine Terrace Deposits)		2-6 (2.0")	65	111.4	14.4		76.0	
20					2-7 (2.0")	74	108.8	17.2		84.7	
25											



Michelucci & Associates

Figure 5

Project: **199 Arbor Lane**
 Project Location: **Moss Beach, CA**
 Project Number: **16-4572**

Log of Boring 2
 Sheet 2 of 2

Depth (feet)	Graphic Log	Material Type	MATERIAL DESCRIPTION	Sample Type	Sample Number	Driving Resistance, blows/ft	Dry Unit Weight, pcf	Water Content, %	UC, psf	Deg. of Saturation (%)	PI, %
30		SM	Dense, light yellowish brown, silty fine to medium sand, with yellow mottling, moist. (Marine Terrace Deposits)		2-8 (2.0")	65	108.8	9.5		46.9	
35					2-9 (2.0")	68	104.8	16.3		72.3	
40		SM	Dense, dark greenish gray, silty fine to medium sand with scattered shale fragments, damp. (Marine Terrace Deposits)		2-10 (2.0")	51 1/4"	96.1	13.6		48.7	
45					2-11 (2.0")	51 1/6"	108.3	13.8		66.9	
50			Hard, dark gray, sandstone and shale bedrock. (Purisima Formation) Boring terminated at 50'2"		2-12 (SPT)	53 1/2"					



Michelucci & Associates

Figure 5

Project: 199 Arbor Lane	Log of Boring 3 Sheet 1 of 1
Project Location: Moss Beach, CA	
Project Number: 16-4572	

Date(s) Drilled 04/20/16	Logged By J.P	Checked By J.P
Drilling Method Continuous flight 6"	Drill Bit Size/Type	Total Depth of Borehole 21.16 feet
Drill Rig Type CME-75 Truck Rig	Drilling Contractor	Approximate Surface Elevation
Groundwater Level and Date Measured Dry	Sampling Method(s) 2.0", SPT	Hammer Data 140 lb; Automatic
Borehole Backfill Grout		

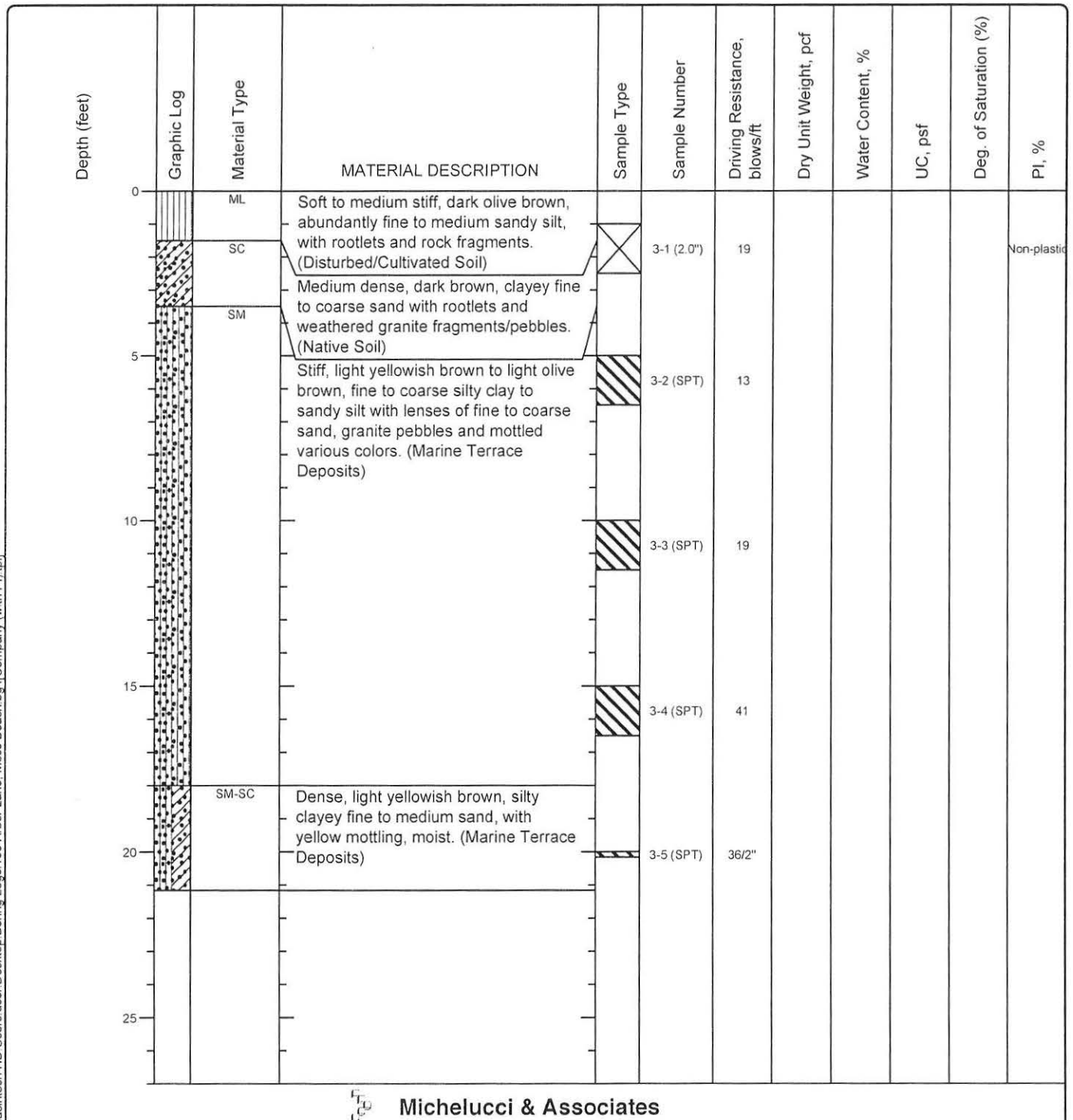


Figure 6

Project: **199 Arbor Lane**
 Project Location: **Moss Beach, CA**
 Project Number: **16-4572**

Key to Log of Boring
 Sheet 1 of 1

Depth (feet)	Graphic Log	Material Type	MATERIAL DESCRIPTION	Sample Type	Sample Number	Driving Resistance, blows/ft	Dry Unit Weight, pcf	Water Content, %	UC, psf	Deg. of Saturation (%)	PI, %
1	2	3	4	5	6	7	8	9	10	11	12

COLUMN DESCRIPTIONS

- | | |
|---|--|
| <p>1 Depth (feet): Depth in feet below the ground surface.</p> <p>2 Graphic Log: Graphic depiction of the subsurface material encountered.</p> <p>3 Material Type: Type of material encountered.</p> <p>4 MATERIAL DESCRIPTION: Description of material encountered. May include consistency, moisture, color, and other descriptive text.</p> <p>5 Sample Type: Type of soil sample collected at the depth interval shown.</p> <p>6 Sample Number: Sample identification number.</p> <p>7 Driving Resistance, blows/ft: Number of blows to advance driven sampler one foot (or distance shown) beyond seating interval using the hammer identified on the boring log.</p> <p>8 Dry Unit Weight, pcf: Dry weight per unit volume of soil sample measured in laboratory, in pounds per cubic foot.</p> | <p>9 Water Content, %: Water content of the soil sample, expressed as percentage of dry weight of sample.</p> <p>10 UC, psf: Unconfined compressive strength, in pounds per square foot.</p> <p>11 Deg. of Saturation (%): Deg. of Saturation (%)</p> <p>12 PI, %: Plasticity Index, expressed as a water content.</p> |
|---|--|

FIELD AND LABORATORY TEST ABBREVIATIONS

CHEM: Chemical tests to assess corrosivity
 COMP: Compaction test
 CONS: One-dimensional consolidation test
 LL: Liquid Limit, percent

PI: Plasticity Index, percent
 SA: Sieve analysis (percent passing No. 200 Sieve)
 UC: Unconfined compressive strength test, Qu, in ksf
 WA: Wash sieve (percent passing No. 200 Sieve)

MATERIAL GRAPHIC SYMBOLS



AF



Low plasticity PEAT (OL)



Silty SAND (SM)

TYPICAL SAMPLER GRAPHIC SYMBOLS



Auger sampler



CME Sampler



Bulk Sample



Grab Sample



3-inch-OD California w/
brass rings



2.5-inch-OD Modified
California w/ brass liners



Pitcher Sample



2-inch-OD unlined split
spoon (SPT)



Shelby Tube (Thin-walled,
fixed head)

OTHER GRAPHIC SYMBOLS



Water level (at time of drilling, ATD)



Water level (after waiting)



Minor change in material properties within a
stratum



Inferred/gradational contact between strata

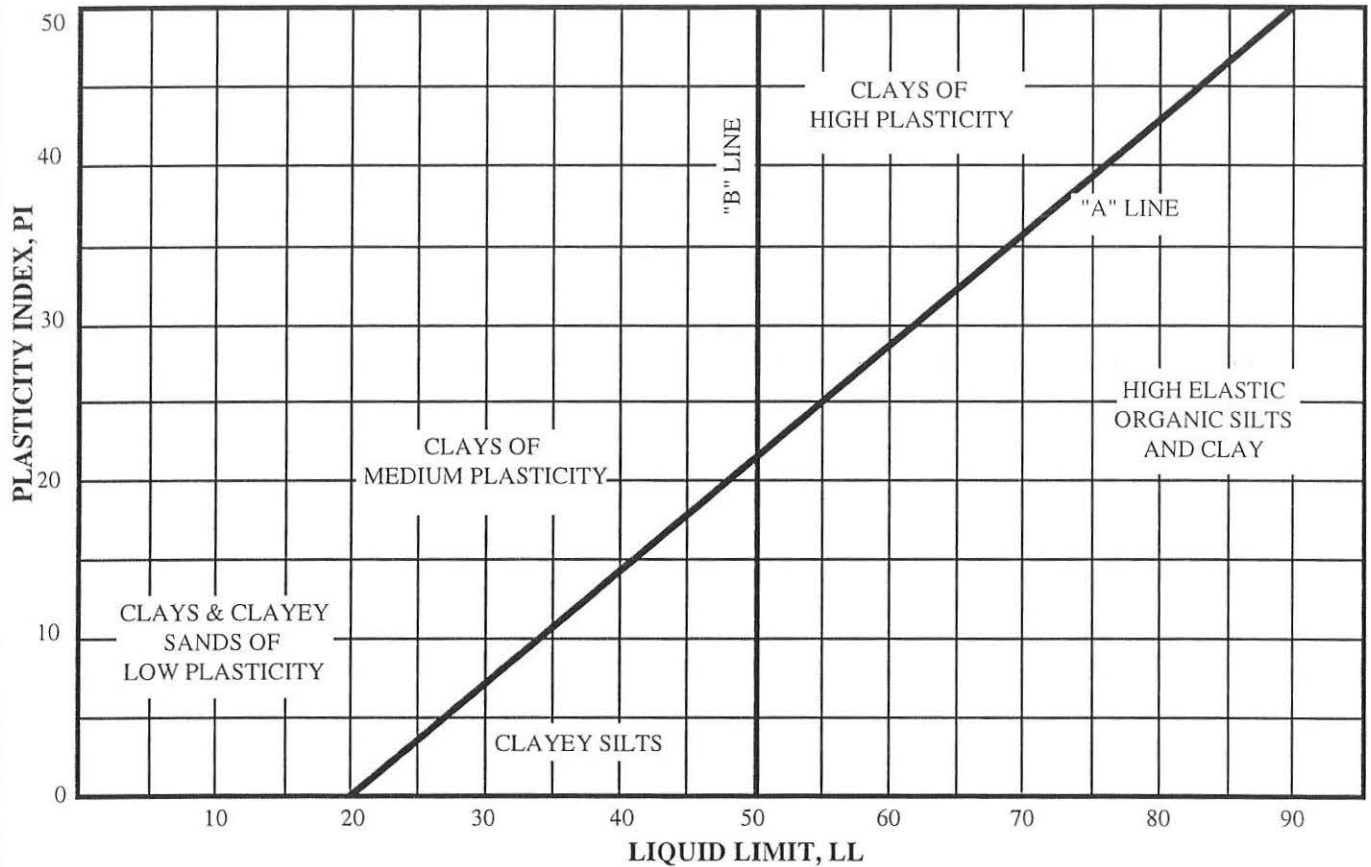


Queried contact between strata

GENERAL NOTES

- 1: Soil classifications are based on the Unified Soil Classification System. Descriptions and stratum lines are interpretive, and actual lithologic changes may be gradual. Field descriptions may have been modified to reflect results of lab tests.
- 2: Descriptions on these logs apply only at the specific boring locations and at the time the borings were advanced. They are not warranted to be representative of subsurface conditions at other locations or times.





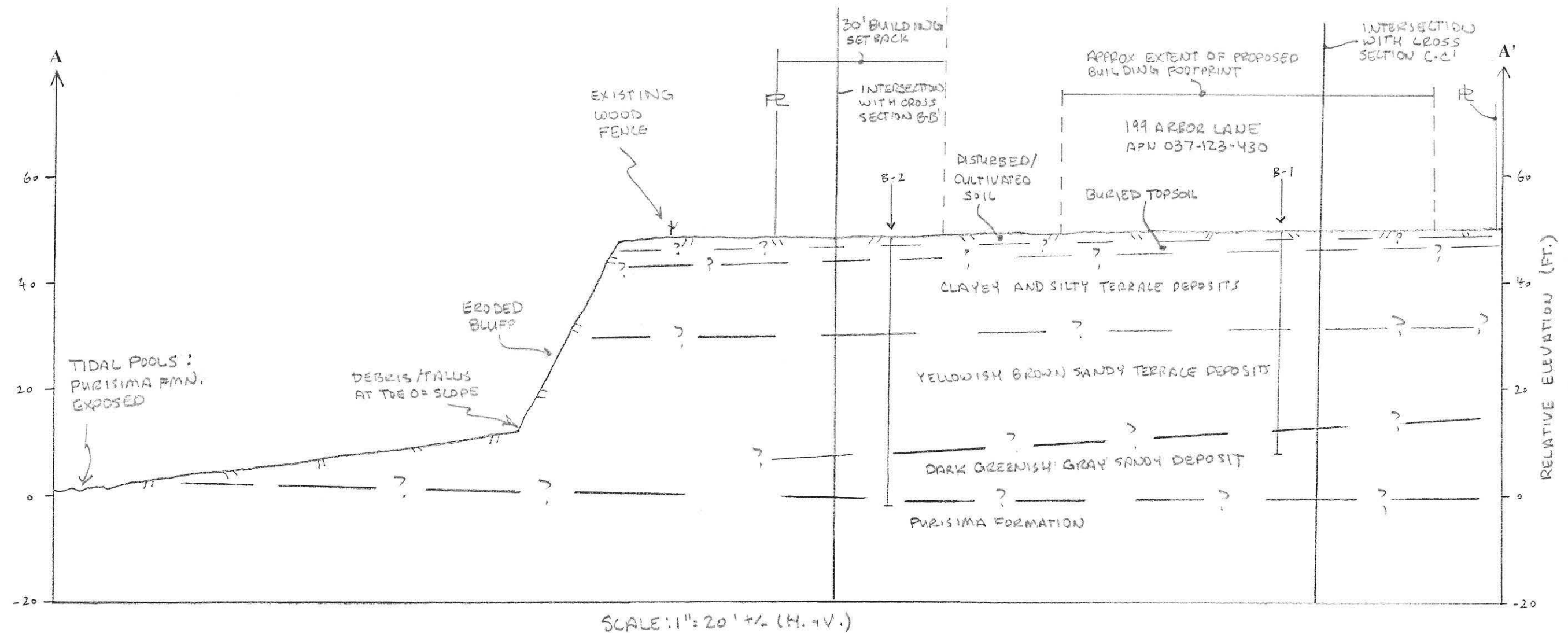
CLASSIFICATION TEST RESULTS								
SAMPLE IDENTIFICATION			ATTERBERG LIMITS			GRAIN SIZES % DRY WT.		
SAMPLE	LETTER DESIGNATION	DESCRIPTION	LIQUID LIMIT	PLASTICITY INDEX	SHRINKAGE LIMIT	SAND	SILT	CLAY
3-1	-	Dark yellowish brown to brown silty clayey fine sand with pebbles (Native Soil)	NON PLASTIC			-	-	-

PLASTICITY CLASSIFICATION



CROSS SECTION A-A'

Attachment M



* Existing topography based on topographic contours shown on a topographic survey of the site prepared by Lea & Braze Engineering, Inc., (Sheet SU1) titled, "199 Arbor Lane, Moss Beach, California," dated May 16, 2016.

CROSS SECTION A-A'*

199 Arbor Lane
Moss Beach, San Mateo County, California

Scale: 1"=20'± (H. & V.) Approved: J. M. Prepared By: D. F. & J. P.

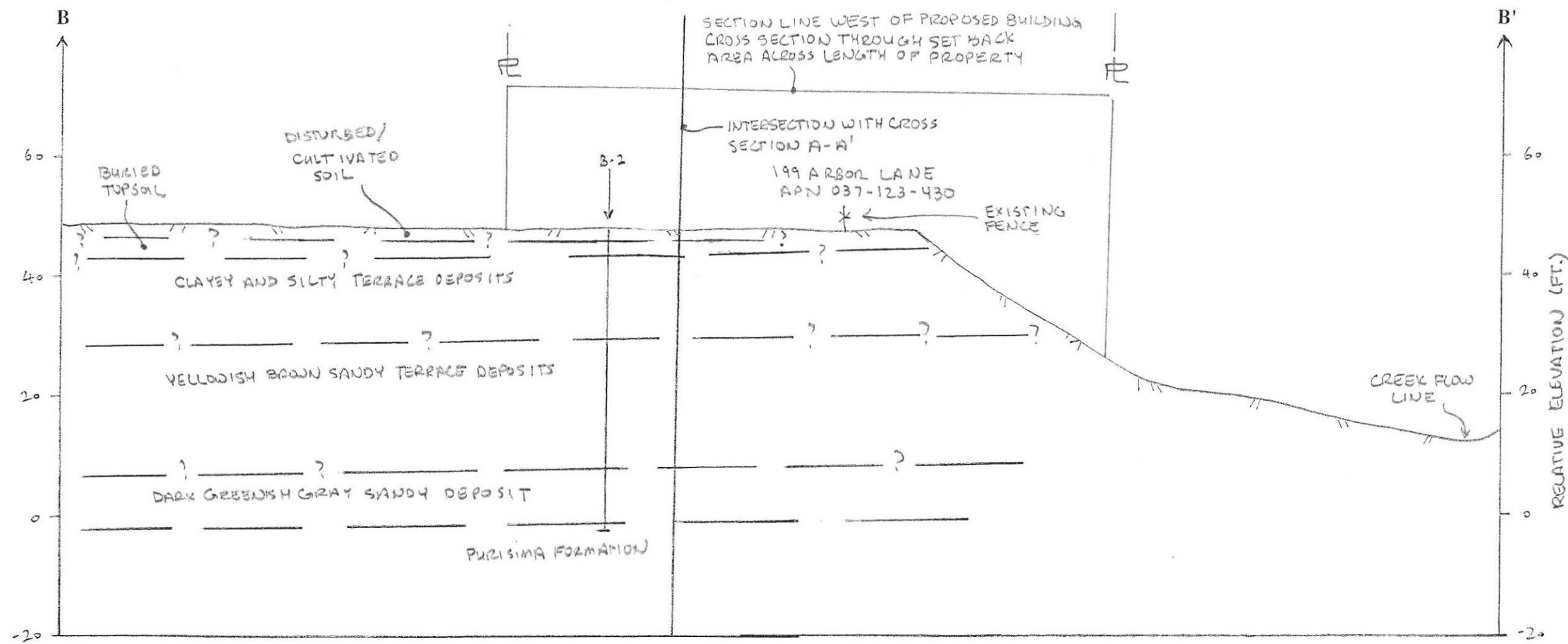
Date: 7-5-16 Revised:



Michelucci & Associates, Inc.

Job No. 16-4572 Figure 9

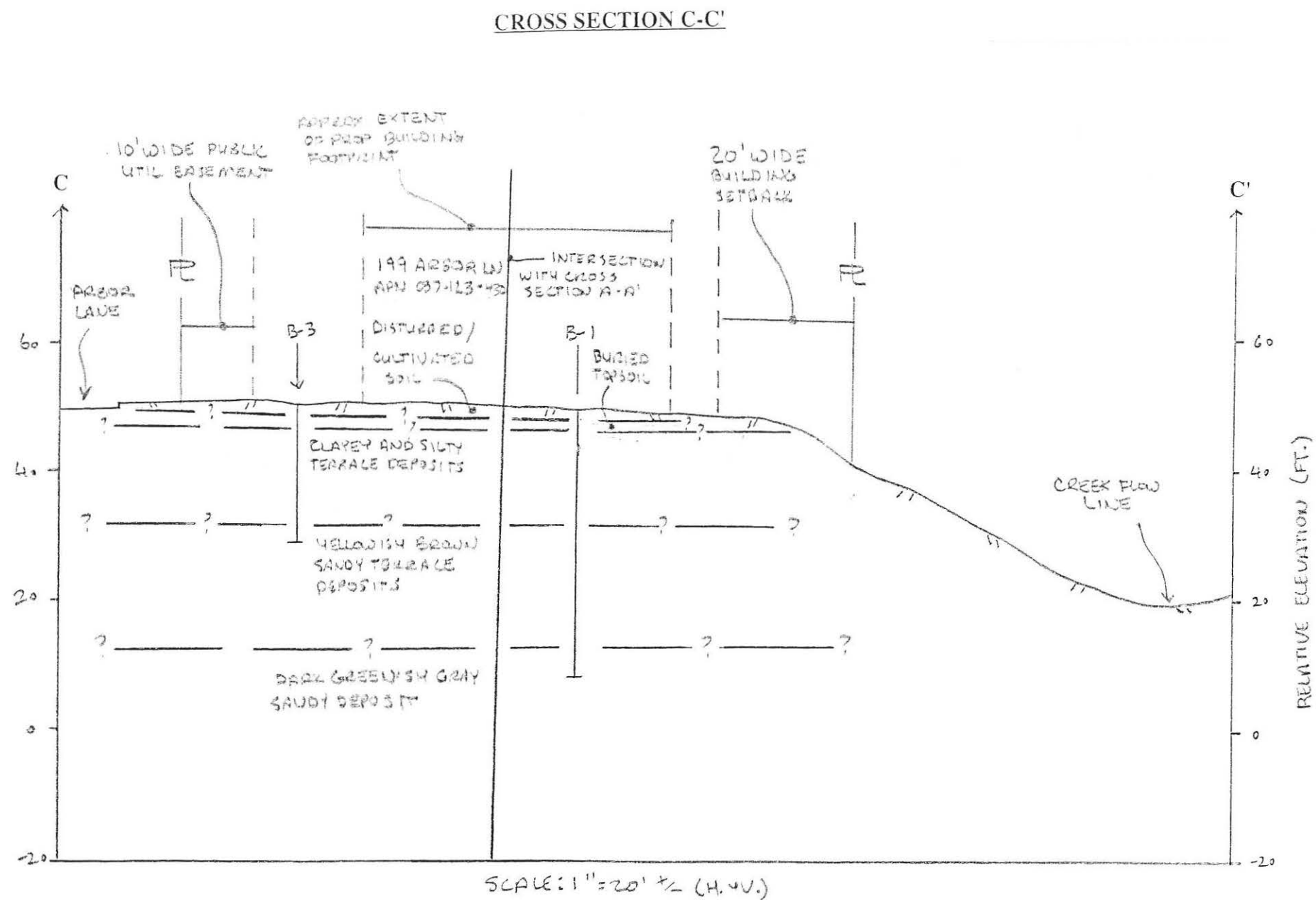
CROSS SECTION B-B'



SCALE: 1"=20' ± (H. & V.)

* Existing topography based on topographic contours shown on a topographic survey of the site prepared by Lea & Braze Engineering, Inc., (Sheet SU1) titled, "199 Arbor Lane, Moss Beach, California," dated May 16, 2016.

CROSS SECTION B-B'*		
199 Arbor Lane Moss Beach, San Matéo County, California		
Scale: 1"=20'± (H. & V.)	Approved: J. M.	Prepared By: D. F. & J. P.
Date: 7-5-16		Revised:
 Michelucci & Associates, Inc.		
Job No. 16-4572		Figure 10

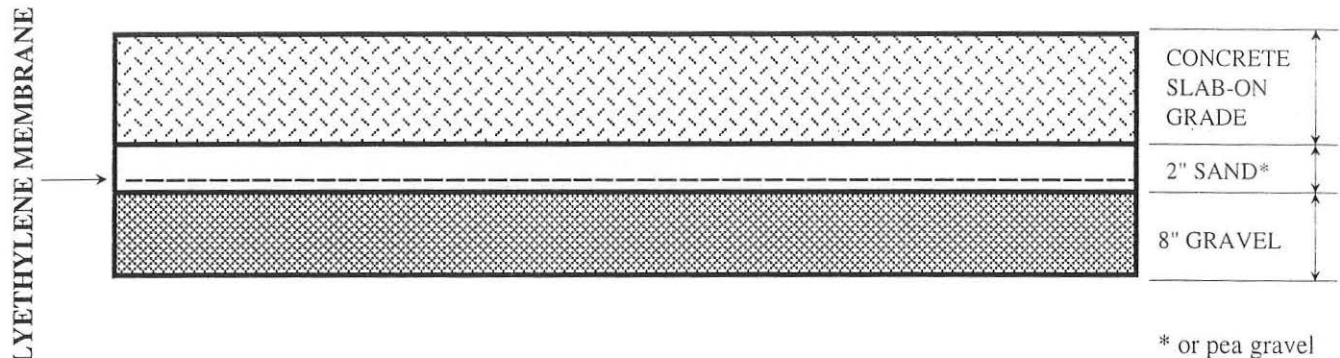


* Existing topography based on topographic contours shown on a topographic survey of the site prepared by Lea & Braze Engineering, Inc., (Sheet SU1) titled, "199 Arbor Lane, Moss Beach, California," dated May 16, 2016.

CROSS SECTION C-C'*		
199 Arbor Lane Moss Beach, San Mateo County, California		
Scale: 1"=20'± (H. & V.)	Approved: J. M.	Prepared By: D. F. & J. P.
Date: 7-5-16		Revised:
 Michelucci & Associates, Inc.		
Job No. 16-4572		Figure 11

MOISTURE RETARDANT BENEATH CONCRETE SLABS

TYPICAL SECTION



A. MATERIALS

The mineral aggregate for use under floor slabs shall consist of clean rounded gravel and sand. The aggregate shall be free from clay, organic matter, loam, volcanic tuff, and other deleterious substances.

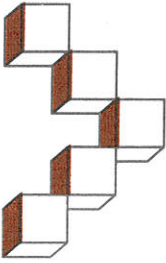
B. GRADATIONAL REQUIREMENTS

The mineral aggregate shall consist of such sizes that the percentage composition by dry weight as determined by laboratory sieve (U.S. Series) will conform to the following gradation:

Sieve Size	Percentage Passing	
	Gravel	Sand
1"	100	
3/4"	90-100	
No. 4	0-5	100
No. 50		0-30

NOTES:

1. The polyethylene membrane should be adequately thick so that it will not be easily damaged during construction. It should be adequately detailed so that there are little or no openings around plumbing at conduit points and near foundations. The membrane should be adequately lapped and sealed at any seams.
2. The sand covering is not a part of the moisture retardant treatment. It is a normally used optional component that gives some protection to the membrane and also aids in curing the concrete. Pea gravel may be used as a substitute for sand.
3. The final moisture retardant detail is to be determined by the project architect.



Michelucci & Associates, Inc.
Geotechnical Consultants

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August 29, 2017
Job No. 16-4572

Via e-mail: Carlos.zubieta@gmail.com

Carlos Zubieta Architect
Attn: Carlos Zubieta
1725-A Abbot Kinney Boulevard
Venice, CA 90291

Re: Geotechnical and Geologic Investigation Update
Proposed New Residence
Vacant Lot on Arbor Lane
APN# 037-123-430
Moss Beach, San Mateo County, California

Dear Mr. Zubieta:

INTRODUCTION

As authorized, we have prepared an update of our geotechnical and geologic investigation report dated July 6, 2016 pertaining to the site of the planned new residence on the currently vacant lot (APN #037-123-430) on Arbor Lane in Moss Beach, San Mateo County, California. The property is referred to as 199 Arbor Lane on various documents.

The purpose of our 2016 study was to provide general geotechnical recommendations and design criteria related to the new residence that is planned at the property. We also evaluated the geologic setting, as the site is located within a complex geologic area where active ocean bluff retreat is occurring immediately west of the property and a strand of the Seal Cove (San Gregorio) Fault is located immediately offshore west of the site. As discussed in our 2016 study, the primary geologic hazard to the site is coastal bluff retreat. In our opinion, although retreat of the ocean bluff occurred during the 2016-2017 winter, the project continues to be feasible from a geologic and geotechnical viewpoint, provided that the recommendations contained in the report are incorporated into the final plans and followed during construction.

SCOPE OF SERVICES

Our current services included:

- * Site inspections by our geotechnical and geologic personnel, Project Geologist John Petroff and Certified Engineering Geologist David F. Hoexter, conducted site inspections on July 13 and August 21, 2017; on August 21, 2017 we measured distances from a fixed/surveyed location shown on the 2016 topographic survey to the current top of cliff (bluff), for comparison to the location of the 2016 surveyed top of cliff;
- * Review of our previous investigation report;
- * Discussions with the architect Carlos Zubieta; and,
- * The preparation of this report.

DISCUSSION

Retreat of the ocean bluff face has occurred since issuance of our July 6, 2016 report. Otherwise, the site remains unchanged from the time of our 2016 investigation and field observations. A fence is located along the bluff top. During our July 13, 2017 site visit, we met a nearby property owner, Gaylen Eslinger, who confirmed the previously noted bluff retreat and indicated that he relocated the fence landward following the bluff retreat occurrence.

The slope down from the site to the Dean Creek drainage along the south side of the site remains visually unchanged (i.e. there does not appear to have been further erosion or retreat of the Dean Creek drainage side walls during the winter of 2016-2017).

Landward retreat of the ocean bluff occurred during the winter of 2016-2017. We measured the approximate retreat distance of the top of the bluff (identified as "top of cliff" on the May 16, 2016 topographic survey by Lea & Braze Engineering, Inc.). Our measurements consisted of taping the distance from a fixed point on the survey, (the street light located adjacent to the Arbor Lane cul-de-sac immediately adjacent to the subject property) to the top of the bluff. Our measurements were accomplished at 20-foot intervals initiated at the intersection of the two fences bordering the property near the south slope along Dean Creek and parallel to the ocean bluff, with the measurements progressing in a northerly direction essentially parallel to the bluff fence.

Our measurements indicate that the bluff retreated approximately 6 feet near the current southwest fence corner post, with a maximum of 11 feet retreat further north approximately 60 feet from the corner post. Due to possible differences in interpretation of the top of bluff location, and to the measurement method (a 200 foot tape), we consider our measurements to be accurate to a distance on the order of 1 to 2 feet.

CONCLUSIONS

Our July 2016 report discusses our calculation of the average bluff retreat rate at the site since 1866. Bluff retreat occurs episodically, taking place and then commonly not occurring for years until a subsequent episode occurs. In our opinion, the 2016-2017 bluff retreat is representative of past episodic events (in occurrence, not necessarily in magnitude), and our previous estimates of average annual rates and anticipated time until retreat reaches the planned residence are unchanged.

Therefore, the recommendations contained in our July 2016 report remain applicable and could be utilized during the preparation of design plans for the project.

LIMITATIONS

The conclusions and opinions expressed in this report are based upon our observations and measurements as described herein. While in our opinion these observations adequately disclose the conditions across the site, the possibility exists that abnormalities or changes in the soil conditions, which were not discovered by this evaluation, could occur.

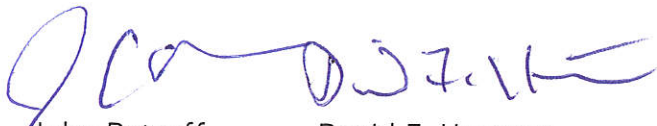
The passage of time may result in significant changes in technology, economic conditions, or site variations that could render this letter inaccurate. Accordingly, neither Carlos Zubieta Architect nor any other party shall rely on the information or conclusions contained in this letter after 12 months from its date of issuance without the express written consent of Michelucci & Associates, Inc. Reliance on this letter after such period of time shall be at the user's sole risk. Should Michelucci & Associates, Inc. be required to review the letter after 12 months from its date of issuance, Michelucci & Associates, Inc. shall be entitled to additional compensation at then-existing rates or such other terms as may be agreed upon between Michelucci & Associates, Inc. and Carlos Zubieta Architect.

This letter was prepared to provide engineering and geologic opinions and recommendations only. It should not be construed to be any type of guarantee or insurance.

CLOSING

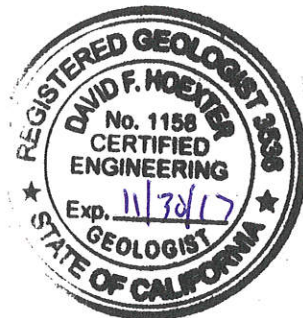
We are pleased to have been of service to you on this project, and will be available to review our findings with you and your other consultants at the earliest convenience.

Very truly yours,
MICHELUCCI & ASSOCIATES, INC.



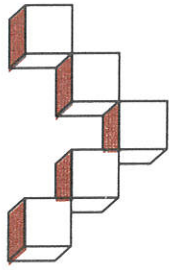
John Petroff
Project Geologist

David F. Hoexter
Certified Engineering Geologist #1158
(Expires 11/30/17)



Joseph Michelucci
Geotechnical Engineer #593
(Expires 3/31/19)





Michelucci & Associates, Inc.
Geotechnical Consultants

Joseph Michelucci, G.E.
joe@michelucci.com

Richard Quarry
rich@michelucci.com

November 22, 2017
Job No. 16-4572

via e-mail: Carlos.zubieta@gmail.com

Carlos Zubieta Architect
Attn: Carlos Zubieta
1725-A Abbot Kinney Boulevard
Venice, CA 90291

Re: Response to Steven R. King, Ph.D. October 22, 2017 Memo
Proposed New Residence
Vacant Lot on Arbor Lane
APN# 037-123-430
Moss Beach, San Mateo County, California

Dear Mr. Zubieta:

INTRODUCTION

As authorized, we have prepared a response to the October 22, 2017 memo prepared by Steven R. King, Ph.D. Dr. King's memo comments on various matters related to the planned new residence on the currently vacant lot (APN #037-123-430) on Arbor Lane in Moss Beach, San Mateo County, California. The property is referred to as 199 Arbor Lane on various documents, and also as Lot 12. Specifically, Dr. King provides comments on our August 29, 2017 geotechnical and geologic investigation update letter.

Our initial, 2016, geotechnical and geologic investigation provided geotechnical recommendations and design criteria related to the new residence that is planned at the property, and also evaluated the geologic setting, including fault rupture potential and active ocean bluff retreat occurring immediately west of the property and (to a lesser extent), creek bluff erosion occurring immediately south of the property. Our August 29, 2017 update documented the 2016-2017 ocean bluff retreat and concluded that, although retreat of the ocean bluff occurred during the 2016-2107 winter, the project continues to be feasible from a geologic and geotechnical viewpoint.

Page 2
November 22, 2017
Job No. 16-4572

DISCUSSION

This discussion follows the order of Dr. King's memo.

1a. Dr. King notes the occurrence of "errors". While Dr. King may disagree with our observations and conclusions, he does not substantiate any "errors". Dr. King initially refers to and takes out of context our use of the term "does not appear" in regards to our discussion of the slope down from the site into the Dean Creek drainage; however, he ignores the preceding phrase "the site remains visually unchanged", which is clear and without equivocation. The full sentence is:

*The slope down from the site to the Dean Creek drainage along the south side of the site remains **visually unchanged** (i.e. there **does not appear** to have been further erosion or retreat of the Dean Creek drainage side walls during the winter of 2016-2017).*

Note, we have added the **bolding** (above) to our initial phrasing.

1b. Dr. King states that we are incorrect in our assessment of the site remaining visually unchanged, in that he observed that the slope is "more deeply concave ... due to undercutting" following the 2016/2017 winter. However, we noted no new undercutting at the toe of the slope, along the slope, or at the top of the slope (or "cliff face/bluff top" as termed by Dr. King). We descended the slope at one location from the adjacent flat property, and also observed the slope from The Strand on the opposite side of the drainage. There were no fresh indications of erosion or undercutting of the soil face, and vegetation was essentially as it had appeared prior to the 2016/2017-winter season. Further, Dr. King claims that the top of the slope is eroding due to its southern exposure with wind and rain causing erosion at the top of the "cliff". However, this location is protected by trees, and the ground surface is not or is only minimally exposed to either wind or direct rainfall. Further, there were no indications following the 2016/2017 winter of erosion along the toe of the slope within the Dean Creek drainage.

1c. The memo uses the terms "near vertical wall" and "cliff face" for the slope adjacent to Dean Creek. These terms are inflammatory and inaccurate. In fact, this is a slope of varying inclinations ranging from locally nearly vertical over short distances to accessible by foot, as is shown on our cross sections B-B' and C'C' in our July 6, 2016 report.

1d. Dr. King refers to fallen trees, erosion, and water flow in his photos #1A and 1B, with the implication that they depict recent storm events. These photos do indicate these occurrences; however, they appear to be a number of years old (apparently obtained at the same as other photos included in the memo, which appear to be from 1994 and 1998), and do not reflect recent (2016-2017) conditions. We have included with this letter photos we took from The Strand on April 12, 2016 and July 14, 2017 of what appears to us to be the same locations as Dr. King's photos. There are no indications of erosion or bluff retreat between the time of Dr. King's photos and our April 2016 photos (prior to the 2016/2017 winter), or between our April 2016 photos and our July 2017 photos (after the 2016/2017 winter).

2a. The King memo refers to some documents obtained from a California Coastal Commission file. Only excerpts are included in the memo, so we do now know what was excluded or taken out of context. Dr. King discusses the bluff erosion along Lot 10 (now protected by ocean front armoring), and seems to imply a similarity in conditions with the subject, Lot 12. However, Lot 10 is located along the ocean bluff where the retreat rate is more significant than along the creek bluff adjacent to Lot 12.

2b. The memo refers to the 1974 consultant author using the term "cliff top". The 1974 consultant's use of this term does not make it correct or appropriate.

2c. We note that the 1974 "projected top of cliff after 50 years" (Dr. King's photos 2D and 2E) proved to be overly conservative, particularly along the ocean bluff and to a lesser extent along the creek bluff. In reality, the 1974 report predicted almost no creek bluff recession and assuming the accuracy of the 1974 report, the Dean Creek slope base and top appear essentially unchanged in the intervening 43 years.

3. The King memo refers to various 1997 documents related to the then proposed and currently present well. The county at that time required a 50-foot setback from the "creek bluff top edge" (June 4, 1997 letter), in lieu of a geotechnical investigation being performed to rationalize a lesser setback. The owner chose to locate the well at the 50-foot setback as opposed to (presumably) the expense of an unnecessary geotechnical investigation required to reduce the setback. It is not clear, but the 50-foot distance appears to derive from a county regulation, which is generalized and in no way reflects site-specific calculations or conditions. What is clear is that this 50-foot distance in no way applies to the current site specific conditions.

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November 22, 2017
Job No. 16-4572

CONCLUSIONS

In summary:

1. While the Dean Creek slope is relatively steep, objections to the proposed residence location based solely on steepness are inapplicable. Of importance is the rate of retreat, and there are no indications that the past or potential Dean Creek slope retreat rate will imperil the proposed residence.
2. Significant erosion along the Dean Creek slope during the winter of 2016-2017 does not appear to have occurred.
3. Comparison of the 1974 Lowney Kaldveer figure with the recent site topographic survey and with the site as recently viewed indicates that little to no recession of the creek bank top occurred during the intervening years along the Dean Creek bluff.
4. The 50-foot setback from Dean Creek for the well location has no bearing on any Dean Creek setback for the proposed residence.

CLOSING

We are pleased to have been of service to you on this project, and will be available to review our findings with you and your other consultants at the earliest convenience.

Very truly yours,
MICHELUCCI & ASSOCIATES, INC.



David F. Hoexter
Certified Engineering Geologist #1158
(expires 11/30/19)



Joseph Michelucci
Geotechnical Engineer #593
(expires 3/31/19)



Attached: Photographs 1 and 2.

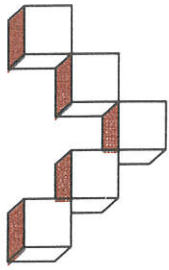
Page 5
November 22, 2017
Job No. 16-4572



Photo 1: View from The Strand, April 12, 2016



*Photo 2: View from The Strand, same apparent location on July 13, 2017
as King January 1998 (?) Photos 1A and 1B.*



Michelucci & Associates, Inc.
Geotechnical Consultants

Joseph Michelucci, G.E.
joe@michelucci.com

Richard Quarry
rich@michelucci.com

November 21, 2017
Job No. 17-4694

via e-mail: justinsmith@gmail.com

Justin Smith
680 Los Palmos Drive
San Francisco, CA 94127

Re: Review of Structural Plans and Calculations
Proposed Addition Foundation Upgrade
680 Los Palmos Drive
San Francisco, California

Dear Mr. Smith:

As authorized, we have reviewed the structural plans and calculations for the addition foundation upgrade project at 680 Los Palmos Drive in San Francisco, California. We reviewed sheets S1 through S4 of the structural plans prepared by FAR Associates Engineers, dated November 10, 2017. We were also provided with the structural calculations that were the basis for the plans.

The purpose of our review was to verify that the plans were done in general accordance with standard geotechnical practices and that they were done in general accordance with our recommendations for the project.

The general notes section found on sheet S1 references our geotechnical report (dated July 10, 2017) for the project. The foundation plan on sheet S1 indicates that the addition is to be supported upon 18-inch diameter drilled piers and several hand-dug interior supports. Detail 1 on S4 indicates that the piers are to extend 4 feet minimum or 12 inches into bedrock, whichever is deeper. Detail 3 on sheet S4 indicates that the 3 isolated interior posts beneath the addition are to extend a minimum of 12 inches into the ground (which will likely be entirely into hard bedrock).

Attachment O

Sheet S1 also indicates that a foundation retrofit will also be performed at the right-front corner of the structure, where a new steel frame system set atop a 24-inch drop concrete footing that spans the length of the steel framing will be constructed. We should point out that at the time of our study, we were not aware that any work was planned along the front of the residence. When the footing is excavated for the retrofit portion of the project at the right-front corner of the structure, we should evaluate the material that is exposed at the base of the excavation. If additional geotechnical recommendations are needed because the exposed material is deemed to be weak, we could make them at that time.

In our opinion, the structural plans and calculations generally appear to be well founded and were completed in accordance with good standard geotechnical practices. It is important that we be contacted to provide observation services during the geotechnical aspects of construction, which include, but not be limited to, the foundation excavations along the front and rear of the residence and any drainage installation and any other geotechnical items of work related to the project.

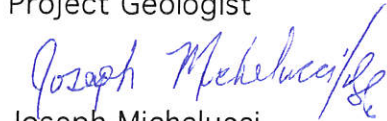
It should be noted that our review was confined to geotechnically relevant items that are contained on the plans only. We do not review portions of the plans that do not relate to our recommendations .

It is a pleasure working with you on this project. If you have any questions or comments, please feel free to contact our office.

Very truly yours,
MICHELUCCI & ASSOCIATES



John Petroff
Project Geologist



Joseph Michelucci
Geotechnical Engineer #593
(Expires 3/31/19)



Cc: FAR Associates, Engineers: Attn, Fernando Rivera (via email: info@farengineers.com)

Attachment P

From: David Hoexter [mailto:david@hoexterconsulting.com]

Sent: Friday, April 20, 2018 12:17 PM

To: carlos@cz-a.net

Cc: Carmelisa Morales <CJMorales@smcgov.org>; tatiana@verdego.net; Lauren Smolenski <lauren@cz-a.net>; Joe Michelucci1 <joe@michelucci.com>; John Petroff/Michelucci <john@michelucci.com>

Subject: Re: 199 Arbor Lane

Further comments:

1. The tsunami runup (bore) as shown on the figure would be a very low volume with low energy level, resulting only if the adjacent Dean's Creek channel were to completely fill. The impact to the proposed residence would be minimal.
2. As to whether the project would cause inundation by seiche, tsunami or mudflow: seiche and mudflow are not a hazard at this location. The only scenario I can imagine for the project causing inundation by tsunami would be if it blocked a narrow flow channel which resulted in adjacent tsunami flow being forced around the obstruction at a higher elevation than if the channel was not blocked. The proposed project sits atop a wide flat area; any postulated tsunami flow at this location would be minimal in volume to begin with, and would flow around the structure but the height of the flow would not be increased significantly due to the ample available space to accommodate the flow around the structure.

David F. Hoexter

Registered Environmental Assessor (REA)
Professional Geologist (PG)
Certified Engineering Geologist (CEG)

Hoexter Consulting, Inc.
734 Torrey Ct, Palo Alto, Ca 94303
Ph: 650-494-2505
Email: hoexterconsult@mindspring.com

National Flood Hazard Layer FIRMette



FEMA

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes, Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The base map shown complies with FEMA's base map accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/17/2018 at 4:46:00 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: base map imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Attachment Q

BERRY & ASSOCIATES1733 WOODSIDE ROAD, SUITE 335
REDWOOD CITY, CA 94061△ REV. PER
CO. COMMENTS
12/21/16

①

JOB # 3070

SEP 22 2017

△ REV PER NEW
SITE PLAN 8-24-17San Francisco
Planning and Building DepartmentDRAINAGE REPORT - 199 ARBOR LANE
MOSS BEACH, CA1. EXISTING CONDITION - VACANT LANDTHE DRAINAGE AREA INCLUDESUNDEVELOPEDLOT(SEE EXHIBIT A)EXIST AREA = 14,320 SF (0.329 ACRES)2. TO ACCOMMODATE THE PROPOSED HOUSE, DRIVEWAY
AND LANDSCAPE FEATURES AND MAINTAIN
PRE-CONSTRUCTION RUNOFF LEVELS, THE
FOLLOWING SYSTEM IS PROPOSED:COLLECTION OF ROOF AND
SURROUNDING HARDSCAPE IN A
TIGHT-LINE SYSTEM CONNECTED TO
AN ON-SITE RETENTION FACILITY WITH AN
ENERGY REDUCTION BOX AND CLEANOUT,
AS WELL AS AN OVERFLOW PIPE3. THE RATIONAL BEHIND THIS SYSTEM
DESIGN IS THAT INCREASED RUNOFF
FROM THE PROPOSED DEVELOPMENT (100-
YEAR STORM EVENT) OVER THE EXISTING
(UNDEVELOPED) RUNOFF (10-YEAR STORM EVENT)
WILL BE CAPTURED, STORED, AND

ALLOWED TO INFILTRATE INTO THE SUBGRADE.

IN THE EVENT OF INTENSE (GREATER THAN A 100-YEAR STORM) RUNOFF, THE OVERFLOW WILL BUBBLE OUT AND DISSIPATE WITHIN THE FLAT AREA AT THE WEST SIDE OF THE SITE (SEE EXHIBIT C)

RUNOFF WILL BE FURTHER REDUCED WITH A PERVIOUS DRIVEWAY ALLOWING DIRECT INFILTRATION INTO THE SOIL.

4. USING THE RATIONAL METHOD ($Q = CIA$) TO CALCULATE PRE AND POST-CONSTRUCTION RUNOFF:

(2) EXIST. CONDITION (SEE EXHIBIT A)

DRAINAGE AREA, $A = 14,320 \text{ SF}$
 $= 0.329 \text{ ACRES}$

INTENSITY = $I_{10}(F)$ - SEE SM CO I-D-F CHART

FOR 10-YEAR STORM (EXHIBIT B)

$I_{10} = 2.05 \text{ IN/HR}$, $F = 1.3$

$C_{\text{EXIST}} = \text{RUNOFF COEFF.}$

WHERE, VACANT LAND
 $= 0.35$

AND

$$Q_{\text{EXIST}} = C_{\text{EXIST}} I_{10}(F) A$$

$$= 0.35(2.05)(1.3)(0.329)$$

$$Q_{\text{EXIST}} = 0.307 \text{ CFS}$$

(b) PROPOSED CONDITION (EXHIBIT C)

$$A = 14,320 \text{ SF } (0.329 \text{ ACRES})$$

(SEE EXHIBIT B) $I_{100} = 3.00 \text{ IN/HR}$, $F = 1.3$ $C_{\text{PROP}} = \text{RUNOFF COEFF. WHERE}$

$$\text{PROPOSED ROOF} = 2510 \text{ SF}$$

$$\text{PROPOSED HARDSCAPE} = 1430 \text{ SF} \quad \Delta$$

$$\text{PROPOSED LANDSCAPE} = 10,380 \text{ SF}$$

$$C_{\text{ROOF}} = 0.95 (2510/14320) = 0.167$$

$$C_{\text{HARD}} = 0.85 (1430/14320) = 0.085$$

$$C_{\text{LAND}} = 0.35 (10380/14320) = 0.254$$

$$C_{\text{PROP}} = 0.506 \quad \Delta$$

$$Q_{\text{PROP}} = C_{\text{PROP}} I_{100} F A$$

$$= 0.506 (3.00) (1.3) (0.329)$$

$$Q_{\text{PROP}} = 0.649 \text{ CFS} \quad \Delta$$

(c) THE CHANGE IN RUNOFF IS

$$Q_A = Q_{\text{PROP}} - Q_{\text{EXIST}}$$

$$= 0.649 - 0.307$$

$$Q_A = 0.342 \text{ CFS} \quad \Delta$$

△ REV. PER CO
COMMENTS
12/21/16

△ REV PER
NEW SITE PLAN
8-24-17

④

5. EXCESS DRAINAGE (Q_A) WILL BE CAPTURED AND RETAINED IN AN ON-SITE PERFORATED PIPE (48" DIAM.) WITH AN ACCESS CLEANOUT AND A STABILIZED OVERFLOW.

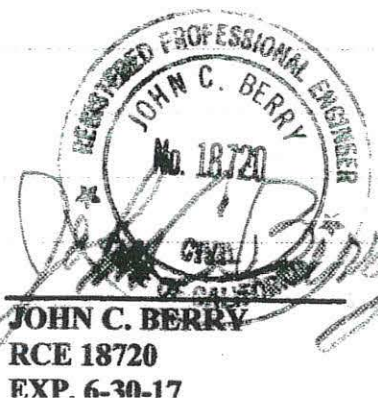
FOR A 100-YEAR STORM OF 15-MINUTE DURATION, THE EXCESS RUNOFF IS

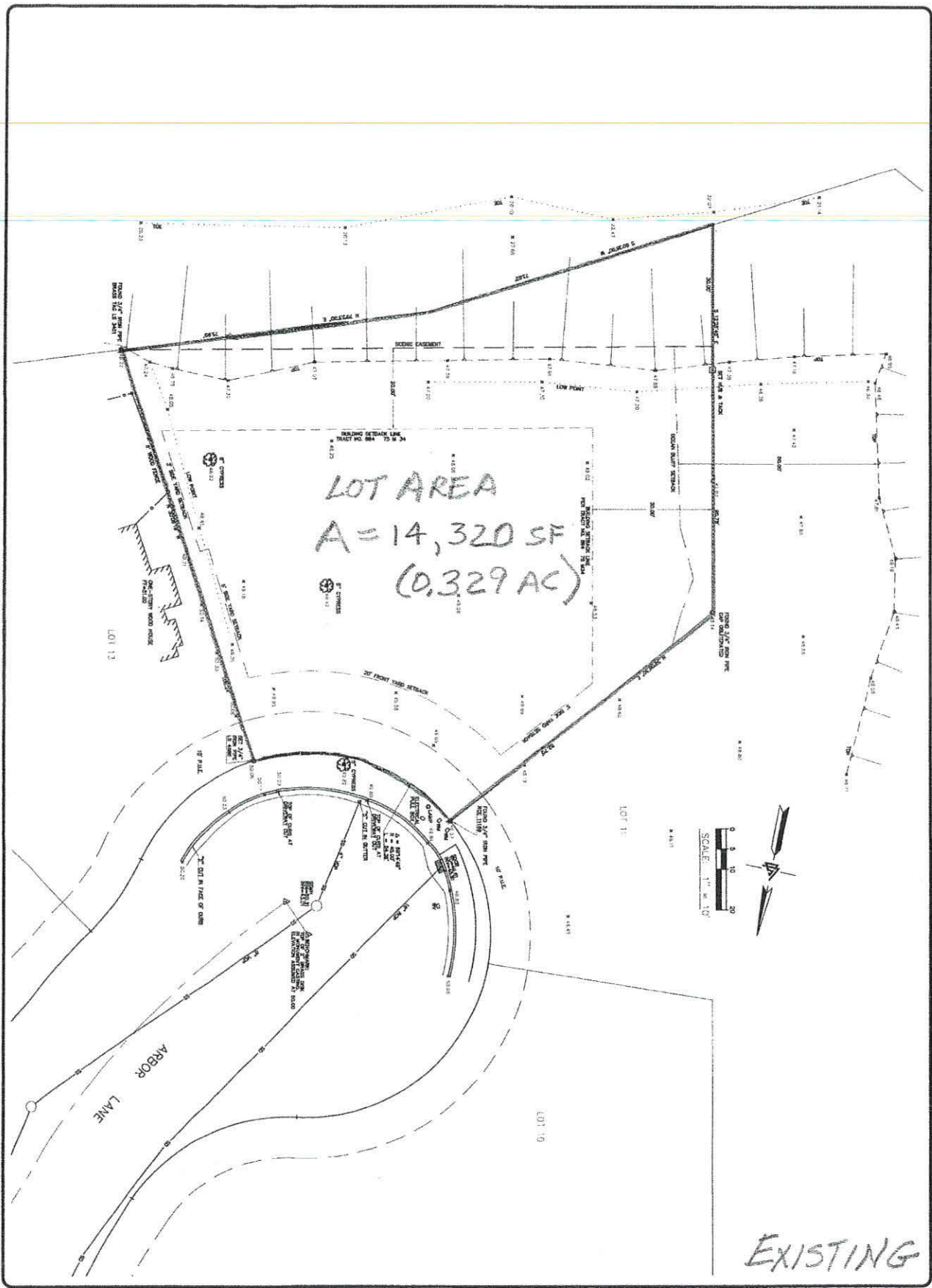
△
$$Q_A \times 15 \text{ MIN} \times 60 \text{ SEC}$$

$$\therefore 0.342 \times 900 = \underline{307.8 \text{ CF}}$$

24.5 LF OF 48" PERF. PIPE
WILL STORE 308 CF
 $\therefore$ OK

△ A CONTROLLED (STABILIZED) OVERFLOW FROM THE ENERGY REDUCTION PIPE WILL ALLOW INTENSE STORM RUNOFF TO DISSIPATE WITHIN THE REAR YARD AREA
 △ (SEE EXHIBIT C)





Date 8-9-1987
Drawn By JMS
Job No. 8741
Sheet 1 of 1

TOPOGRAPHIC SURVEY

FOR EUGENE BARHAR
199 ARBOR LANE
MOSS BEACH

SAN MATEO COUNTY

CALIFORNIA

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS - LAND SURVEYORS
26229 EDEN LANDING ROAD, SUITE 2
HAYWARD, CALIFORNIA 94545
(510) 887-4255
FAX (510) 887-3019

EXHIBIT A

RAINFALL RUNOFF DATA

SAN MATEO COUNTY

CALIFORNIA

R.L. SANS, DIRECTOR
PUBLIC WORKS DEPARTMENT

199
ARBOR LANE

F = 1.3



RAINFALL		
TIME OF CONCENTRATION	INTENSITY INCHES PER HOUR	
HRS. MIN.	10 YR.	100 YR.
0-5	2.45	3.60
0-15	2.05	3.00
0-20	1.73	2.55
0-25	1.50	2.22
0-30	1.33	1.95
0-35	1.20	1.75
0-40	1.10	1.61
0-45	1.02	1.49
0-50	0.95	1.37
0-55	0.90	1.28
1-00	0.86	1.21
1-15	0.75	1.07
1-30	0.67	0.95
1-45	0.61	0.87
2-00	0.56	0.80
2-30	0.49	0.70
3-00	0.44	0.63
3-30	0.40	0.57
4-00	0.37	0.53
4-30	0.34	0.49
5-00	0.32	0.45
6-00	0.29	0.41
7-00	0.26	0.38
8-00	0.24	0.35
9-00	0.23	0.33
10-00	0.21	0.30
12-00	0.19	0.27
24-00	0.13	0.18

RUNOFF COEFFICIENTS	
TYPE OF DEVELOPMENT	COEF.
PARKS AND CEMETERIES	0.30
RESIDENTIAL - ACRES	0.40
RESIDENTIAL - REGULAR	0.50
INDUSTRIAL	0.65
COMMERCIAL	0.75
PAVED AREAS	0.85

RATIONAL FORMULA

$$Q = C I A F$$

- Q = RUNOFF - CUBIC FEET PER SECOND
C = RUNOFF COEFFICIENT - PERCENT
I = RAINFALL INTENSITY - INCHES PER HOUR
A = DRAINAGE AREA - ACRES
F = INTENSITY FACTOR (FOOT-CAUSE)

Dr. 22-1846

EXHIBIT B

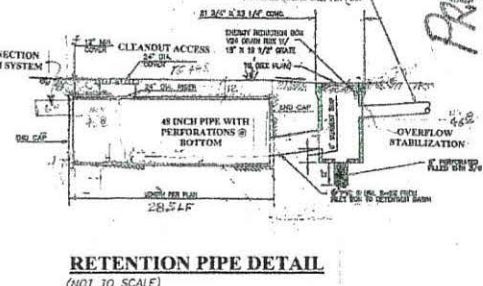
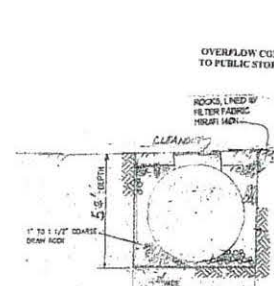
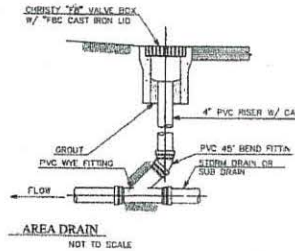


Attachment R

REV
PER NEW
SITE
PLAN
8-24-17

* EXCLUDES
PERVIOUS
DRIVEWAY

HOUSE - 2510 SF
HARDSCAPE - 1430 SF
OPEN - 10,380 SF
TOTAL - 14,320 SF
(A)



GENERAL NOTES:

1. RAIN WATER LEADERS SHALL BE CONNECTED TO STORM DRAIN SYSTEM, UNLESS OTHERWISE NOTED.
2. ALL MATERIALS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
3. WHEN APPLICABLE, ALL CONSTRUCTION MATERIALS AND METHODS SHALL COMPLY WITH THE ORDINANCES, SPECIFICATIONS AND STANDARDS OF THE COUNTY OF SAN MATEO, UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (U.S.A.) PRIOR TO START OF CONSTRUCTION, PHONE (800) 227-2800.
5. UNLESS OTHERWISE SPECIFIED, ALL STORM DRAIN PIPES SHALL BE P.V.C. SDR 35 PER ASTM D5334 WITH BELL AND SPIGOT RUBBER GASKET JOINTS OR BETTER.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISTRIBUTING ANY EXCESS MATERIAL OR SURPLUS MATERIAL FOR DISPOSITIONS TO BRING DRIVEWAY AND BUILDING PADS TO REQUIRED GRADE.
7. UTILITIES AND UNDERGROUND FACILITIES INDICATED ARE FOR INFORMATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND DEPTH WITH THE APPROPRIATE AGENCIES. NEITHER THE OWNER NOR THE CITY OR THE ENGINEER ASSUMES RESPONSIBILITY THAT THE UTILITIES AND UNDERGROUND FACILITIES INDICATED WILL BE THE UTILITIES AND UNDERGROUND FACILITIES INDICATED.
8. THE CONTRACTOR IS RESPONSIBLE FOR WATCHING EXISTING SURROUNDING LANDSCAPE AND OTHER IMPROVEMENTS WITH A SMOOTH TRANSITION IN PAVING, GRADING, ETC., AND TO AVOID ABRUPT OR APPARENT CHANGES OR CHANGES IN SLOPE, JOBS OR HAZARDOUS CONDITIONS.
9. STORM DRAIN SHALL BEGIN FROM THE DOWNSTREAM POINT OF CONNECTION. NOTIFY THE ENGINEER IF THERE IS A DISCREPANCY IN INVERT ELEVATIONS BETWEEN ACTUAL AND AS SHOWN ON PLAN.
10. THE APPLICANT / CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT FROM THE COUNTY'S ENGINEERING DIVISION PRIOR TO COMMENCING ANY WORK IN COUNTY'S RIGHT-OF-WAY.
11. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR ALL WORK SHOWN ON THIS PLAN.

RE	ROOF LEADER
AD	DIRECTION OF SURFACE FLOW
TD	AREA DRAIN
TO	TOP OF GRATE ELEVATION
INV	PIPE INVERT ELEVATION
EX	EXISTING
FS	FINISH SURFACE ELEVATION

TOPOGRAPHIC SURVEY
LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS - LAND SURVEYORS
28229 EDEN LANDING ROAD, SUITE 2
HAYWARD, CALIFORNIA 94545
(510) 887-4000
FAX (510) 887-3019

BERRY & ASSOCIATES
1733 WOODSIDE CITY, SUITE 335
REDWOOD CITY, CA 94061
PHONE: 650/368-0750 FAX: 650/368-1810

PRIMINARY
SITE GRADING, DRAINAGE & UTILITY PLAN
199 ARBOR LANE
MOSS BEACH, CA

DRAWN BY:
DESIGNED BY:
CHECKED BY:
SCALE:
DATE:
DRAWING NO.:
SHEET
C-1 OF 1

JOHN C. BERRY
RCE 18728
EXP. 6-30-17

PRIMINARY

PROPOSED

EXHIBIT C

Attachment R



C.3 and C.6 Development Review Checklist

Municipal Regional Stormwater Permit (MRP)
Stormwater Controls for Development Projects

COUNTY OF SAN MATEO
Planning & Building Department
455 County Center, 2nd Floor
Redwood City, CA 94063
BLD: 650-599-7311/PLN: 363-1825

*Applicants: This form should be filled out by the Project Civil Engineer, if one is associated with the project.
Office Use: Planners, please scan to Accela Case and email to Diana, Richard and Camille.*

Project Information

I.A Enter Project Data (For "C.3 Regulated Projects," data will be reported in the municipality's stormwater Annual Report.)

Project Name: ARBOR RESIDENCE Case Number: _____
Project Address & Cross St.: 199 ARBOR LANE
Project APN: 037-123-430 Project Watershed: SAN VICENTE
Applicant Name: BERRY AND ASSOCIATES I.A.4 Slope on Site: %
Applicant Phone: (650) 400-9003 Applicant Email Address: BERRYANDASSOCIATES@GMAIL.COM
Development type: (check all that apply)
☒ Single Family Residential: A stand-alone home that is not part of a larger project.
☐ Single Family Residential: Two or more lot residential development.¹ # of units: _____
☐ Multi-Family Residential # of units: _____
☐ Commercial
☐ Industrial, Manufacturing
☐ Mixed-Use # of units: _____
☐ Streets, Roads², etc.
☐ 'Redevelopment' as defined by MRP: creating, adding and/or replacing exterior existing impervious surface on a site where past development has occurred.
☐ 'Special land use categories' as defined by MRP: (1) auto service facilities³, (2) retail gasoline outlets, (3) restaurants, (4) uncovered parking area (stand-alone or part of a larger project)
☐ Institutions: schools, libraries, jails, etc.
☐ Parks and trails, camp grounds, other recreational
☐ Agricultural, wineries
☐ Kennels, Ranches
☐ Other, Please specify _____

I.A.1

Project Description⁴:
(Also note any past or future phases of the project.)

NEW SINGLE-FAMILY RESIDENCE
ON VACANT LOT

I.A.2 Total Area of Site: 0.329 acres

I.A.3 Total Area of land disturbed during construction (include clearing, grading, excavating and stockpile area): 0.22 acres.

I.A.5 Certification:

I certify that the information provided on this form is correct and acknowledge that, should the project exceed the amount of new and/or replaced impervious surface provided in this form, the as-built project may be subject to additional improvements.

☐ Attach Preliminary Calculations ☐ Attach Final Calculations ☒ Attach copy of site plan showing areas (EXHIBITS A & B)
Name of person completing the form: JOHN C. BERRY Title: PROJECT CIVIL ENGR
Signature: [Signature] Date: 8-24-17
Phone number: (650) 400-9003 Email address: BERRYANDASSOCIATES@GMAIL.COM

¹ Common Plans of Development (subdivisions or contiguous, commonly owned lots, for the construction of two or more homes developed within 1 year of each other) are not considered single family projects by the MRP.

² Roadway projects creating 10,000 sq.ft. or more of contiguous impervious surface are subject to C.3 requirements if the roadway is new or being widened with additional traffic lanes.

³ See Standard Industrial Classification (SIC) codes [here](#)

⁴ Project description examples: 5-story office building, industrial warehouse, residential with five 4-story buildings for 200 condominiums, etc.

C.3 and C.6 Development Review Checklist

I.B Is the project a "C.3 Regulated Project" per MRP Provision C.3.b?

I.B.1 Enter the amount of impervious surface⁵ Retained, Replaced and/or Created by the project:**Table I.B.1 Impervious⁵ and Pervious Surfaces**

Type of Impervious ⁵ Surface	I.B.1.a Pre-Project Impervious ⁵ Surface (sq.ft.)	I.B.1.b Existing Impervious ⁵ Surface to be Retained ⁶ (sq.ft.)	I.B.1.c Existing Impervious ⁵ Surface to be Replaced ⁶ (sq.ft.)	I.B.1.d New Impervious ⁵ Surface to be Created ⁶ (sq.ft.)	I.B.1.e Post-Project Impervious ⁵ Surface (sq.ft.) (=b+c+d)
Roof area(s)				2510	2510
Impervious ⁵ sidewalks, patios, paths, driveways, streets				1430	1430
Impervious ⁵ uncovered parking ⁷					
Totals of Impervious Surfaces:				3940	3940
I.B.1.f - Total Impervious⁵ Surface Replaced and Created (sum of totals for columns I.B.1.c and I.B.1.d):					
				3940	
Type of Pervious Surface	Pre-Project Pervious Surface (sq.ft.)				Post-project Pervious Surface (sq.ft.)
Landscaping	14,320				10,380
Pervious Paving					
Green Roof					
Totals of Pervious Surfaces:					
Total Site Area (Total Impervious⁵+Total Pervious=I.A.2)	14,320				14,320

I.B.2 Please review and attach additional worksheets as required below using the Total Impervious Surface (IS) Replaced and Created in cell I.B.1.f from Table I.B.1 above and other factors:

	Check all that apply:	Check One		Attach Worksheet
		Yes	No	
I.B.2.a	Does this project involve any earthwork? If YES, then Check Yes, and Complete Worksheet A. If NO, then go to I.B.2.b	☒	☐	A
I.B.2.b	Is I.B.1.f greater than or equal to 2,500 sq.ft? If YES, then the Project is subject to Provision C.3.i - complete Worksheets B, C & go to I.B.2.c. If NO, then Stop here - go to I.A.5 and complete Certification or ask municipal staff for Small Project Checklist.	☒	☐	B, C
I.B.2.c	Is the total Existing IS to be Replaced (column I.B.1.c) 50 percent or more of the total Pre-Project IS (column I.B.1.a)? If YES, site design, source control and treatment requirements apply to the whole site. Continue to I.B.2.d If NO, these requirements apply only to the impervious surface created and/or replaced. Continue to I.B.2.d	☐	☒	
I.B.2.d	Is this project a Special Land Use Category (I.A.1) and is I.B.1.f greater than or equal to 5,000 sq.ft? If YES, project is a Regulated Project. Fill out Worksheet D. Go to I.B.2.f. If NO, go to I.B.2.e	☐	☒	D
I.B.2.e	Is I.B.1.f greater than or equal to 10,000 sq.ft? If YES, project is a C.3 Regulated Project - complete Worksheet D. Then continue to I.B.2.f. If NO, then skip to I.B.2.g.	☐	☒	D
I.B.2.f	Is I.B.1.f greater than or equal to 43,560 sq.ft? If YES, project may be subject to Hydromodification Management requirements - complete Worksheet E then continue to I.B.2.g. If NO, then go to I.B.2.g.	☐	☒	E
I.B.2.g	Is I.A.3 greater than or equal to 1 acre? If YES, check box, obtain coverage under the CA Const. General Permit & submit Notice of Intent to municipality - go to I.B.2.h. If NO, then go to I.B.2.h. For more information see: www.swrcb.ca.gov/water_issues/programs/stormwater/construction.shtml	☐	☒	
I.B.2.h	Is this a Special Project or does it have the potential to be a Special Project? If YES, complete Worksheet F - then continue to I.B.2.i. If NO, go to I.B.2.i.	☐	☒	F
I.B.2.i	Is project a High Priority Site ? 1) Sites where the project requires a Grading Permit; 2) Sites with a) Residential new construction or a 50% or greater remodel, or b) Commercial/ Industrial construction of a new building or additions of 3,000 sq. ft. or greater, and with one or both of the following: (1) Sites where development will occur on a slope greater than or equal to 5:1, and/or (2) Sites where development will occur within 100 feet of a creek, wetland, or coastline; 3) Any public or private project involving work within a waterway; and 4) Sites within the ASBS watershed that involve soil disturbance If NO, then go to I.B.2.j	☒	☐	
I.B.2.j	For Municipal Staff Use Only: Are you using Alternative Certification for the project review? If YES, then fill out section G-1 on Worksheet G. Fill out other sections of Worksheet G as appropriate. See cell I.B.1.e.1 above - Is the project installing 3,000 square feet or more of pervious paving? If YES, then fill out section G-3 on Worksheet G. Add to Municipal Inspection Lists (C.3.h)	☐	☐	G

⁵ Per the MRP, pavement that meets the following definition of pervious pavement is NOT an impervious surface. Pervious pavement is defined as pavement that stores and infiltrates rainfall at a rate equal to immediately surrounding unpaved, landscaped areas, or that stores and infiltrates the rainfall runoff volume described in Provision C.3.

⁶ "Retained" means to leave existing impervious surfaces in place, unchanged; "Replaced" means to install new impervious surface where existing impervious surface is removed anywhere on the same property; and "Created" means the amount of new impervious surface being proposed which exceeds the total existing amount of impervious surface at the property.

⁷ Uncovered parking includes the top level of a parking structure.

Worksheet A

C6 – Construction Stormwater BMPs

Identify Plan sheet showing the appropriate construction Best Management Practices (BMPs) used on this project:
(Applies to all projects with earthwork)

Yes	Plan Sheet	Best Management Practice (BMP)
☒	EROSION CONTROL	Control and prevent the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, wash water or sediments, rinse water from architectural copper, and non-stormwater discharges to storm drains and watercourses.
☒	EROSION CONTROL	Store, handle, and dispose of construction materials/wastes properly to prevent contact with stormwater.
☒	BMP SHEET	Do not clean, fuel, or maintain vehicles on-site, except in a designated area where wash water is contained and treated.
☒	BMP SHEET	Train and provide instruction to all employees/subcontractors re: construction BMPs.
☒	EROSION CONTROL	Protect all storm drain inlets in vicinity of site using sediment controls such as berms, fiber rolls, or filters.
☐		Limit construction access routes and stabilize designated access points.
☒	BMP	Attach the San Mateo Countywide Water Pollution Prevention Program's construction BMP plan sheet to project plans and require contractor to implement the applicable BMPs on the plan sheet.
☒		Use temporary erosion controls to stabilize all denuded areas until permanent erosion controls are established.
☒		Delineate with field markers clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees, and drainage courses.
☒		Provide notes, specifications, or attachments describing the following: - Construction, operation and maintenance of erosion and sediment controls, include inspection frequency; - Methods and schedule for grading, excavation, filling, clearing of vegetation, and storage and disposal of excavated or cleared material; - Specifications for vegetative cover & mulch, include methods and schedules for planting and fertilization; - Provisions for temporary and/or permanent irrigation.
☒		Perform clearing and earth moving activities only during dry weather.
☒		Use sediment controls or filtration to remove sediment when dewatering and obtain all necessary permits.
☒		Trap sediment on-site, using BMPs such as sediment basins or traps, earthen dikes or berms, silt fences, check dams, soil blankets or mats, covers for soil stock piles, etc.
☒		Divert on-site runoff around exposed areas; divert off-site runoff around the site (e.g., swales and dikes).
☒		Protect adjacent properties and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching, or other measures as appropriate.

Worksheet B

C3 - Source Controls

Select appropriate source controls and identify the detail/plan sheet where these elements are shown.

Yes	Detail/Plan Sheet No.	Features that require source control measures	Source Control Measures (Refer to Local Source Control List for detailed requirements)
☒	C-2	Storm Drain	Mark on-site inlets with the words "No Dumping! Flows to Bay" or equivalent.
☐	N/A	Floor Drains	Plumb interior floor drains to sanitary sewer ⁸ [or prohibit].
☐	N/A	Parking garage	Plumb interior parking garage floor drains to sanitary sewer. ⁸
☒	LANDSCAPE PLAN	Landscaping	- Retain existing vegetation as practicable. - Select diverse species appropriate to the site. Include plants that are pest- and/or disease-resistant, drought-tolerant, and/or attract beneficial insects. - Minimize use of pesticides and quick-release fertilizers. - Use efficient irrigation system; design to minimize runoff.
☒	ARCHITECT	Pool/Spa/Fountain	Provide connection to the sanitary sewer to facilitate draining. ⁸
☐	N/A	Food Service Equipment (non-residential)	Provide sink or other area for equipment cleaning, which is: - Connected to a grease interceptor prior to sanitary sewer discharge.⁸ - Large enough for the largest mat or piece of equipment to be cleaned. - Indoors or in an outdoor roofed area designed to prevent stormwater run-on and run-off, and signed to require equipment washing in this area.
☐		Refuse Areas	- Provide a roofed and enclosed area for dumpsters, recycling containers, etc., designed to prevent stormwater run-on and runoff. - Connect any drains in or beneath dumpsters, compactors, and tallow bin areas serving food service facilities to the sanitary sewer.⁸
☐		Outdoor Process Activities ⁹	Perform process activities either indoors or in roofed outdoor area, designed to prevent stormwater run-on and runoff, and to drain to the sanitary sewer. ⁸
☐		Outdoor Equipment/Materials Storage	- Cover the area or design to avoid pollutant contact with stormwater runoff. - Locate area only on paved and contained areas. - Roof storage areas that will contain non-hazardous liquids, drain to sanitary sewer⁸, and contain by berms or similar.
☐		Vehicle/ Equipment Cleaning	- Roofed, pave and berm wash area to prevent stormwater run-on and runoff, plumb to the sanitary sewer⁸, and sign as a designated wash area. - Commercial car wash facilities shall discharge to the sanitary sewer.⁸
☐		Vehicle/ Equipment Repair and Maintenance	- Designate repair/maintenance area indoors, or an outdoors area designed to prevent stormwater run-on and runoff and provide secondary containment. Do not install drains in the secondary containment areas. - No floor drains unless pretreated prior to discharge to the sanitary sewer.⁸ - Connect containers or sinks used for parts cleaning to the sanitary sewer.⁸
☐		Fuel Dispensing Areas	- Fueling areas shall have impermeable surface that is a) minimally graded to prevent ponding and b) separated from the rest of the site by a grade break. - Canopy shall extend at least 10 ft. in each direction from each pump and drain away from fueling area.
☐		Loading Docks	- Cover and/or grade to minimize run-on to and runoff from the loading area. - Position downspouts to direct stormwater away from the loading area. - Drain water from loading dock areas to the sanitary sewer.⁸ - Install door skirts between the trailers and the building.
☐		Fire Sprinklers	Design for discharge of fire sprinkler test water to landscape or sanitary sewer. ⁸
☐		Miscellaneous Drain or Wash Water	- Drain condensate of air conditioning units to landscaping. Large air conditioning units may connect to the sanitary sewer.⁸ - Roof drains from equipment drain to landscaped area where practicable. - Drain boiler drain lines, roof top equipment, all wash water to sanitary sewer.⁸
☐		Architectural Copper Rinse Water	Drain rinse water to landscaping, discharge to sanitary sewer ⁸ , or collect and dispose properly offsite. See flyer "Requirements for Architectural Copper."

⁸ Any connection to the sanitary sewer system is subject to sanitary district approval.⁹ Businesses that may have outdoor process activities/equipment include machine shops, auto repair, industries with pretreatment facilities.

Worksheet C

Low Impact Development – Site Design Measures

Select Appropriate Site Design Measures (Required for C.3 Regulated Projects; all other projects are encouraged to implement site design measures, which may be required at municipality discretion.) Projects that create and/or replace 2,500 – 10,000 sq.ft. of impervious surface, and stand-alone single family homes that create/replace 2,500 sq.ft. or more of impervious surface, must include **one of Site Design Measures a through f** (Provision C.3.i requirements).¹⁰ Larger projects must also include applicable Site Design Measures g through i. Consult with municipal staff about requirements for your project.

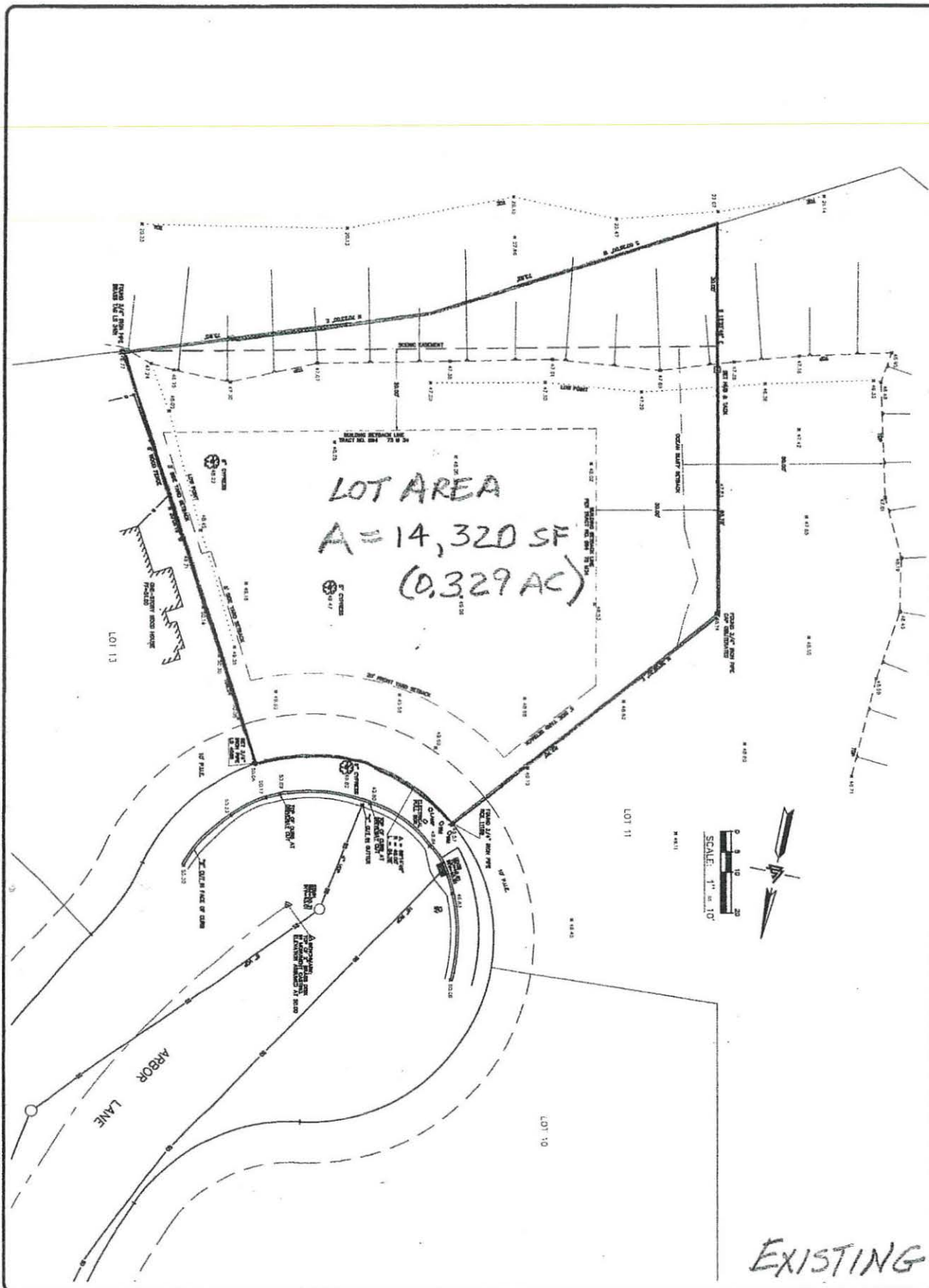
Select appropriate site design measures and identify the Plan Sheet where these elements are shown.

Yes	Plan Sheet Number	
☐		a. Direct roof runoff into cisterns or rain barrels and use rainwater for irrigation or other non-potable use.
☒	C-1	b. Direct roof runoff onto vegetated areas.
☐	CON-SITE RETENTION	c. Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
☐		d. Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
☐		e. Construct sidewalks, walkways, and/or patios with pervious or permeable surfaces. Use the specifications in the C3 Technical Guidance (Version 4.1) downloadable at www.flowstobay.org/newdevelopment .
☐		f. Construct bike lanes, driveways, and/or uncovered parking lots with pervious surfaces. Use the specifications in the C3 Technical Guidance (Version 4.1) downloadable at www.flowstobay.org/newdevelopment .
☐		g. Limit disturbance of natural water bodies and drainage systems; minimize compaction of highly permeable soils; protect slopes and channels; and minimize impacts from stormwater and urban runoff on the biological integrity of natural drainage systems and water bodies.
☐		h. Conserve natural areas, including existing trees, other vegetation and soils.
☐		i. Minimize impervious surfaces.

Regulated Projects can also consider the following site design measures to reduce treatment system sizing:

Yes	Plan Sheet Number	
☐		j. Self-treating area (see Section 4.2 of the C.3 Technical Guidance)
☒	C-1	k. Self-retaining area (see Section 4.3 of the C.3 Technical Guidance)
☐		l. Plant or preserve interceptor trees (Section 4.1, C.3 Technical Guidance)

¹⁰ See MRP Provision C.3.a.i.(6) for non-C.3 Regulated Projects, C.3.c.i.(2)(a) for Regulated Projects, C.3.i for projects that create/replace 2,500 to 10,000 sq.ft. of impervious surface and stand-alone single family homes that create/replace 2,500 sq.ft. or more of impervious surface.



Sheet
1
of 1

Date: 5-9-1987
Scale: 1" = 10'
Drawn By: JEM
Job No.: 5714

TOPOGRAPHIC SURVEY

FOR EUGENE BARBAR
199 ARBOR LANE
MOSS BEACH

SAN MATEO COUNTY

CALIFORNIA

LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS • LAND SURVEYORS
28229 EDEN LANDING ROAD, SUITE 2
HAYWARD, CALIFORNIA 94545
(510) 887-6589
FAX (510) 887-3219

EXHIBIT A

Attachment R

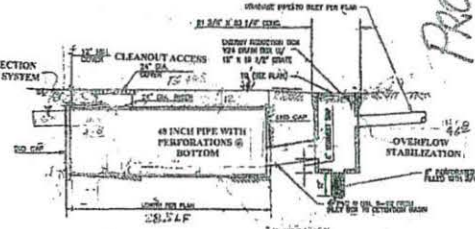
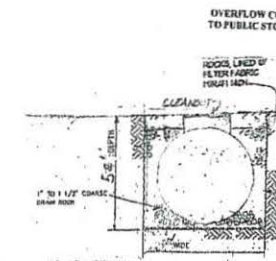
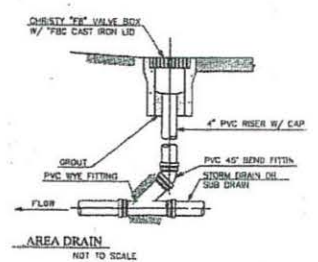
REV
PER NEW
SITE
PLAN
8-24-17

PROPOSED

EXHIBIT B

* EXCLUDES
PERVIOUS
DRIVEWAY

HOUSE - 2,510 SF
HARDSCAPE - 1,430 SF
OPEN - 10,380 SF
TOTAL - 14,320 SF
(N)



RETENTION PIPE DETAIL
(NOT TO SCALE)

TRENCH SECTION DETAIL
(N.T.S)

GENERAL NOTES:

1. RAIN WATER LEADERS SHALL BE CONNECTED TO STORM DRAIN SYSTEM, UNLESS OTHERWISE NOTED.
2. ALL MATERIALS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
3. WHEN APPLICABLE, ALL CONSTRUCTION MATERIALS AND METHODS SHALL COMPLY WITH THE ORDINANCES, SPECIFICATIONS AND STANDARDS OF THE COUNTY OF SAN MATEO, UNLESS OTHERWISE NOTED.
4. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (U.S.A.) PRIOR TO START OF CONSTRUCTION. PHONE (800) 487-3800.
5. UNLESS OTHERWISE SPECIFIED, ALL STORM DRAIN PIPES SHALL BE 4" V.C. SDR 35 PER ASTM D3034 WITH BELL AND SPIGOT RUBBER GASKET JOINTS OR BETTER.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISTRIBUTING ANY EXCESS MATERIAL OR SUPPLYING MATERIAL FOR EXTENDING TO BRIDGE DRIVEWAY AND BUILDING PADS TO REQUIRED GRADE.
7. UTILITIES AND UNDERGROUND FACILITIES INDICATED ARE FOR INFORMATION ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION AND DEPTH WITH THE APPROPRIATE AGENCIES. HOWEVER, THE OWNER AND THE CITY OR THE ENGINEER ASSUMES RESPONSIBILITY THAT THE UTILITIES AND UNDERGROUND FACILITIES INDICATED WILL BE THE UTILITIES AND UNDERGROUND FACILITIES ENCOUNTERED.
8. THE CONTRACTOR IS RESPONSIBLE FOR MATCHING EXISTING SURROUNDING LANDSCAPE AND OTHER IMPROVEMENTS WITH A SMOOTH TRANSITION IN PAVING, GRADING, ETC., AND TO AVOID ABRUPT OR APPARENT CHANGES OR CHORD SLOPES, LOW SPOTS OR HAZARDOUS CONDITIONS.
9. STORM DRAIN LINE INSTALLATIONS SHALL BEGIN FROM THE DOWNSTREAM POINT OF CONNECTION. NOTIFY THE ENGINEER IF THERE IS A DISCREPANCY IN INVERT ELEVATIONS BETWEEN ACTUAL AND AS SHOWN ON PLAN.
10. THE APPLICANT / CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT FROM THE COUNTY'S ENGINEERING DIVISION PRIOR TO COMMENCING ANY WORK IN COUNTY'S RIGHT-OF-WAY.
11. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FOR ALL WORK SHOWN ON THIS PLAN.

RL	ROOF LEADER
AD	DIRECTION OF SURFACE FLOW
TC	AREA DRAIN
INV	TOP OF GRATE ELEVATION
ES	PIPE INVERT ELEVATION
FS	EXISTING
	FINISH SURFACE ELEVATION

ANY DAMAGE TO COUNTY RIGHT OF WAY FACILITIES (CURB AND CUTTER, DRIVEWAY APPROACH, ROADWAY, ETC.) DURING CONSTRUCTION OPERATIONS IS SUBJECT TO REPAIR TO COUNTY STANDARD AT CONTRACTOR AND PROPERTY OWNER EXPENSE.

TOPOGRAPHIC SURVEY
LEA & BRAZE ENGINEERING, INC.
CIVIL ENGINEERS • LAND SURVEYORS
26229 EDEN LANDING ROAD, SUITE 2
HAYWARD, CALIFORNIA 94545
(510) 887-4006
FAX (510) 887-3005

JOHN F. WARR
REV 18720
EXP. 6-30-17

PRELIMINARY

SITE GRADING, DRAINAGE & UTILITY PLAN
199 ARBOR LANE
MOSS BEACH, CA

BERRY & ASSOCIATES
1733 WOODSIDE ROAD, SUITE 335
REDWOOD CITY, CA 94061
PHONE: 650/368-0750 FAX: 650/368-1810

NO.	DESCRIPTION	DATE
1		
2		
3		
4		
5		
6		
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8		
9		
10		

DRAWN BY:	
DESIGNED BY:	
CHECKED BY:	
SCALE:	
SHEET:	
DRAWING NO.:	
SHEET:	



County of San Mateo - Planning and Building Department

ATTACHMENT N

Carmelisa Morales

From: Dan Blick <dan_blick@coastside.net>
Sent: Tuesday, May 22, 2018 5:01 PM
To: Carmelisa Morales
Subject: Comment on PLN2016-00444 MND

I would like to register my comment AGAINST the Mitigated Negative Declaration for PLN2016-00444 (199 Arbor Lane).

I agree with the analysis of the Midcoast Community Council in their comments.

There is insufficient data to claim that there will be no environmental impact, especially considering the erosion.

Dan Blick

130 Arbor Lane

Public Comment #2

Carmelisa Morales

From: Jim Scheinberg <jim.scheinberg@npier.com>
Sent: Tuesday, May 22, 2018 4:59 PM
To: Carmelisa Morales
Subject: Fwd: Arbor Lane
Attachments: November 9 CDRC meeting Arbor Lane.docx

Also please re-enter my letter from the November 9th meeting attached, also regarding PLN2016-0044.

Thanks again,

Jim

Jim Scheinberg CIMA®
Managing Partner

North Pier Fiduciary Management, LLC
4333 Admiralty Way
G1 West
Marina Del Rey, CA 90292

w (800) 403-7065 xt. 272
f (310) 694-3036
e jim.scheinberg@npier.com

[Website](#) | [Twitter](#) | [Facebook](#) | [LinkedIn](#) | [YouTube](#)

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----- Forwarded message -----

From: Jim Scheinberg <jim.scheinberg@npier.com>
Date: Tue, May 22, 2018 at 4:24 PM
Subject: Arbor Lane
To: Jim Scheinberg CIMA AIFA <jim.scheinberg@npier.com>

Jim Scheinberg CIMA®
Managing Partner

North Pier Fiduciary Management, LLC
4333 Admiralty Way
G1 West

Carmelisa Morales

From: Jim Scheinberg <jim.scheinberg@npier.com>
Sent: Tuesday, May 22, 2018 4:57 PM
To: Carmelisa Morales
Subject: Re: Mitigated Negative Declaration for Arbor Lane Residence
Attachments: PLN2016-0044 Scheinberg Concerns.pdf

Hi Carmelisa,

Please enter the attached letter into the record for PLN2016-0044.

Thank you!

Jim Scheinberg CIMA®
Managing Partner

North Pier Fiduciary Management, LLC
4333 Admiralty Way
G1 West
Marina Del Rey, CA 90292

w (800) 403-7065 xt. 272
f (310) 694-3036
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On Tue, May 22, 2018 at 10:06 AM, Carmelisa Morales <CJMorales@smcgov.org> wrote:

Hi Jim,

Unfortunately, members of the public cannot contact CDRC members directly as it would be a violation of the Brown Act. The CDRC would need to be contacted as one entity through County staff and they would only be able to provide a response within a public forum (the CDRC meetings). These meetings have already happened and the CDRC has already made their recommendation.

As for the recommendation letter, the CDRC drafted these findings, conditions, and recommendations and there were no issues or objections to this recommendation being a recommendation between CDRC and Staff.

Regarding your comments, thank you for letting me know. This email has been added to the project file.

Please let me know if you have any further questions.

Kind regards,

Carmelisa Morales, Planner II

Planning and Building Department

County of San Mateo

650-363-1873 | planning.smcgov.org

From: Jim Scheinberg [mailto:jim.scheinberg@npier.com]

Sent: Tuesday, May 22, 2018 9:01 AM

To: Carmelisa Morales <CJMorales@smcgov.org>

Subject: Re: Mitigated Negative Declaration for Arbor Lane Residence

Thank you for the update Carmalisa. Can I please have the names and emails of all three of the committee members that were present that day? The new member was clear at the meeting that removal of the second door and subsequent reduction in square footage was a requirement as a condition to his approval, not a "recommendation" as the final letter stated. Further, the female committee member verbally stated that she "liked" that idea as it would pull the Southwest corner further away from the Dean's Creek bluff top, as she was concerned of how close it was to the edge. I would like to independently verify that they both changed their minds and that this was not a mistake in the final letter. Please consider this me formally questioning the findings of the committee on this point as it is inconsistent with verbal comments made by the committee in the public forum on 11/9.. I will be submitting the rest of my concerns by EOD. Please confirm your receipt of this email and let me know if there is anything else I need to do at this time to have this officially entered into the record.

Respectfully,

Jim

Jim Scheinberg CIMA®
Managing Partner

North Pier Fiduciary Management, LLC
[4333 Admiralty Way](#)
G1 West
Marina Del Rey, CA 90292

w (800) 403-7065 xt. 272
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On Tue, May 22, 2018 at 7:30 AM, Carmelisa Morales <CJMorales@smcgov.org> wrote:

Hi Jim,

The reduction to the rear doorway was a recommendation by the CDRC. The applicant informed me that he will not be changing the design at this time to reflect this recommendation.

And thank you for the update.

Best,

Carmelisa Morales, Planner II

Planning and Building Department

County of San Mateo

650-363-1873 | planning.smcgov.org

From: Jim Scheinberg [mailto:jim.scheinberg@npier.com]
Sent: Saturday, May 19, 2018 7:50 PM
To: Carmelisa Morales <CJMorales@smcgov.org>
Subject: Re: Mitigated Negative Declaration for Arbor Lane Residence

Hi Carmelisa,

A quick question regarding PLN2016-00444. The commission verbally stated that they would recommend for approval providing the owner reduce the width of the project by the width of the rear door from a double to a single. This was agreed to clearly at the end of the public forum when I was in attendance. Somehow that "condition" got worded as a 'suggestion' in the November 9 recap letter. The plans that are provided on the planning site referenced below do not show any revisions to that effect. Were any provided?

I will be sending in formal comments to you before the posting period expires on the 22nd and want to make sure I am current on all the pertaining facts.

Thanks much for your help clarifying.

All the best,

Jim

Jim Scheinberg CIMA®
Managing Partner

North Pier Fiduciary Management, LLC
[4333 Admiralty Way](#)
G1 West
Marina Del Rey, CA 90292

w (800) 403-7065 xt. 272
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On Wed, May 2, 2018 at 12:21 PM, Carmelisa Morales <CJMorales@smcgov.org> wrote:

Good afternoon,

You are receiving this email because you provided comments at the past public hearings and/or requested notice of the environmental document for the proposed residential project at Arbor Lane in Moss Beach, Planning Case No. PLN2016-00444. The Mitigated Negative Declaration for this project was posted today, May 2, 2018. The posting period is from May 2 to May 22, 2018. The document is available for view under “Mitigated Negative Declaration for a Single-Family Residence on Arbor Lane, Moss Beach” on the County Planning website: <https://planning.smcgov.org/ceqa-docs>.

If you would like to provide comments, please email them to me prior to the end of the posting period. Further, if you have any questions, feel free to contact me via email or phone. Thank you!

Kind regards,

Carmelisa Morales, Planner II

Planning and Building Department

County of San Mateo

650-363-1873 | planning.smcgov.org

Memo to County of San Mateo
Planning and Building Department

Date: May 22, 2018

To: Carmelisa Morales, Project Planner

Cc. Renee Ananda, California Coastal Commission (CCC) Coastal Program Analyst

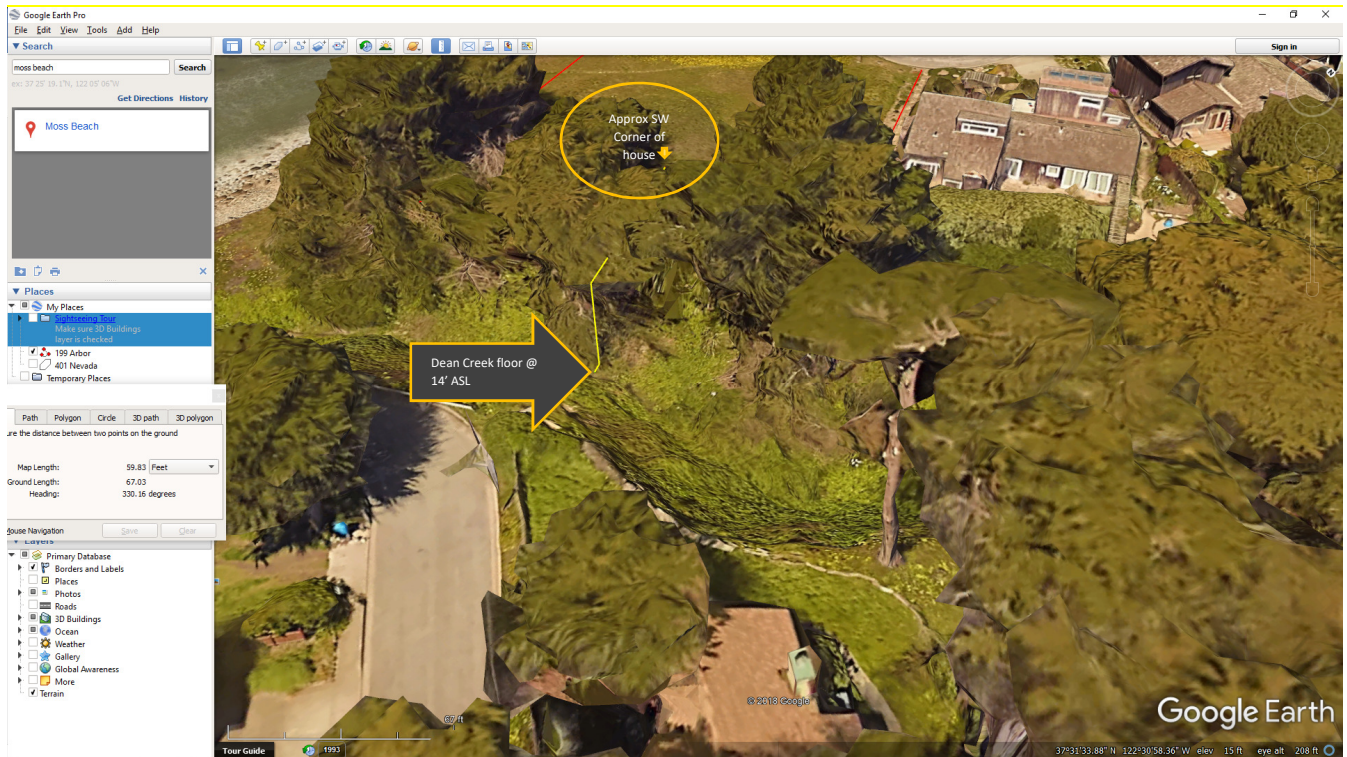
From: Jim Scheinberg, 401 Nevada Ave., Moss Beach, CA 94038

Subject: Arbor Lane Moss Beach, New single-family dwelling on coastal bluffs-PLN2016-00444—
Mitigated Negative Declaration

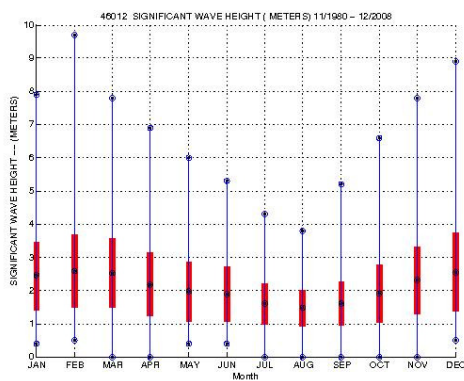
To whom it may concern,

I would like to voice my concerns regarding the Mitigated Negative Declaration("MDC") PLN2016-00444.

Firstly, I am concerned that the findings expressed in the MDC do not align with the verbal statements and covenants made at the November 9th hearing of the CDRC. At the meeting, the new member of the committee was clear that removal of the second door rear entrance and subsequent reduction in square footage was a requirement as a condition to his approval, not a "recommendation" as the final letter stated. Further, the female committee member verbally stated that she "liked" that idea as it would pull the southwest corner further away from the Dean's Creek bluff top, as she was concerned of how close it was to the edge it was. I request that the Planning and Building Department independently verify that they both changed their minds and that this was not a mistake in the final letter. I have been informed today by Carmelisa Morales, Planner, that although, "The reduction to the rear doorway was a recommendation by the CDRC[, the] applicant informed me [Carmelisa] that he will not be changing the design at this time to reflect this recommendation." My concern over this issue is related to my broader concern below.



The southwest corner of house is approx. 60 feet from bottom of creek which is at ~14 feet above sea level¹ (ASL) and less than 40 feet away from the nearest point ~24 feet ASL in the creek. With routine wave heights above 8 meters (see chart below) during winter storm months of November thru March (not including additional height for shore breaks), the ocean routinely intrudes within 40 feet of the projected home location and will continue to erode sections of creek walls during usual “significant wave activity.”

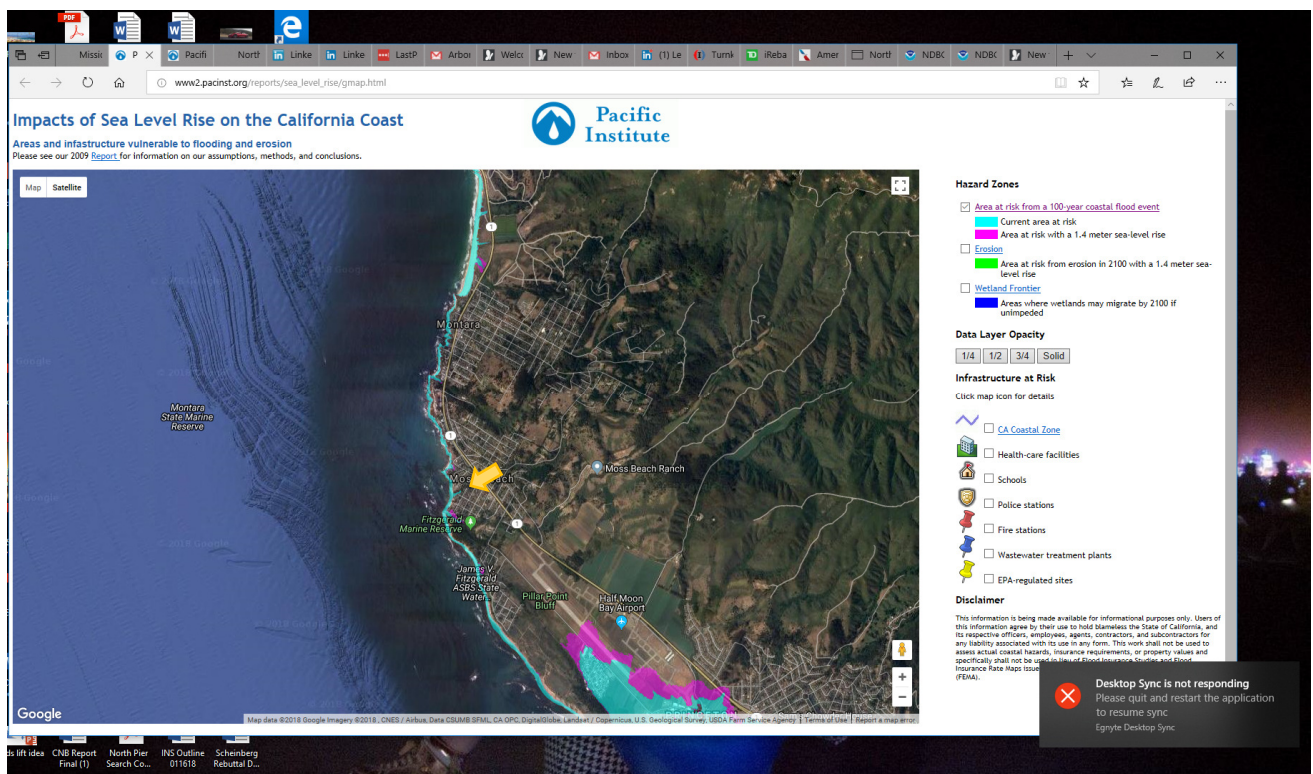


2

¹ According to Google Earth

² http://www.ndbc.noaa.gov/view_climplot.php?station=46012&meas=wh

The home is actually less than 20 feet away from the cliff bluff at the Dean's Creek boarder (estimated at 16-17 feet), which will certainly continue its pattern of erosion both due to normal rain activity as well as from the effects of ocean intrusion up Deans Creek during typical "significant wave activity." This historical evidence is supported by the Pacific Institutes' online model of Impacts of Sea Level Rise on the California Coast.³ This map clearly shows present modeling of flood from ocean intrusion going significantly up Deans Creek, past a line paralleled by Ellendale Ave. to a point near if not past the far boundary of the 191 Arbor lot line. No study was provided by the owner/developer regarding measurements from key heights in the creek (such as ~8 meters ASL), which is presently an area within Dean's Creek that the ocean periodically rises to. If most commonly accepted predictions for sea level rise hold true, then erosion will hasten and the distance between the Pacific Ocean and the proposed home will shorten even more. Dean's Creek, boarding the proposed home is not just an environmentally sensitive creek, it is routinely part of the Pacific Ocean. As such, the proposed home's proximity to the western most point should not be the only setback factored. The home's proximity to the Pacific Ocean when it routinely rises as it enters Deans Creek to the South should also be measured, studied and factored. It deserves note that the "GEOTECHNICAL AND GEOLOGIC INVESTIGATION" provided by Michelucci & Associates, Inc. on behalf of the owner did not investigate or factor "wave and tidal action" regarding the South-facing bluff as required by LCP 9.8.b(5). If a proper study were conducted, it will likely reveal that the proposed home is less than 20 feet from the ocean blufftop to the southwest, far less than the 50 feet minimum prescribed by the SMC Midcoast LCP 9.8(c)



³ http://www2.pacinst.org/reports/sea_level_rise/gmap.html Screen shot of map is for illustrative purposes only. Deans Creek intrusion can more clearly be seen from following the referenced link.

I am expressing my concern that the south bluff face is not being held to the same standards as the west bluff face, despite being less than 150 feet from the ocean's edge at all times and less than 20 feet during routine weather, tidal and wave patterns. I have lived on the south edge of Deans Creek for a year and a half and can say without a doubt, that the Pacific Ocean washes up Dean's Creek at super tides without the effects of large wave events. During a 50-year expected life, we will undoubtedly will see times of combined high tides and significant wave events. The creek walls are eroding. I have witnessed it myself and my neighbors have corroborated with their longer historical views.

Respectfully,

Jim Scheinberg
401 Nevada Ave.

November 9, 2017

TO: Coastside Design Review Committee Meeting

RE: APN 037-123-430; PLN 2016-00444 (Arbor Lane, Moss Beach)

Below are a summary of the main concerns that I will voice at the CDRC meeting today regarding the above proposed project. I will be voicing other issues as well as time permits.

Concerns Over Scale:

As the proposed project is directly in my home's sightline, I would like to voice the following concerns regarding the scale of the revised project. When I purchased my home over a year ago, I was familiar with the local policies regarding compatibility with the surrounding neighborhood and after doing my due diligence regarding the vacant lot in question, I was comfortable that any home ever build there would be reasonable in scale and not represent an eyesore to our views due to excess proportions.

1. Per CDRR of July 24, 2017 in response to presentations at the CDRC meeting on July 13, 2017, the committee stipulated that the "size of the house should be reduced to a size compatible with surrounding houses." [Ref: Sec. 6565.20(B)(2) Neighborhood Character] The committee further stated that the surrounding houses were "under 2,800 square feet." And that the proposed house [was] approximately 43% larger than the largest house in the immediate area. Additionally, the committee stated that "New houses should be of a consistent scale with the homes in the neighborhood," and that at approximately 4000 square feet, "the proposed project [was] out of proportion to other houses in the neighborhood," which average 2,500 square feet. [Ref Sec.6565.20(D)1b Neighborhood Scale]

Despite the committee's direction regarding scaling the project down to be compatible with Neighborhood Character and Scale, the revised plan presented by Mr. Zubieta for his project only offers an 5% or 8% reduction to the original proposed 3987 square foot project (when measured to the 3666 interior footage or 3806 including covered porches, respectively. Clearly, this minute scaling is not sufficient to bring the project into scale with the character or scale of the neighborhood required by the above referenced codes.

2. The applicant did not modify the story poles for the project 10 days prior to today's hearing as clearly required by the CDRD Policies on Story Pole Installation and Major and Minor Modifications. As this is an issue of the intended structure being deemed by the committee as being grossly out of proportion to the neighborhood, it is logical that new story poles would have been erected to afford neighbors like myself ample time for review and comment. Seeing as the reduction in the project size is only around 5%, in spite of the committee's direction to reduce in line with other building in the area, this seem material. In the unlikely event that the committee were to consider the revised plans, I encourage them to direct Mr. Zubieta to comply

with the requirements so the community and committee can have ample time to review the revised proposal and its impact to environment, character and view corridors.

Concerns Over Environmental Impact:

To the south, the project is still positioned dangerously close to the edge of the ravine which has been constantly eroding for many years according to my neighbor's reports. My property has already experienced slide activities into the ravine in the one short year I have owned my home. The project in question bears the brunt of much more of the wind and rain from coastal storms than mine and is likely more vulnerable to erosion. To the north, the project is vulnerable to much more rapid erosion. One report related to the project that I reviewed stated that the ocean-front cliff-side in front of the project had eroded over 30 feet in the last 40 years. Now that storm activity is accelerating due to climate change and sea levels are forecasted to rise meaningfully over the next 50 years, it is reasonable to assume that the Oceanside cliff will erode even more rapidly. If seas do rise meaningfully, water will get washed up into the ravine, accelerating erosion to the south as well. The committee should evaluate the fragility of this parcel of land and protect the delicate peninsula on which the project is proposed. It would be tragic if this project accelerated the deterioration of that land due to its massive proposed scale and placement.

Thank you for your consideration,

Jim Scheinberg
401 Nevada Ave.
Moss Beach

Public Comment #3

Memo to County of San Mateo
Planning and Building Department

Date: May 18, 2018

To: Carmelisa Morales, Project Planner

Cc. Renee Ananda, California Coastal Commission (CCC) Coastal Program Analyst

From: Steven and Melinda King, 191 Arbor Lane, Moss Beach California

Subject: Arbor Lane Moss Beach, New single-family dwelling on coastal bluffs-PLN2016--00444—Mitigated Negative Declaration

After reviewing the Mitigated Negative Declaration our official issues of concern regarding this proposed development project are the same as our concerns detailed in the documents provided to the County and CCC **dated October 22, 2017** and **November 15, 2017** as well as documents provided to the Coast Side Design Review **dated July 4, 2017** and **October 31, 2017 (all 4 are attached again for the record)**. We also concerned about an apparent internal County decision to reverse the findings of County Planning staff correspondence of 6/4/1997 identifying the Deans Creek Cliff Bluff top as subject to LCP Policy 9.8, Development on Coastal Bluff Tops. A decision was changed but the Coastal Bluff Top is still a Coastal Bluff Top.

The proposed development is in and adjacent to a biologically sensitive and unique coastal habitat, the Fitzgerald Marine Reserve. It is clear that this project poses a significant threat to the terrestrial, riparian, beach, reef and aquatic ecosystem due to sea level rise that is described in the Coastal Commission Sea Level Rise Policy Guidance Document. This sea level rise guidance demonstrates that any project **atop eroding bluff tops on two sides** should be projected to last until at least 2100. It is quite likely that building and related material will be required to be removed from the site so that they do not fall or erode onto the the biologically sensitive Fitzgerald Marine Reserve, wildlife or human visitors. The 8/29/17 Michelucci geologic report did confirm at least 11 feet of lost bluff during the 2016/17 rainy season in the Ocean front cliff bluff top. That Coastal Bluff top consists of unconsolidated sandy soil and is subject to erosion from ocean waves and surface runoff. There has been in fact additional loss of Coastal Bluff Top on the Ocean and Deans Creek Bluff Tops in the past 6 months which further reduces the life span of this project as submitted. A senior CCC geologist has provided the opinion that the setback from the Coastal Bluff top on a residence, 263 Nevada, a few hundred feet south from this proposed development should be 80 feet due to erosion rates (12/13/2012 staff report p. 18). The proposed footprint of this development project is now, in at least one location, less then 60 feet from a highly unstable Coastal Bluff Top.

We are also concerned about lack of proper compliance with LCP policies 8.4, regarding bluff top development, LCP policies 7.1, 7.3, 7.4.9 (no voucher herbarium specimens of potential

unique species have been collected or sent to specialist to verify the proposed taxonomic identification of *Fragaria* sent to county is accurate) 7.5, and LCP policy 8.13, 9.8 (a)-(c)(d). 9.11.

We are also concerned that none of the project developer's consultants addressed the following geomorphological land failure in the lot adjacent to Deans Creek side of the project on the same Creek Bluff top next to the proposed development, 191 Arbor Lane. In 1984 a heavy rainfall and storm washed away 20 feet of land of Deans Creek bluff top (**October 31, 2017 Memo to CDRC and County**). To protect from such active and significant erosion the owners of the 191 Arbor lane home installed rock and wire rip rap armoring on the Deans Creek side and planted 10 trees above rip rap armoring, these trees now have an average DBH of 30". The developer is proposing to remove a tree with a DBH of 36" that is 18 feet or less from the vertical cliff face on Deans Creek and seeking to place the proposed structure at that location. This not only threatens to drop building materials into the biologically sensitive Fitzgerald Marine Reserve and Deans Creek when further erosion occurs as has been documented historically but also threatens the stability of the existing home adjacent to this proposed development. The LCP Policy 9.8(d) prohibits new structures from building costal armoring and it appears that has not been adequately addressed in the Negative Declaration. Photographs of Deans Creek side erosion in 1997 of this proposed building site have also documented a tree eroding from the Coastal Bluff Top into Deans Creek bed. The concave wall under the Coastal Bluff top of Deans Creek is actively eroding and yet the proposed development is less then 20 feet from that vertical and undercut concave

The other major issue of concern is the apparent lack of incorporation of the totality of data, evidence and documentation produced and in the hands of the County of San Mateo and the CCC. We are referring to several studies and documents including the Coastal Hazards Assessments produced by highly qualified experts on the estimate of future Cliff Bluff Top erosion at another Cliff Bluff Top proposed building site in Moss Beach prepared by ESA **dated October 26, 2016** which was provided in written and power point format to the MCC in October 2016. This and the MCC document on impact and history of coastal armoring to attempt to mitigate sea level rise demonstrate that the 199 arbor Lane proposed development, including the deep drilled-piers mentioned in Mitigation # 14 is not adequate or functional to protect the public interest in biologically fragile and unique Fitzgerald Marine Reserve. The data on page 10 of the Coastal Armoring MCC document **dated 2015-12-09** show that the historic house at 101 Beach Street was moved inland onto a neighboring parcel in 2002 when it came extremely close to falling into the Fitzgerald Marine Reserve due to erosion of highly unstable Cliff Bluff Top of the same composition of the Cliff Bluff Top so close to the proposed 199 development. There is no place to move the proposed development on 199 Arbor when the Cliff Bluff top succumbs to sea level rise, wave action and winter storms. It appears, based on the totality of data and evidence for this site and area that footprint of this proposed 199 development project should dramatically reduced to address the erosion and instability of Coastal Bluff Tops on two sides of this site.

Thank you for review of these concerns related to the environmental and public interests of this proposed development.

Memo to Coastside Design Review

RE: Public Hearing of Coast Side Design Review On July 13, 2017

Specific Topic: 199 Arbor Lane, PLN2016-00444 Arbor Lane Moss Beach

Date: July 4, 2017

Owner: Zubar LLC, applicant Carlos Zubar

Contents: Specific Concerns Regarding Proposed Design Review

From: Steven and Melinda King, 191 Arbor Lane, Moss Beach California

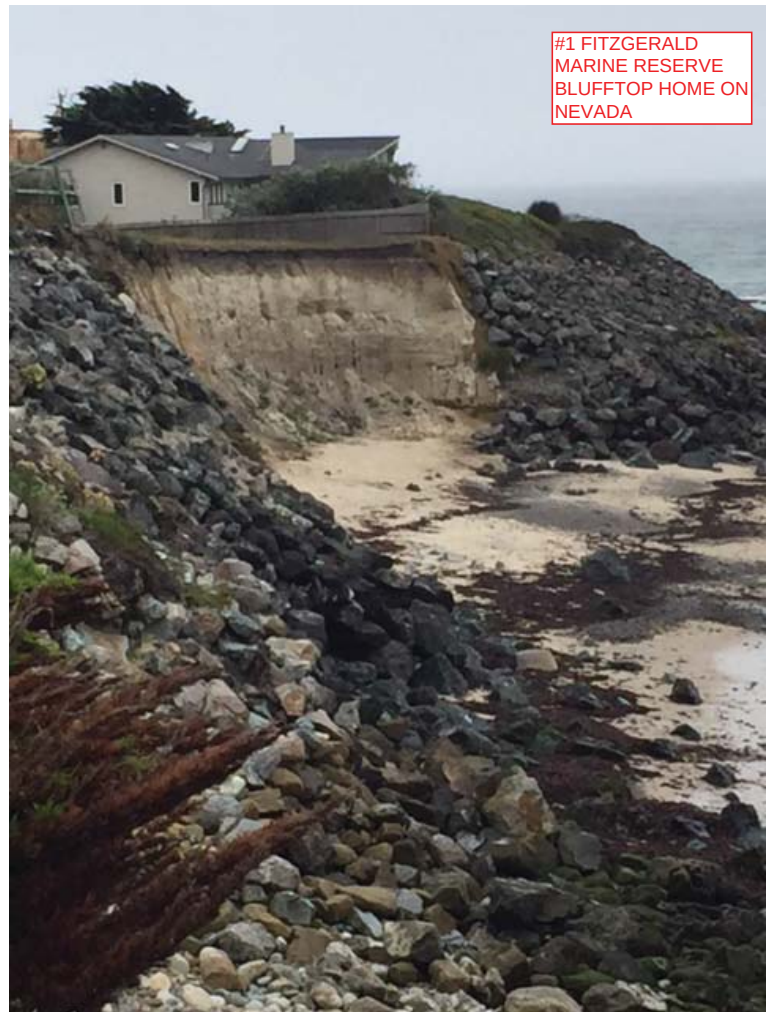
Executive Summary of Concerns:

1. The nearly 4000 sq feet proposed, 2 story single family proposed development project does not fit into the architectural design, look, or appearance of nearby homes that are on the Ocean front above one of the gems of the coastside, the Fitzgerald Marine Reserve. (Please see labeled photographs, labeled set # 1) of all the other homes north and south of this proposed 2 story development are single story homes that blend in the coastal landscape. We recommend that project be modified to be a single story home to be consistent with the other homes that are on the ocean front. This lot, 199 Arbor and a different design were offered to the public for US \$1 Million dollars in the past few years indicating a desire to maximize the profit potential for this environmentally fragile and unstable lot. It appears the oversized 2 story development project is focusing on maximum profit with little or no congruence with homes in front of the Ocean.
2. The actual design of the 2 story project does not match, fit in or reflect the general aesthetic of the homes on Arbor Lane. The project as submitted included photographs of some "modern" architectural design that are many blocks away and are have no relationship to the Arbor lane tone, feel, or design. This proposed project could be a closer fit with a one story revised design.
3. There is a mis representation of the setback from the Dean's creek. The rear corner of the proposed development is not 27 feet from the steeply eroded creek bank. A correct and revised footprint and story poles is requested, along the entire back edge of the proposed development. The previous proposed development permit request for well drilling permit also mis-represented the severe state of erosion on the Deans creek to the San Mateo County Planning department. When the actual and correct status erosion was provided to Planning department the proposed well drilling site was required to be moved 50 feet from the eroded Creek top. That erosion has continued and is more severe now. The current story poles on this lot do not reflect a 27 ft set back required in te Project Analysis dated 6/16/17 under "# 2 b. Rear 27 feet". See summary of case activity PLN2016-00444.
4. The Biological Resource Assessment is out of date, as it was performed in May of 2015, more then 2 years ago but was submitted in April of 2017. This is a unique and fragile

biological corridor with a Deans Creek running along the entire back side of the proposed development and the front of the site fully exposed to the bluffs above the Fitegerald Marine Reserve. The owners have already made an ecological error by having clearing a large area of waist to chest high vegetation with machinery to enable them to erect the story poles. The company Kopitov who performed this "Biological Assessment " did acknowledge that they did not inspect this waist high vegetation as it was dense and also contained poison oak but they acknowledge that habitat may contain nest of the endangered species the Dusky Footed Woodrat. In mitigation measures it was suggested in **BIO-MM4 "Pre-construction survey flag and relocate Dusky Footed Woodrat nests. Prior to the start of vegetation removal, a biologist familiar with the species and its habitat shall survey for San Francisco dusky footed woodrat nest within or immediately adjacent to the potential habitat (ie poison oak scrub). If no nest observed, then no further mitigation would be required."** Dr. Steven King, a Ph.D. biologist has observed what appeared to be DuskyFooted Woodrat in the vicinity. Since that exiting uninspected poison oak scrub was destroyed by machinery to erect story poles without any biologist working with the team we may have already killed or displaced this endangered species. This is one of the problems associated with remote developers who do not reside or focus on the the day to day operations of contractors.

The afternoon after the clearing a juvenile fox was photographed on the lot looking confused and disoriented (see photo graphs series labeled series # 2). Similar concerns exist for the potential destruction of endangered red legged frog and San Francicso Garter Snake both of which have been observed in the area but the machine clearing has precluded a careful search for those species on the site.

5. The Geotechincal report was also performed more then 1 year ago and since that time the bluffs on the front of the land have eroded by 10 feet, making their estimates and date incorrect and out of date. The fence maintained by the block association had to be moved back 10 feet and debree from the fence removed from the Fitegerald Marine Reserve beach below. The owners of 199, along with the rest of the residents were appraised of this erosion. The set back from the front is likely no longer correct as there has not been a survey since this 10 feet of lost bluff top. This is a highly unstable Ocean front bluff and the rear of the proposed development is also highly fragile but no realistic erosion plan has been provided. In fact the developers have indicated that they plan to replace the 2 trees they will remove (one of which is actually providing erosion protection to the rear corner of their property) with at least 2 trees that will block the last remaining street level Ocean view of 191 Arbor Lane, our home (see photographs labeled series # 3). We would think and request that planting trees in the back of their home to help stabilize creek bluff top would be in their best interest for this development.
6. Please note that no notice was given of this story pole development and meeting on July 13 to any of the Arbor lane block residents nor surrounding neighbors.





#3 DEAN'S
CREEK EROSION



#3 DEAN'S CREEK
EROSION MID-SITE



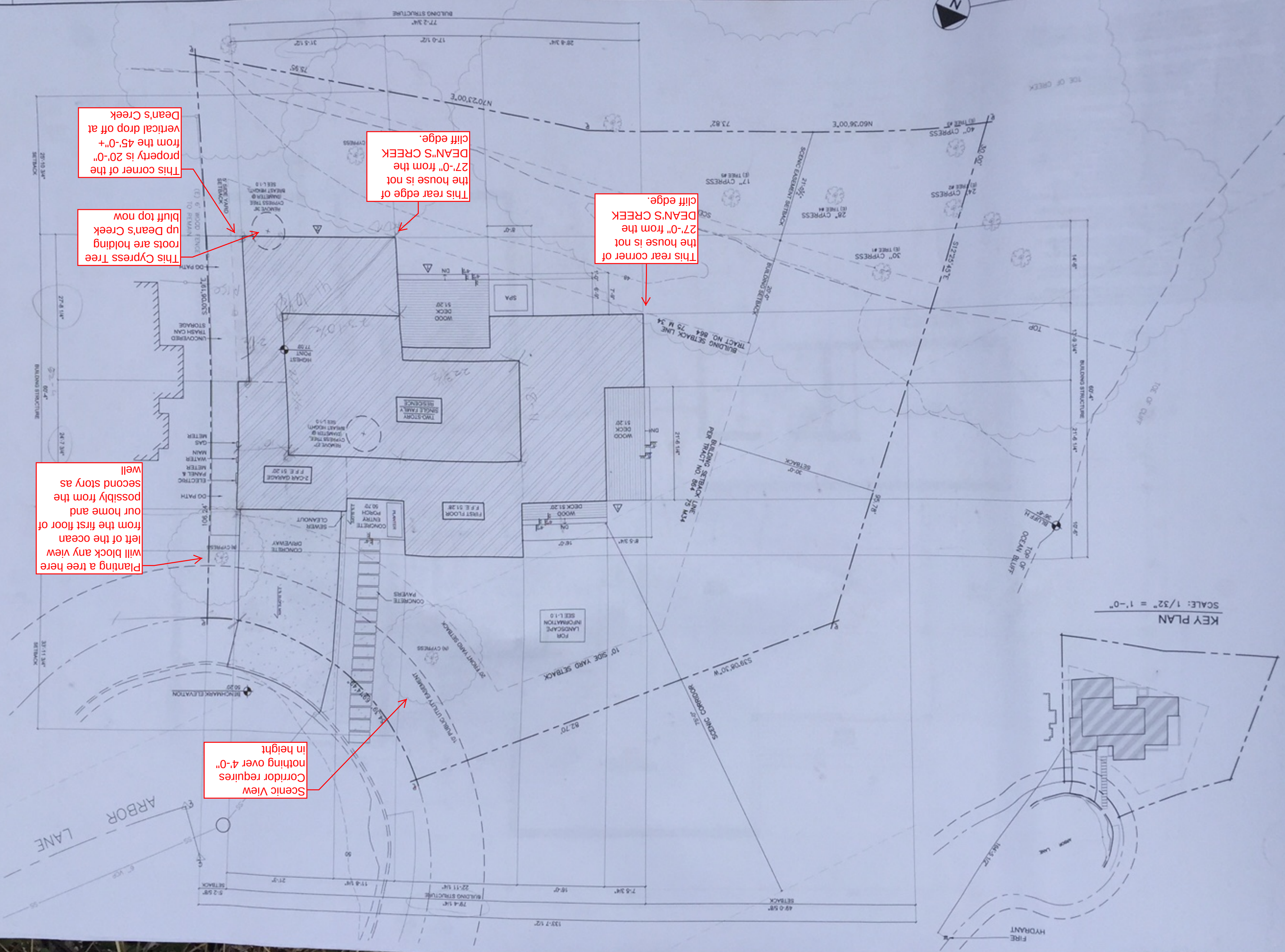
#3 TREE ROOT
HOLDING UP
DEAN'S CREEK
BETWEEN 191
AND 199
ARBOR LANE



#3 STEEP VERTICAL
DROP OF DEAN'S
CREEK EROSION







Memo

TO: Carmelisa Morales and County Geotechnical Review Officer
Environmental Services Agency
Planning and Building Division
San Mateo County, Redwood City

RE: California Coastal Commission (CCC) records, Revised, Plans
Building, Geotech and Biological Resource Assessment for Development
Project- PLN2016-000444 Lot - 12 Abor Lane

FROM: Steven R. King Ph.D. 191 Arbor Lane, Moss Beach, CA

DATE: October 22, 2017

This submission to County is being provided after reviewing documents in the offices of the California Coastal Commission that were provided to me in September and an initial review of the recently submitted revised project design, geotech report and biological resources assessment sent to you at the planning office of San Mateo. It is likely that there will be more documents available from archives of CCC in the next few months that are relevant to this development project and those are being sought from the Sacramento archives of CCC.

A review of the documents submitted indicate that there are numerous issues that have not been addressed by the developers of this project. In this analysis I will focus on one primary and fundamental issue as it appears other organizations, individuals and agencies will be addressing the multiple other issues that remain to be addressed.

1. I am identifying an error in the very brief 2.5 page “updated” Geotechnical report dated August 29, 2017 by Michelucci & Associates, Inc. **The specific error is as follows:**

Page 2 of this document under the discussion section it suggests that “The slope down the from the site to Dean Creek drainage along the south side of the site remains visually unchanged (i.e. there **does not appear** to have been further erosion or retreat of the Dean Creek Drainage side walls during the winter of 2016-1027).”

That is incorrect for two reasons. The first is that I have observed erosion on the cliff/bluff top of Dean’s Creek drainage within Sunshine Valley after that winter. **It is more deeply concave into the Cliff/Bluff Top due to undercutting** than it was prior to this past 2016-2017 season. **The second error is that it is not a “slope” it is and has been a near vertical wall or what most experts or lay persons would refer to as a Cliff Face/Bluff Top.** The words used in this 2.5 page “updated report”, “**does not appear**”, is likely due to the fact that the people doing this work were not able to access the cliff face as it is too steep and also covered in difficult to navigate top vegetation with thorns and some poison oak. The top of Cliff/Bluff Top is eroding due to the southern exposure of the Cliff with wind and rain causing erosion at top of that cliff undercutting the Cliff/Bluff Top. The bottom of the cliff face is also subject to erosion due to the episodic flow of the creek washing away the base of the Cliff/Bluff Top when the rains flow into the creek water that is channeled down the ridges and land associated with Montara Mountain and the high flow erodes the base of the Cliff/Bluff Top. Please see the fallen trees, erosion and water flow (in photos labeled #1A and 1B at the end of this document) below the southern end of the proposed development in Dean’s Creek of Sunshine Valley. This means there are two forces of natural erosion at the top and bottom of this Cliff/Bluff Top face.

2. I would now like to draw your attention to the California Coastal Commission file provided to me labeled P-1201. This 1974 official CCC file is associated with the development of lot 10 on Arbor Lane (see documents set # 2A/2B/2C/2D/2E at the end of this document) which is adjacent to lot 11 across the view corridor from lot 12 (lot 12 is the focus of this development application). As you can see from the document labeled “Potential Erosion” there is a line on the southern edge of lot 12 that is labeled **“Projected Top of Cliff in 50 years”**. Please note that the development of lot 10 was, in 1974, already examining the projected potential erosion of this cliff top for a project that was on the other side of the view corridor. Also please note the use of the correct technical term **Cliff Top**. It was a Cliff Top/Bluff Top then and it is still today and not a **“slope”**. Please also note that this document was prepared for the development of lot 10 by Lowery Kaldaveer Associates who were “Foundation, Soils, and Geotechnical Engineers”. Please note as well that within 15 years of construction the Ocean Bluff Top of this lot 10 house had to be armored when a large storm threatened the house due to Cliff/Bluff Top erosion.
3. Please now refer to document set #3A/3B/3C/3D/3E/3F at the end of this document) dated June 4, 1997 from Dave Holbrook, San Mateo Project planner for a development attempt on lot 12 identified APN-037-123; File No. CDP 96-0045. This document has been provided to the Planning and Building Division this past July, 2017 but it is more relevant then ever as the revised lot 12 development project and associated documents submitted appears to be seeking to “hide or diminish the significance” of this Cliff/Bluff Top on the southern end of this development project. In this set of documents, the then developer who was attempting to develop this site was informed on page 1 of this document that proposed well drilling site “must be set back an additional

distance from creek Bluff Top edge in order to comply with the attached Local Coastal Program (LCP) policy (*Regulation of Development on Coastal Bluff Tops*). That discussion acknowledged past erosion problems in that area of the Dean's Creek Cliff/Bluff Top and the subject LCP policy that required that the well be set back an additional distance than what was initially proposed by the applicant."

The next paragraph states:

"Essentially, either the well must be located at least 50 feet away from the creek bluff top edge, or a geotechnical report must be completed and submitted for review and approval in order to assess the integrity of the earth material within that 50- foot set back before a well could be located in that area".

No such geotechnical report was provided in response to this letter but the well drilling location was moved to be **50 feet from the creek bluff top edge**.

I would now like to refer you to the recently submitted very brief 4 page "Updated Biological Resources Assessment Report and Response to Biological Information Requests for 199 Arbor Lane, Moss Beach, CA prepared by Coast Ridge Ecology (APN-037-123-043)". There is one obvious error, one taxonomic classification that is in dispute and there is a misrepresentation of tree locations in a photograph as well partial view of eroded Cliff/Bluff Top.

The error is the statement that on the first page stating:

"The proposed building envelope is approximately 80 feet from the bluff edge and the Pacific Ocean".

There are two corner stakes that are at 67 and 62 feet or less from the bluff edge and the Pacific Ocean. That is not the focus of this analysis however and will be addressed by other parties.

In this revised document on page 4 the company preparing this document do use the correct term when referring to the southern end of the property when they use the term **bluff top**:

“These trees are located on the flat **bluff top** within the building envelope (photo 5).”

They have identified this correctly as it is, a **bluff top** but they have misrepresented that “photograph 5 shows these two trees 27” and 36” DBH”. In fact, Photograph 5 only depicts the smaller of the two trees and nowhere in the report is the size, location or proximity of the larger tree to the eroded Cliff/Bluff top presented. In fact that rather large 36” DBH tree is approximately **18 feet from the undercut eroded Cliff/Bluff tops.**

The authors go on to state that:

Removal of these trees would not cause any impact to Dean’s Creek as would be no disturbance to the **steep** slope that slopes down to Deans Creek”.

It does not seem reasonable that these authors who are not soils and geotechnical experts can make such claims which seem well outside their stated focus “Biological Surveys, Monitoring, Permitting, Research”. There is a further careful omission of the reality of **Cliff/Bluff tops erosion** and the location of that 36 “ tree. The authors have either carefully or carelessly provided an image in their “photo 1” which does not depict the Cliff/Bluff top where erosion is more obvious (see photo 1A & 1B) showing entire wall or Cliff face on southern end of Cliff/Bluff Top.

4. There is one more data point that has not been previously pointed out to the County or California Coastal Commission from the previous more detailed and out of date initial Biological Resource Assessment prepared by Kopitov Environment LLC, which is dated May 9, 2015. In that report the authors state on page 12:

“The arroyo along the south boundary of the property was too **steep to safely traverse**; however, biologist examined the mouth of Dean’s Creek that flows to Kelp Cove, Fitzgerald Marine Reserve.”

This is an assessment of the Kopitov Environment team regarding the Cliff/Bluff Top at the southern edge of the development which has been the focus of much of this analysis. Indeed if someone were to fall off that **Cliff/Bluff Top** they would likely break their neck and/or suffer serious bodily harm from falling 30 feet to the bottom of the Cliff/Bluff Top. This also explains that in the 2.5 page Geotech update provided at the top of this analysis and repeated here:

“There **does not appear** to have been further erosion or retreat of the Dean Creek Drainage side walls during the winter of 2016-1017.”

An assessment cannot be made of the erosion on the Creek/Bluff Top wall by looking at aerial photographs or standing on top of the Creek/Bluff top. Rather you have to climb through dense vegetation just below the Creek/Bluff Top to view and see the erosion of the concave Cliff face that has occurred in the past 12 months.

The core of the concern about the inappropriate citing of the proposed development of lot 12, only 18-20 feet from a **Cliff/Bluff Top** that is above Dean's Creek, within Sunshine Valley is that it is directly connected to one of Northern California's premier natural wonders the Fitzgerald Marine Reserve. The proximity of the proposed development site, as mentioned in passing by the Geotech and Biological Assessments Report, is that it is attempting to locate itself so dangerously close to Dean's Creek which is adjoining the fragile yet beautiful publicly assessable Marine Reserve is completely glossed over.

If this development with a remote developer is allowed to place a project so close to an unstable Cliff/Bluff Top the concern of many area residents is that portions of the development will erode into Dean's Creek and the owners current or future (when and if the development is sold to another party) will simply abandon the development rather than bear the cost and burden of removing the development materials and/or substances that may fall into Deans Creek and enter the ecosystem of the Fitzgerald Marine reserve. At least one Ranger of the Fitzgerald Marine Reserve has already expressed surprise and shock that a development could be situated so close to the Cliff/Bluff Top above Dean's Creek. This topic will be discussed with the non-profit organization Friends of the Fitzgerald Marine Reserve and Surf Riders Foundation representatives among other non-profits concerned about the health and future well-being of this unique Marine Reserve.

Summary of this Initial Analysis:

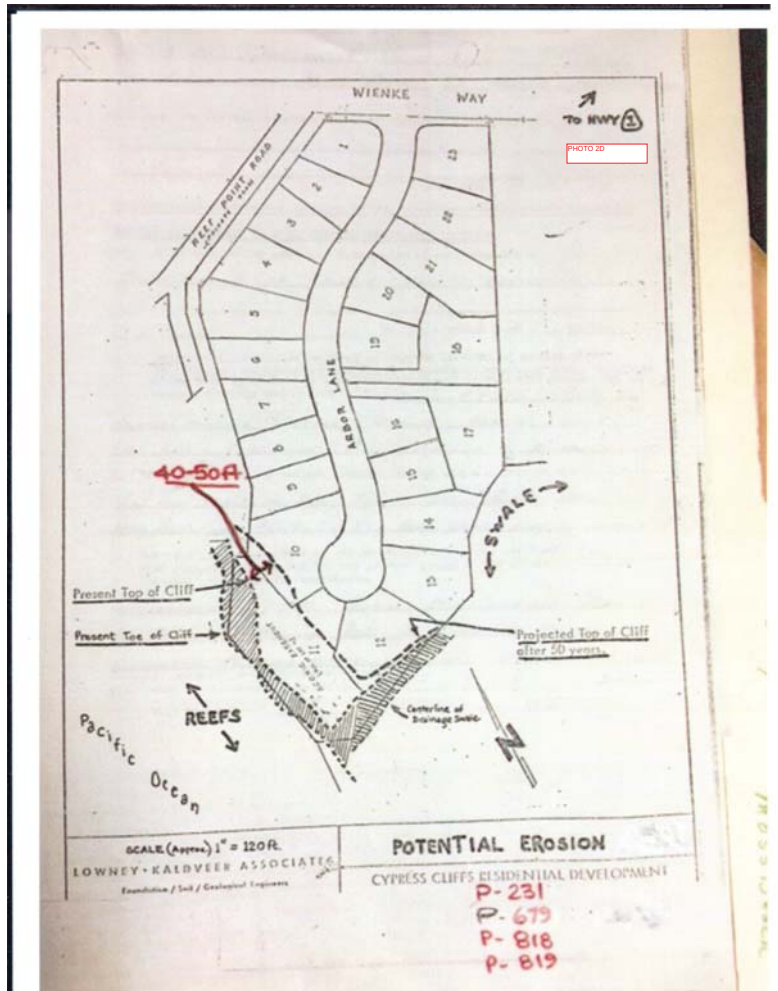
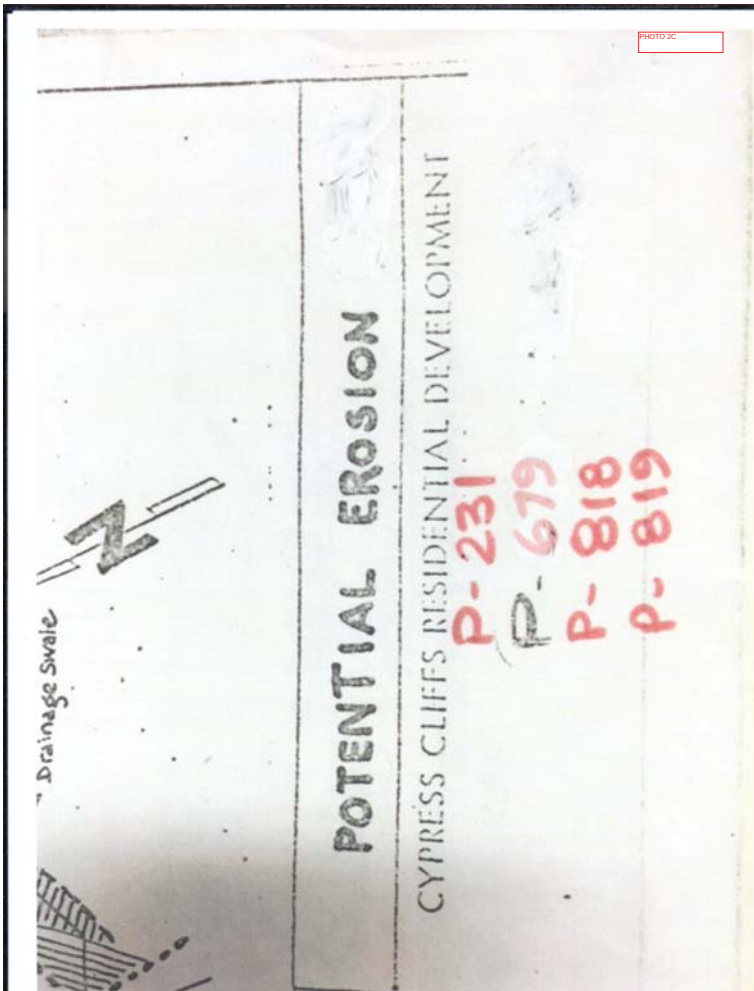
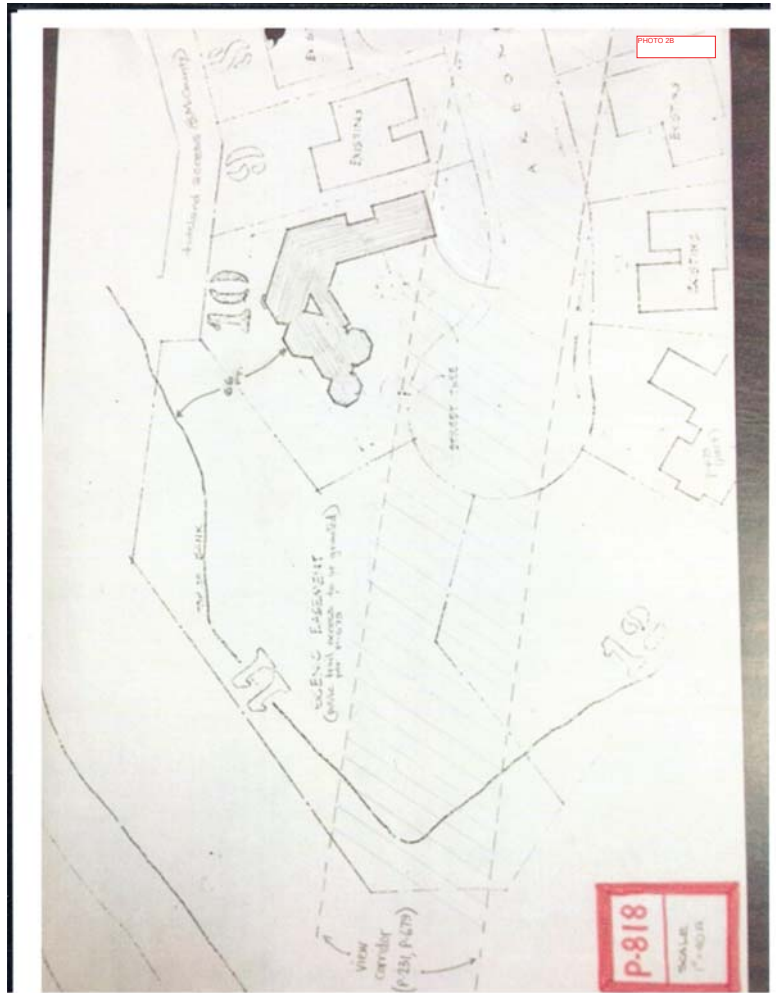
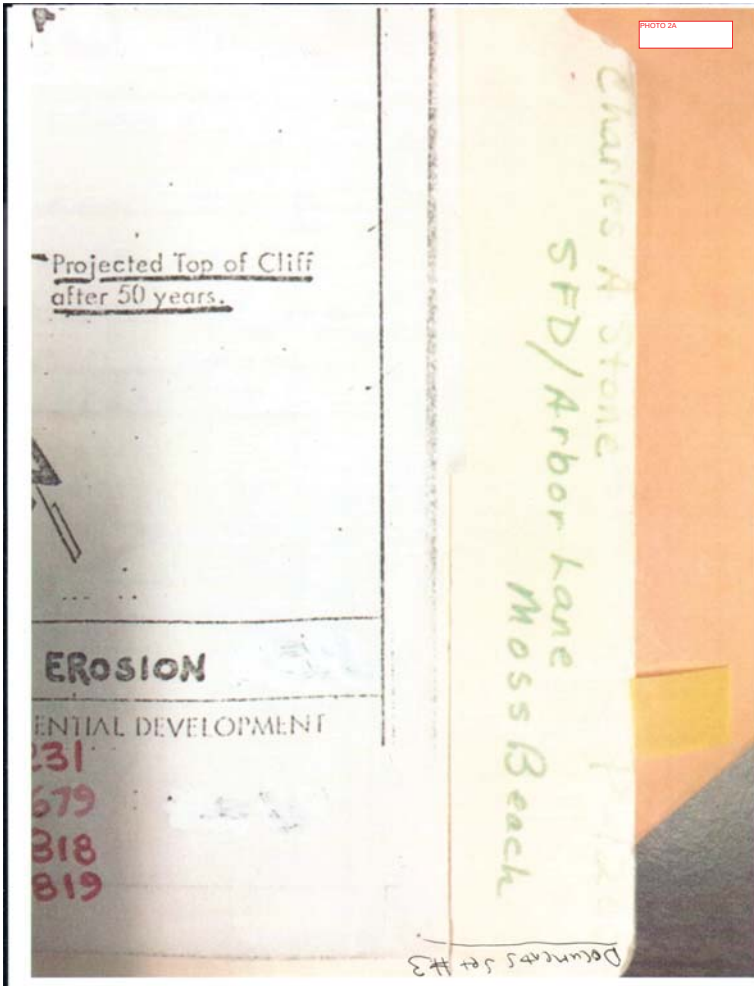
It has now been demonstrated by photographs, words and documents in possession of California Coastal Commission, County of San Mateo, privately retained contractors and my own on site observations over the past 20 years, that there is an unstable Cliff/Bluff Top that is currently 18-20 feet from a proposed 3800 sq. foot development on lot 12. It is also verified that this Cliff/Bluff Top is directly linked to the Fitzgerald Marine Reserve via Dean's Creek. It is recommended that the development plan not remove the 36 " DBH tree that is 18 feet or less from the unstable Cliff/Bluff top at the southern end of the proposed development. It is also strongly recommended that the footprint and structure of the proposed development be situated at least 50 feet from the unstable Cliff/Bluff Top. The constraints of this site are challenging for the developer but the realities of the site and view corridors have been part of this site since 1979 when one of the previous owners inquired with the status of the view corridor in 1979 (see #4A/4B/4C/4D/4E/4F at the end of this document).



PHOTO 1A



PHOTO 1B

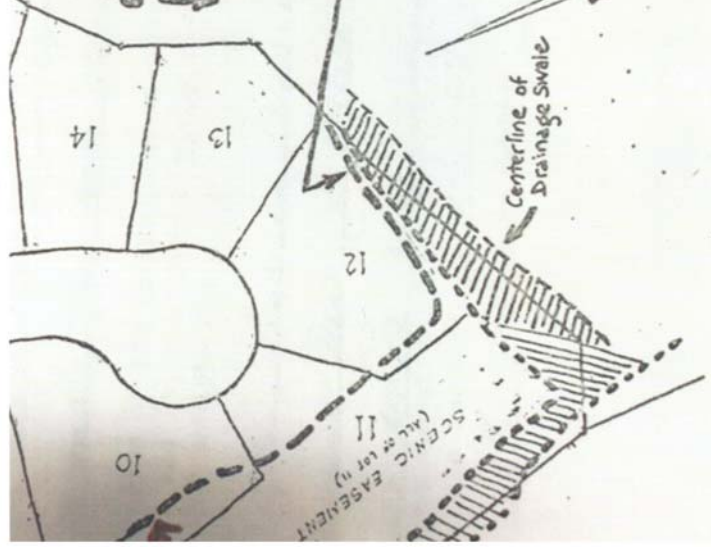


Projected Top of Cliff
after 50 years.

Centerline of
Drainage Swale



Swale



Environmental Services Agency



Planning and Building Division

County of San Mateo

Mail Drop PLN122 · 590 Hamilton Street · 2nd Floor · Redwood City
California 94063 · Telephone 415/363-4161 · Fax 415/363-4849

Board of Supervisors
Ruben Barrales
Richard S. Gordon
Mary Griffin
Tom Huening
Michael D. Nevin

**Director of
Environmental Services**
Paul M. Koenig

Planning Administrator
Terry L. Burnes

June 4, 1997

RECEIVED
JUN - 9 1997

Jim Wilkinson
Wilkinson Enterprises, Inc.
P.O. Box 3218
Half Moon Bay, CA 94019

Dear Mr. Wilkinson:

SUBJECT: Clarification of Locational Requirements for Domestic Well
Placement on APN 037-123-430; File No. CDP 96-0045

As you know, the Zoning Hearing Officer's February 6, 1997 approval of CDP 96-0045 to drill a domestic well at the above cited parcel included a condition (Condition No. 1 of the decision letter dated February 10, 1997) that restricted the well location to within a prescribed envelope. In addition to those constraints, however, the Zoning Hearing Officer (ZHO) stated at the hearing that the well must be set back an additional distance from the creek bluff top edge, in order to comply with attached Local Coastal Program (LCP) Policy 9.7 (*Regulation of Development on Coastal Bluff Tops*). That discussion acknowledged past erosion problems in that area of the creek bluff top and the subject LCP policy that required that the well be set back an additional distance than what was initially proposed by the applicant. Wells are considered development and the ZHO indicated that it was subject to the same LCP policy criteria as any development would be relative to an ocean bluff top, due to its proximity to and contributive erosion impacts by the ocean.

Essentially, either the well must be located at least 50 feet away from the creek bluff top edge, or a geotechnical report must be completed and submitted for review and approval in order to assess the integrity of the earth material within that 50-foot setback before a well could be located in that area.

While the property owner may not have expected that a geotechnical report would be required prior to submittal of a building permit for the residence, it is the only mechanism by which Planning is able to assess the integrity of that 50-foot area in order to comply with the applicable LCP policy if you choose to locate the well in that area. The geotechnical report

Jim Wilkinson
June 4, 1997
Page 2

could also assess the entire site for the future development of the residence as well. If you choose to proceed on that track, you should contact Jay Mazzetta, in our Geotechnical Section at 363-1838, to discuss this issue.

I apologize that the letter of decision was not specific to this point, but the ZHO's directives and admonitions must be adhered to and supersedes the narrower dictates of Condition No. 1 as previously mentioned. Also, remember that the Environmental Health Division needs to have the sewer lateral that serves the adjacent property (owned by Steven King) shown on your submitted survey.

If you have any further questions, please contact me at 415/363-1837.

Sincerely,



David Holbrook
Project Planner

DH:fc - DJHH0834.6FH

Attachment

cc: Mr. William Rozar, Development Review Manager
Mr. Eugene Barhar
Ms. Elizabeth Vesprimi
Mr. Steven King

Jan 1998

Feb 1998
meeting
presentation
Planning
10/10/98

PHOTO 3C



↓ ↓ ↓

Before Feb. 1997

PHOTO 3D



After Jan
1998





PHOTO 3F



M.H. PODELL COMPANY, 819 MITTEN RD., P.O. BOX 4408, BURLINGAME, CA. 94010. 697-4000

April 4, 1979

John - can you
check our file
on this one
MM was phoning
staff member
EJY

Central Coast
Regional Coastal Zone
Conservation Commission
701 Ocean Street
Room 300
Santa Cruz, CA 95060

RECEIVED
APR 5 1979
CENTRAL COAST COMM.
REGION III

Re: Lot #12, Cypress Cliffs Subdivision

Gentlemen:

I am enclosing herewith a map of Cypress Cliffs sub-division in the Moss Beach area which shows a scenic corridor running across a portion of lot #12. This corridor was imposed by you in 1975.

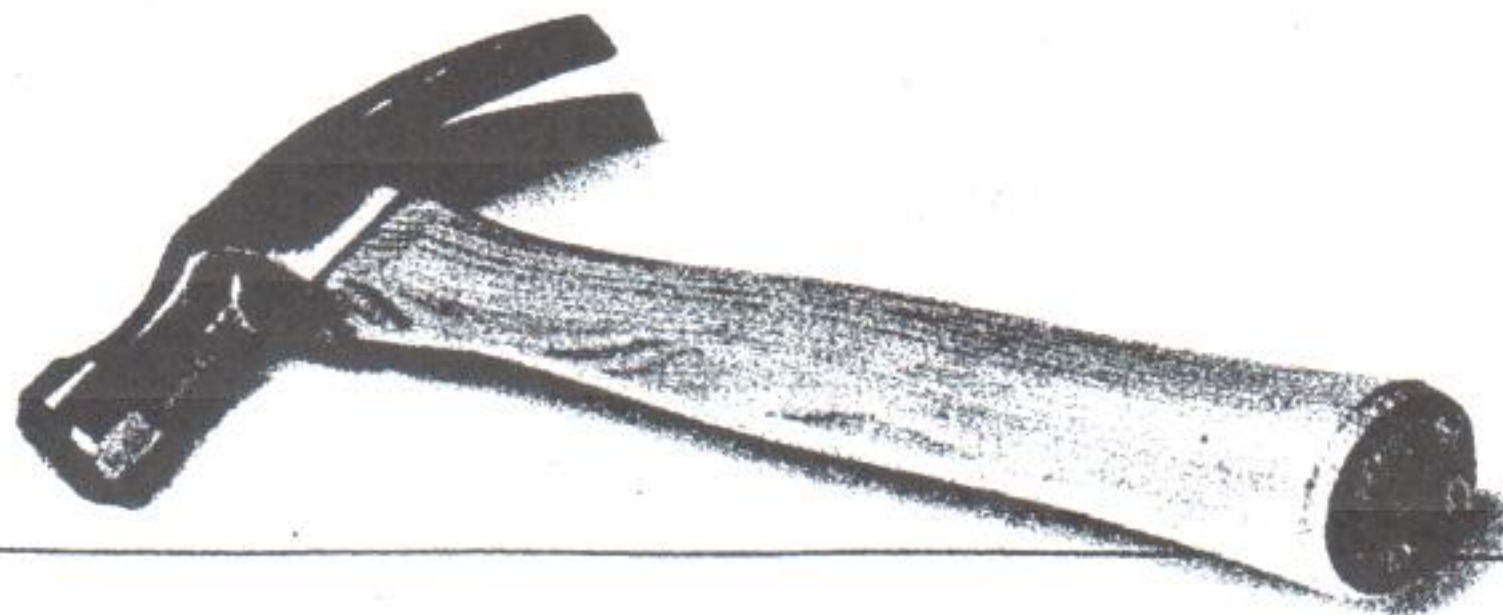
I am the owner of lot #12 and would like to have an up-to-date legal description of the corridor if it is available; a description of just what the corridor entails; what limitations it imposes and the height of buildings, fences and planting.

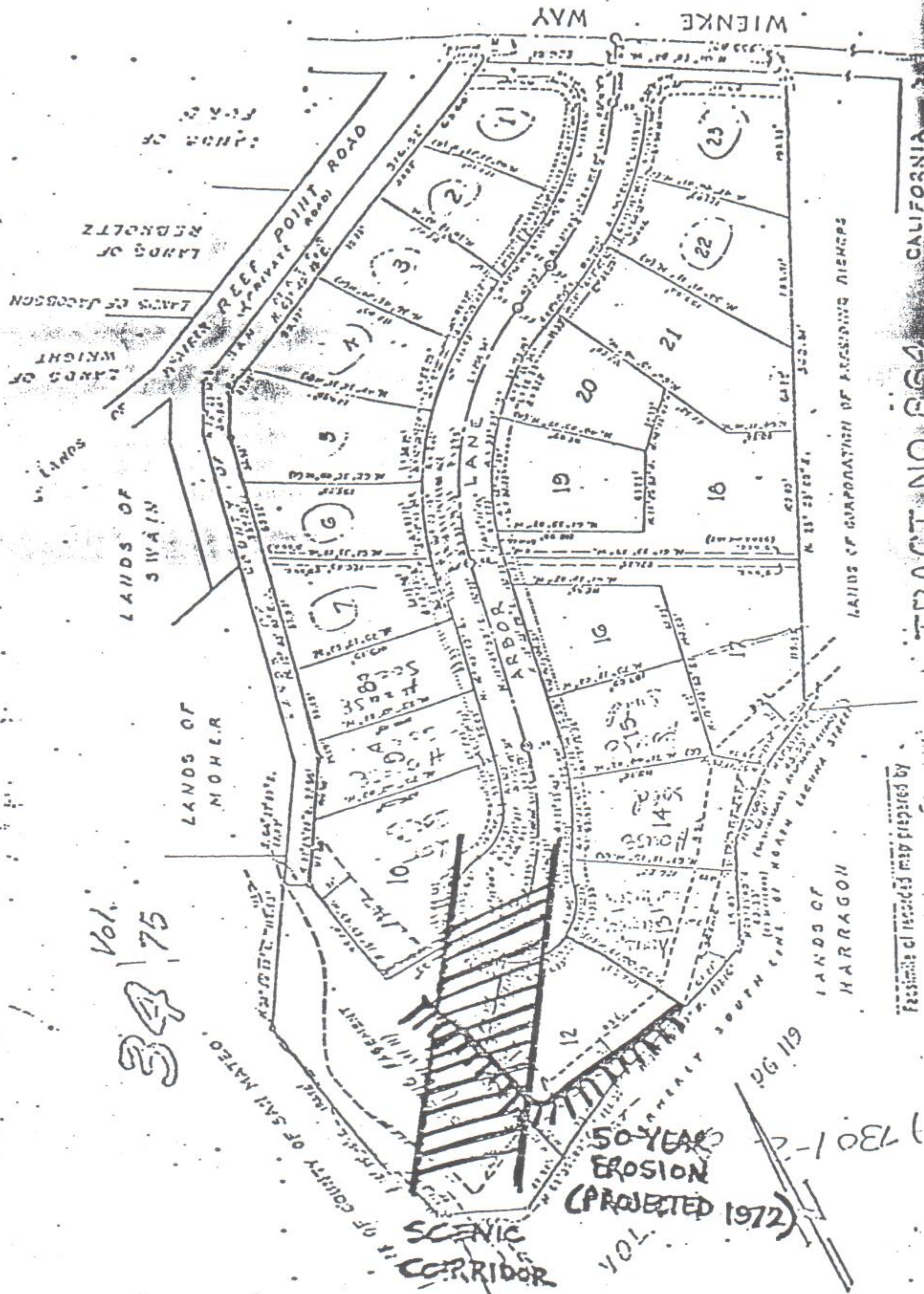
Thank you in advance for your cooperation.

Very truly yours,


Michael H. Podell

Encl.





Vol. 34, 75

Map prepared by

CALIFORNIA

**CALIFORNIA COASTAL COMMISSION
CENTRAL COASTAL REGIONAL COMMISSION**

OCEAN STREET, ROOM 310
TA CRUZ, CALIFORNIA 95060
(408) 426-7390



May 9, 1979

Michael H. Podell
P.O. Box 4408
Burlingame, Ca. 94010

Dear Mr. Podell:

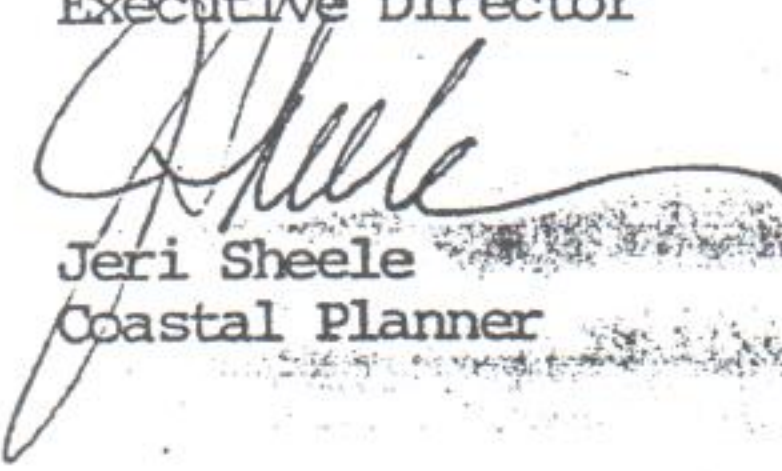
We received your letter regarding the scenic corridor including part of lot #12 of the Cypress Cliffs subdivision.

No changes to the scenic corridor conditions have occurred. The corridor remains as described on the map attached to your letter (copy enclosed). All the Coastal Permits issued in this subdivision have been conditioned so as not to intrude into the scenic corridor.

If you have further questions, we would be glad to set up an appointment for you to discuss a permit application.

Sincerely,

Edward Y. Brown
Executive Director


Jeri Sheele
Coastal Planner

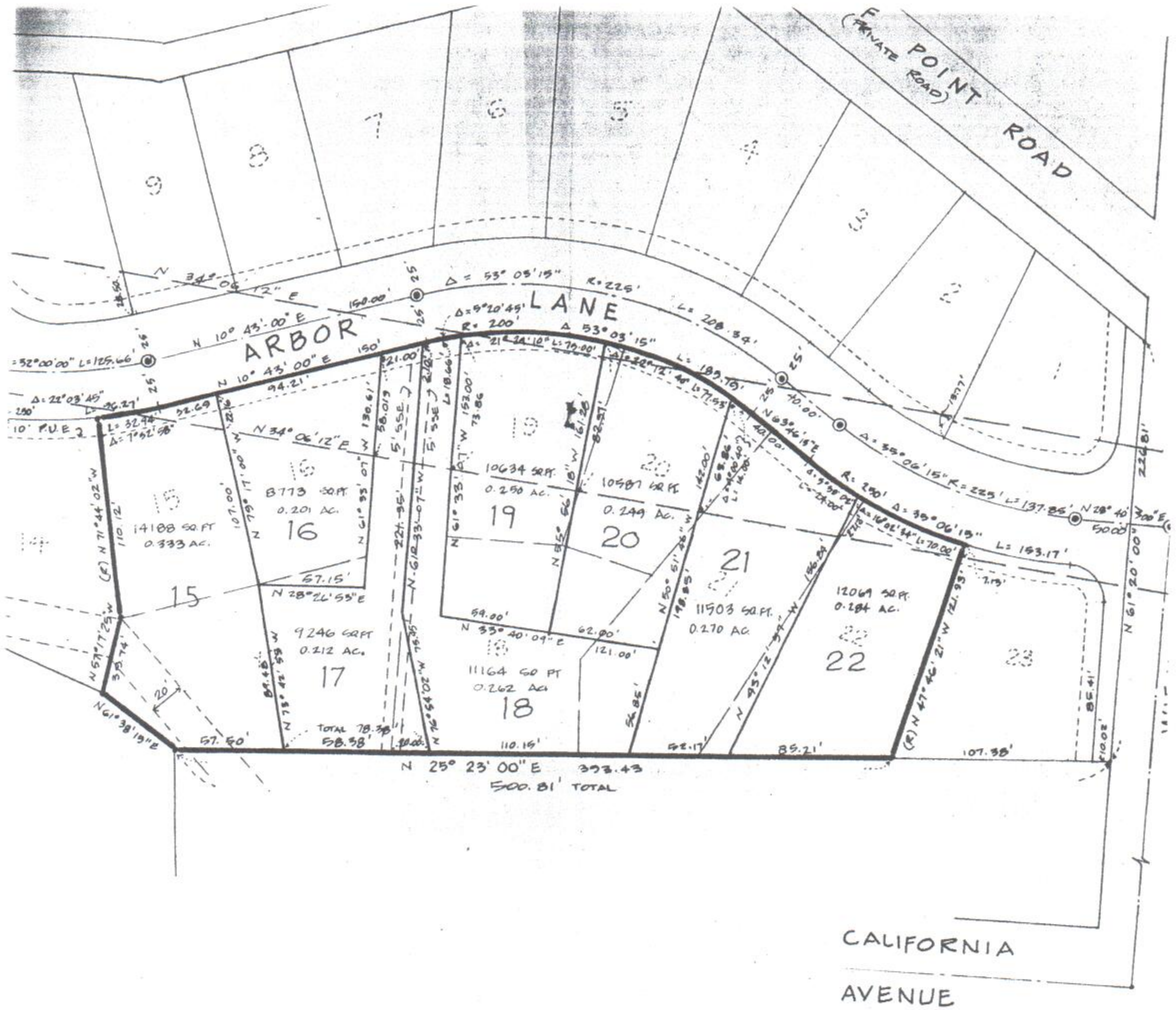
JS:cm

① INDICATES STANDARD CITY MONUMENT - FOUND
• " 3/4" IRON PIPE FOUND

P.U.E.	PUBLIC UTILITY EASEMENT
S.S.E.	SANITARY SEWER EASEMENT
B.S.L.	BUILDING SETBACK LINE

THE BLUE BORDER INDICATES THE BOUNDARY OF THE LAND
SUBDIVIDED BY THIS MAP.

ALL DISTANCES AND DIMENSIONS SHOWN ON THIS MAP ARE GIVEN IN FEET AND DECIMALS THERE OF.



PARCEL MAP

BEING A LOT LINE ADJUSTMENT OF LOTS 15, 16, 17, 18, 19, 20, 21, & 22 TRACT NO. 864 "CYPRESS CLIFFS SUBDIVISION" AS SHOWN ON THAT CERTAIN MAP FILED FOR RECORD IN VOLUME 75 AT PAGES 33 & 34 ON MAY 4, 1972 IN THE COUNTY RECORDER'S OFFICE OF

SAN MATEO COUNTY CALIFORNIA

SCALE = 1" = 60'

SEPTEMBER 1975

BASIS OF BEARING

THE BEARING N 10° 43' 00" E OF THE CENTERLINE OF ARBOR LANE AS SHOWN ON THAT CERTAIN MAP, TRACT NO. 864 "CYPRESS CLIFFS SUBDIVISION", FILED FOR RECORD IN VOLUME 75 AT PAGES 33 & 34 ON MAY 4, 1972 IN THE COUNTY RECORDER'S OFFICE OF SAN MATEO COUNTY, CALIFORNIA, WAS TAKEN AS THE BASIS OF ALL BEARINGS ON THIS MAP.

WM. JAY HAMMOND
CIVIL ENGINEER
999 COMMERCIAL ST.



Memo to Coast Side Design Review

RE: Public Hearing of Coast Side Design Review On Nov. 9, 2017

Specific Topic: 199 Arbor Lane, PLN2016-00444 Arbor Lane Moss Beach

Date: October 31, 2017

Owner: Zubar LLC, applicant Carlos Zubar

Contents: **Specific Concerns Regarding Proposed Design Resubmission**

From: Steven King, 191 Arbor Lane, Moss Beach California

Executive Summary of Specific Concerns of this Memo:

It is recommended to the Coast Side Design Review that this project be revised and redesigned to have the proposed structure be 50 feet from the Cliff Bluff Top Edge of Deans Creek in the Sunshine Valley. The current design locates this home 20 feet or less from the Cliff Bluff Top edge of Deans Creek. The county may consider this not a design matter but it is a fundamental design matter.

Below is a brief Summary of why this recommendation is being made.

1. In 1984, a heavy rainfall and storm washed away 20 feet of land on the Northern side of Deans Creek of the adjacent property, 191 Arbor Lane. The current design locates this home 20 feet from the actively eroding Deans Creek Bluff Top Edge.
2. In 1997, Mr. David Holbrook of the San Mateo County Planning division, after seeing evidence at a public open forum regarding the 199 Arbor Lane site, advised the then developers of this lot, in an official letter (see attached) that due to the presence of the Cliff Bluff Top Edge that a well drilling site would need to moved 50 feet back from the Cliff Top Edge. Mr. Holbrook also cited LCP policy 9.7 (*Regulation of Coastal Bluff Tops*, now LCP 9.8). The County has mysteriously reversed its view that this Creek Bluff Top edge is subject to LCP policy 9.8 but the physical reality of the Creek Bluff Top edge remains the same. **The reversal of the planning divisions previous determination concerning the Cliff Bluff Top on Deans Creek is an accommodation being made by the county that is surprising but , it may facilitate the inappropriate issuing of a building permit that puts at risk both private and public properties, especially if the 36 " DBH tree 18 feet from the Cliff Bluff Top edge is removed as part of the building process to accommodate the current proposed design.**

3. Continued top and bottom erosion of Deans Creek Bluff Top edge and another heavy storm and water flow through Deans Creek can easily bring this proposed development or portions of the home down into Deans Creek and subsequently into the Fitzgerald Marine Reserve. The suggestion that a design including 4 posts into the ground will entirely mitigate this erosion is unsubstantiated.

Thank you for review of these concerns related to the design of this proposed development.

Environmental Services Agency



Planning and Building Division

County of San Mateo

Mail Drop PLN122 • 590 Hamilton Street • 2nd Floor • Redwood City
California 94063 • Telephone 415/363-4161 • Fax 415/363-4849

Board of Supervisors
Ruben Barrales
Richard S. Gordon
Mary Griffin
Tom Huening
Michael D. Nevin

Director of
Environmental Services
Paul M. Koenig

Planning Administrator
Terry L. Burnes

June 4, 1997

RECEIVED

JUN - 9 1997

Jim Wilkinson
Wilkinson Enterprises, Inc.
P.O. Box 3218
Half Moon Bay, CA 94019

Dear Mr. Wilkinson:

SUBJECT: Clarification of Locational Requirements for Domestic Well
Placement on APN 037-123-430; File No. CDP 96-0045

As you know, the Zoning Hearing Officer's February 6, 1997 approval of CDP 96-0045 to drill a domestic well at the above cited parcel included a condition (Condition No. 1 of the decision letter dated February 10, 1997) that restricted the well location to within a prescribed envelope. In addition to those constraints, however, the Zoning Hearing Officer (ZHO) stated at the hearing that the well must be set back an additional distance from the creek bluff top edge, in order to comply with attached Local Coastal Program (LCP) Policy 9.7 (*Regulation of Development on Coastal Bluff Tops*). That discussion acknowledged past erosion problems in that area of the creek bluff top and the subject LCP policy that required that the well be set back an additional distance than what was initially proposed by the applicant. Wells are considered development and the ZHO indicated that it was subject to the same LCP policy criteria as any development would be relative to an ocean bluff top, due to its proximity to and contributive erosion impacts by the ocean.

Essentially, either the well must be located at least 50 feet away from the creek bluff top edge, or a geotechnical report must be completed and submitted for review and approval in order to assess the integrity of the earth material within that 50-foot setback before a well could be located in that area.

While the property owner may not have expected that a geotechnical report would be required prior to submittal of a building permit for the residence, it is the only mechanism by which Planning is able to assess the integrity of that 50-foot area in order to comply with the applicable LCP policy if you choose to locate the well in that area. The geotechnical report

Jim Wilkinson
June 4, 1997
Page 2

could also assess the entire site for the future development of the residence as well. If you choose to proceed on that track, you should contact Jay Mazzetta, in our Geotechnical Section at 363-1838, to discuss this issue.

I apologize that the letter of decision was not specific to this point, but the ZHO's directives and admonitions must be adhered to and supersedes the narrower dictates of Condition No. 1 as previously mentioned. Also, remember that the Environmental Health Division needs to have the sewer lateral that serves the adjacent property (owned by Steven King) shown on your submitted survey.

If you have any further questions, please contact me at 415/363-1837.

Sincerely,



David Holbrook
Project Planner

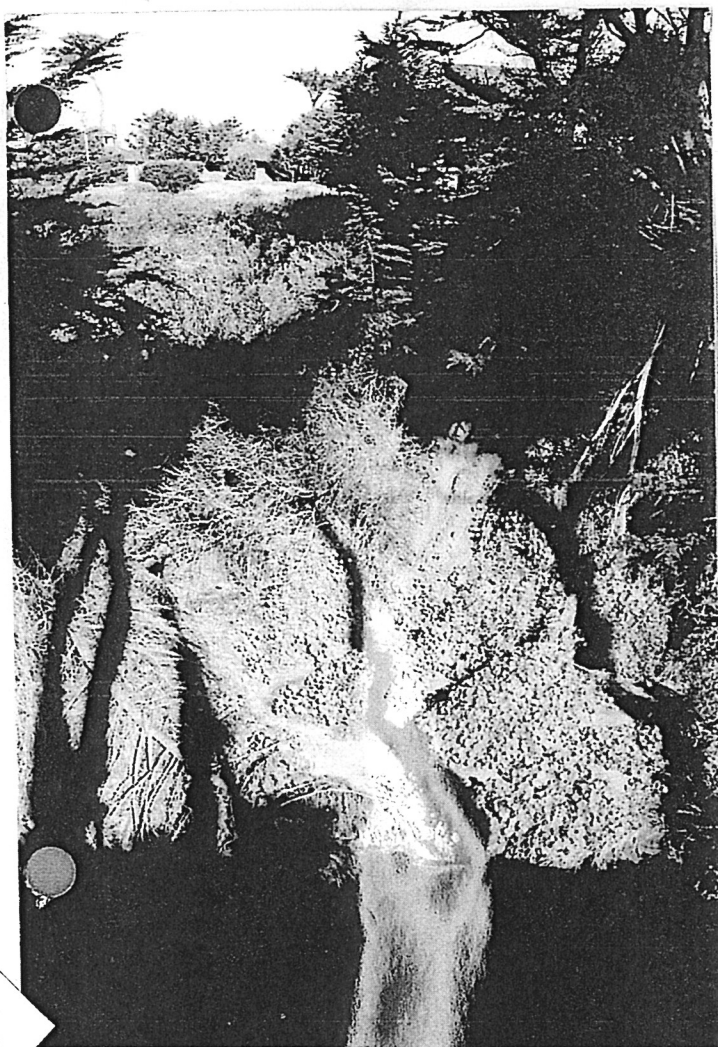
DH:fc - DJHH0834.6FH

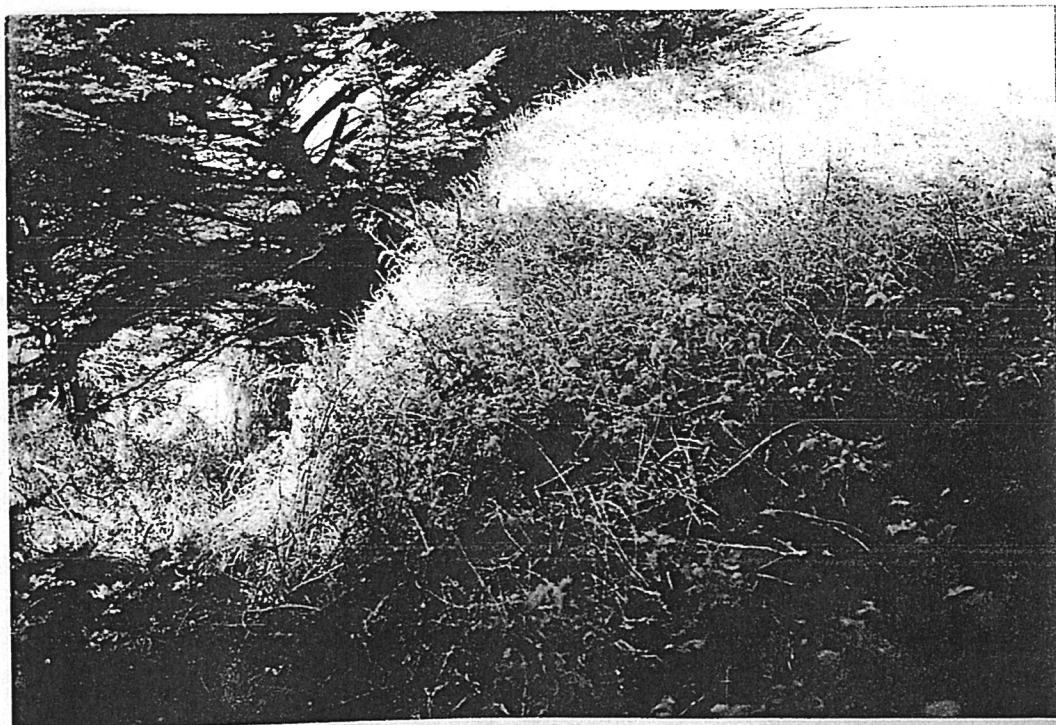
Attachment

cc: Mr. William Rozar, Development Review Manager
Mr. Eugene Barhar
Ms. Elizabeth Vesprimi
Mr. Steven King

JAN 1972

Feb 1972
meadow
P. W. 100 ft
P. 100 ft
100 ft







Memo to: Carmelisa Morales
Planner II, Planning and Building Department
County of San Mateo

RE: Letter of Nov. 3, 2017 to Carlos Zubieta from Coast Ridge Ecology

Specific Topic: 199 Arbor Lane, PLN2016-00444 Arbor Lane Moss Beach

Date: November 15, 2017

Contents: Correcting Record of Statements in “response to comments on Updated Biological Resources Assessment Report for 199 Arbor Lane, Moss Beach, CA. (APN 037-123-043) dated November 3, 2017 and provided to the developer C. Zubieta by Coast Ridge Ecology

From: Steven King, 191 Arbor Lane, Moss Beach California

The non bolded text below is from the Coast Ridge Ecology communication of Nov. 3, 2017

Comment #1:

The commenter says there is one ‘obvious error’ in the Updated BRA. The commenter is referring to a statement that the distance between the edge of the bluff and the Pacifica Ocean was estimated to be 80 feet. The commenter says that the distance is actually between 62 and 67 feet.

Response to Comment #1:

Based on the site plan for 199 Arbor Lane dated October 14, 2016; the estimated distance from the wood deck (which forms the western edge of the building envelope), the distance to the top of the bluff above the Pacific Ocean varies between 88.9 feet and 71.3 feet. This distance was averaged and estimated to be 80 feet.

This comment is incorrect based on measurement taken from the story poles as seen the first photograph in this submission. Measurements from the green post in the right side of photograph

with red circle and the other post also with red circle at the edge of the view corridor are 62 and 67 feet as of October 2017. Any suggestion that the development footprint is all 80 feet from the Coastal Cliff Bluff Top above the protected sensitive habitat of the Fitzgerald Marine Reserve is false.

Comment #2:

The commenter says there is 'one taxonomic classification that is in dispute'.

Response to Comment #2.

The commenter does not provide any additional information to back up the statement that a 'taxonomic classification' in the Update to the BRA is 'in dispute'. No example of a taxonomic classification is given, and it's not clear what the commenter is referring to.

The taxonomic classification concern and dispute is as follows. I am a Ph.D. botanist trained at the New York Botanical Garden. An initial consultation with actual taxonomic specialist working on the genus *Fragaria* revealed that the classification and identification of the wild strawberry referred to in California Coastal Commission correspondence dated July 14, 2017 may in fact be *Fragaria vesca* subspecies *californica* which is protected by LCP policy 7.49 and which is defined as a unique species. The fee for service Botanist Mr Kramer has suggested that the species on 199 Arbor is *Fragaria chiloensis*. There are 4 subspecies of *Fragaria vesca* and it appears he may have confused the morphology of what he believes is *F. chiloensis* with the morphology of *F. vesca* subspecies *californica*. There is also a hybrid *Fragaria* (x) *brinhurstii* that is a hybrid of *F. chiloensis* and *F. vesca* subsp *californica* that occurs on the coast of California including San Mateo County indicating that the taxonomy and morphology of *Fragaria* species on the San Mateo coast is not a simple or clear cut in terms of taxonomic identification. Unless Mr. Kramer collected voucher herbarium specimens and submitted them to a *Fragaria* taxonomic specialist for verification it is not reasonable to state that what he looked at is not in fact *Fragaria vesca* subspecies *californica*. He did not seem to be aware of the actual correct nomenclature for the species and subspecies of concern mentioned

in the California Coastal Commission letter referenced above which brings into question his statement provided by Coast Ridge Ecology.

Comment #3b:

The commenter questions the statement in the Update to the BRA that 'removal of the trees would not cause any impact to Dean Creek, as there would be no disturbance to the steep slope that slopes down to Dean Creek'. The commenter also states that 'the author does not have the qualifications' to make this evaluation. The commenter also states that there was 'careful omission of the reality of bluff top erosion',

Response to Comment #3b:

The two Cypress trees referred to by the commenter are both located on the flat bluff top within the proposed building envelope, and are not located along the edge of the bluff. As a biologist with over 22 years of professional experience, having observed tree removals in many types of terrains, I am sure these trees could be easily removed without causing erosion to the edge of the bluff and Dean Creek, based on their distance from the edge of the bluff; however the project's Civil Engineer and Geologist should evaluate this. There was no 'careful omission of the reality of bluff top erosion' as the commenter states.

This 36 " DBH tree is 18 feet from the concave eroded Cliff Bluff Top and is 10 feet from our home, 191 Arbor Lane. This opinion is caveated by suggesting "a Civil engineer and geologist should evaluate this." We agree that his opinion is not valid, we have been in this location for 25 years and have documented and witnessed trees eroding into Dean Creek (see second photograph with tree fallen into creek due to erosion) by natural process's without any human removal of trees or drilling or grading on the edge of Deans Creek Cliff Bluff Top. In addition the original Biological Resources report provided to the applicant by Kopitov Environment LLC dated May 9, 2015 stated the truth that portions of the Deans Creek Bluff Top were "to steep to safely traverse". This also applies to the misleading statement below.

Mr. Kobernus also stated: It should be noted that in some areas

near the property at 199 Arbor Lane, the bluff edge that borders the slope that descends to Dean Creek is steep, but not too steep to walk down. I traversed the slope several times when taking distance measurements between the property boundary and the riparian corridor and Dean Creek itself. The bluff edge is well vegetated with native brush (California blackberry) in places and Monterey cypress trees. The project's Civil Engineer and Geologist should provide an evaluation for the potential for erosion of this slope and any potential for impact from the proposed development.

This is another example of selective and misleading fee for service contractor statements. There parts of the Creek Bluff Top slope that can be traversed but not the 30-35 ft section that has a vertical face as depicted in the second attached photograph. It is that vertical Creek Bluff Top that is currently 20 feet or less from the proposed development. Mr. Kobernus did not walk down the vertical face but other areas of the slope that are not vertical. We would be very happy to be present and have a video taken of Mr. Kobernus “walking down the vertical face” which is not possible. It is that face that is of great concern to us. I also note the Geotech reports place a 12 month time limit and the reliability of their reports, which is very wise and appropriate given the location of this development project located between to eroding Cliff Bluff Tops.





Shoreline armoring to protect development in Montara, Moss Beach, & Princeton

Midcoast Community Council
December 9, 2015
(L. Ketcham)

1

Montara Beach



Only 4 years after construction, in 1983 --
\$750,000 heap of rocks, 460 feet long, installed on the public beach



Montara Beach

1983 El Niño storms –
emergency armoring for
the Chart House restaurant

Historical erosion annual averages
can be misleading.

Coastal bluff erosion often occurs
in dramatic seemingly unexpected
events during winter storms.

The reaction has been piecemeal
emergency armoring to protect
development without regard to
aesthetics, coastal access, or long-term
area shoreline dynamics.



Aesthetics: Alien boulders and
concrete slurry contrast harshly with
the surrounding natural landscape and
scar the view.

Maintenance & useful life:
Over 30 years old, the steep wall of
boulders protecting the restaurant is
undermined and hazardous.

Moss Beach: Reef Point Rd & Arbor Lane (Juliana to Sunshine Valley)



Reef Point Rd development and complete coastal armoring occurred prior to 1972. Extensive repairs have been necessary over the years.

Arbor Lane was subdivided in 1972 and developed, leaving a scenic easement on the shoreline, although half of that was armored in the 1980's to protect the nearest house.



Reef Point Rd 60's-era coastal armoring
viewed from Fitzgerald Marine Reserve beach access point 2002



Moss Beach: Sunshine Valley to Fitzgerald Marine Reserve Beach Access Ramp



Prior to 1983 public beach access existed both north and south of the FMR ramp.

1980's armoring rocks placed on the public beach to protect 3 homes – County approvals noted the wide beach and that lateral access would not be blocked.



View north from FMR beach access point, 2012





FMR to Sunshine Valley -- 2015

Even at low tide, public access along the shoreline is difficult and hazardous due to deteriorating riprap with precariously perched boulders overhead and strewn all over the beach.



Historic house at 101 Beach St --

Threatened by bluff erosion in 2002, instead of armoring the cliff, the house was moved inland onto a neighboring parcel.



10

Seal Cove development west of Ocean Blvd



All 4 houses seen in 1979 along the cliff edge have been demolished and removed.

11

Princeton shoreline



Unpermitted armoring and lack of enforcement by County or State



Unpermitted 1970's seawall undermined by loss of beach. Wave energy reflecting off shoreline armoring structures undercuts the beach and hastens erosion in front of the structure and neighboring properties.

12

Princeton shoreline

Rubble-strewn sandy beach at foot of Columbia – inevitable result of unmaintained armoring



Piecemeal armoring leaves protected development on a peninsula due to accelerated erosion of adjacent bluff.

13

Princeton shoreline



County approved shoreline development in late '90's. Emergency armoring added before construction even complete.

101 Vassar development permit appealed to CCC in 1999 -- condition added:



Deed restricted prohibition - no shoreline protective device now or in future.

14

Coastal Commission conditions added to shoreline development permits on appeal

(e.g. 1999: 101 Vassar; 2012: 263 Nevada; and 2014: 354 & 358 Princeton)

- Assumption of Risk, Responsibility, Waiver of Liability, and Indemnity Agreement regarding coastal hazards -- episodic and long-term shoreline retreat and coastal erosion, high seas, ocean waves, storms, tsunamis, coastal flooding, landslides, bluff and geologic instability.
- Shoreline armoring prohibited now or in the future.
- If the development is threatened by coastal hazards in the future that would typically bring about a shoreline armoring response, the Permittee shall remove/relocate threatened elements of the development away from such danger.
- Any debris that falls from the bluff top onto the beach or coastal waters shall be immediately removed and disposed of properly.
- Recorded Deed Restriction imposing these permit conditions as covenants and restrictions on the use and enjoyment of the property.

15

Vallemar Bluff

- unarmored
- proposed for development

The only way to save this beautiful shoreline is to give it plenty of space and allow it to retreat naturally.



16

Vallemar Bluffs Coastal Hazards Assessment

Presentation to the
Midcoast Community Council

Louis White, PE
Bob Battalio, PE

October 26, 2016



Summary

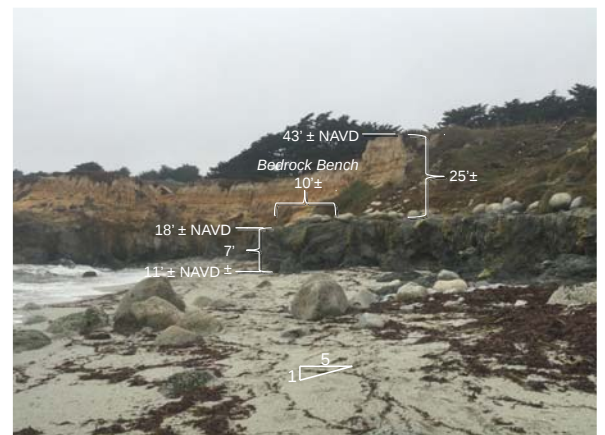
- Site Geology and Geometry
- Coastal Dynamics:
Observation of moderate wave runup event
- Conceptual Model of Bluff Erosion with Sea Level Rise
- Setback Distance Results
- Recommendations



Stratified Geology



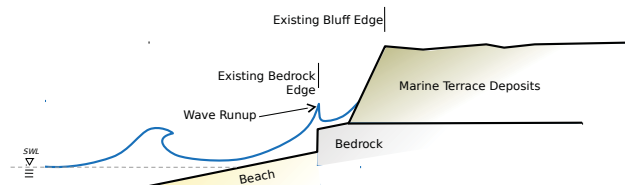
Measurements of Bluff



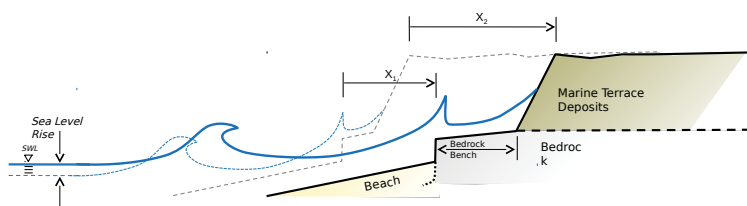
Wave Runup Observation



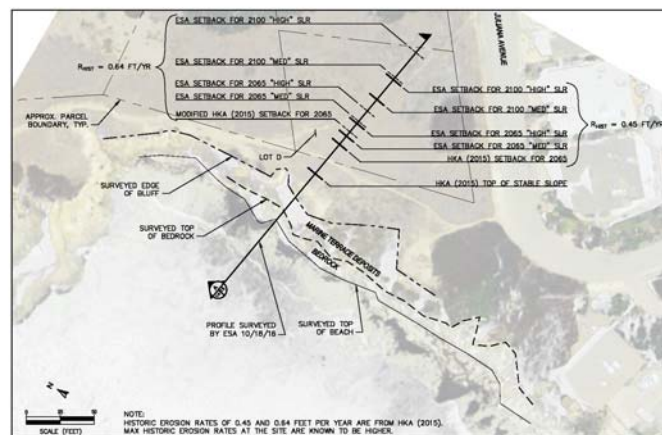
Bluff Modeling: Existing Conditions



Bluff Modeling: Future Conditions with Sea Level Rise



- Bedrock toe moves landward
- Bedrock bench gets wider
- Bluff top retreats

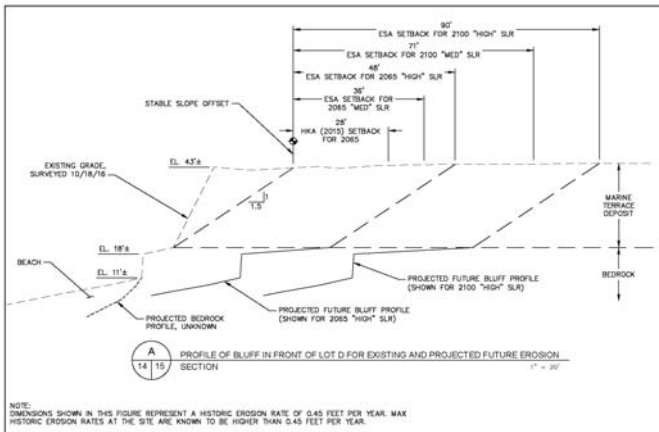


Vallejo Bluffs Coastal Hazards, 160715.00
 SOURCE: Imagery from California Coastal Conservancy (2012), ES&A Survey on 10/18/16, Parcel data from San Mateo County
 Estimated Setback Distances for Future Bluff Erosion at 2065 and 2100 for Medium and High Sea Level Rise Scenarios
 Figure 14



Recommendations

- Recommend larger development setback
 - Bluff erosion projected to be 2 to 3 times more than HKA study, using same historic erosion rate
 - Sea level rise will increase erosion more than 25%
 - Historic erosion rate used by HKA is less than maximum that has occurred
 - HKA used 0.45 feet per year (fpy), but computed up to 0.64 fpy
 - Prior study has rates up to 0.75 fpy for same site
 - Erosion gullies have formed at site, one with un-engineered fill
 - Additional setback distance needed to address uncertainty
 - Additional setback needed for duration of development (greater than 50 years)
- Consider that future wave runoff will exceed bluff top



SOURCE: ESA Survey 101816

Vallejo Bluffs Coastal Hazards, 10/07/15.00

Figure 15
Projected Future Erosion on Bluff Profile
for Historic Erosion Rate of 0.45 Feet per Year





550 Kearny Street
Suite 800
San Francisco, CA 94108
415.896.5900 **phone**
415.896.0332 **fax**

www.esassoc.com

memorandum

date October 26, 2016

to Lennie Roberts (Committee for Green Foothills)

from Louis White, PE

subject Vallemar Bluffs Coastal Hazards Assessment: Estimate of Accelerated Bluff Erosion due to Sea Level Rise (ESA Ref. #D160715.00)

1. Introduction

This memorandum presents the findings of a coastal hazards assessment, including estimates of future bluff erosion and wave uprush elevations, at an undeveloped bluff top site in Moss Beach, California. The Committee for Green Foothills (CGF) retained Environmental Science Associates (ESA) to review existing studies for the site by others and to conduct a technical analysis to estimate the potential future erosion limits associated with sea level rise (SLR). The analysis is based on information reported by others, as well as site observations and topographic data collected by ESA, and tide and wave data accessed from National Oceanic and Atmospheric Administration (NOAA) and Coastal Data Information Program (CDIP), respectively. Although the findings presented in this memorandum are intended to be used as a comparison to recommendations by others, they are not sufficient for locating structures, and this memorandum is not intended to do so.

The work described in this memorandum was completed by ESA staff members Hannah Snow, James Jackson, PE, Damien Kunz, Matt Norcott, and Louis White, PE, with review by Bob Battalio, PE. The information presented in this memorandum is intended solely for the use and benefit of the Committee for Green Foothills. No other person or entity shall be entitled to rely on the services, opinions, recommendations, plans or specifications provided pursuant to this agreement without the express written consent of ESA, 550 Kearny Street, Suite 800, San Francisco, CA 94108.

Background

A proposed residential development project in Moss Beach, at Vallemar Bluffs, is required by the San Mateo County Local Coastal Program (LCP), Section 9.8, to consider coastal bluff erosion for a 50 year time period. The 2.5-acre site, at the intersection of Vallemar Street and Juliana Avenue, is the last undeveloped private land in the San Mateo Midcoast area (Figure 1). Seven lots, which were consolidated from a 1908 subdivision, have multiple owners who have all agreed to submit an application for development of the property as a whole. The application was recently submitted to San Mateo County Planning (County) and is now undergoing a formal review process. The Applicant has reduced the number of proposed houses to five, eliminating development on

one lot closest to the cliffs. The County plans to prepare an Initial Study/Mitigated Negative Declaration for the project.



Figure 1
Project Site (in red), located in Moss Beach at Juliana Avenue and Valleymar Street

CGF retained ESA to provide professional engineering advice on coastal erosion issues at the site, as they relate to the future potential exposure of the proposed development to coastal erosion hazards. Specifically, CGF has opined that revisions to the project are needed because the proposed development on Lot D is too close to the bluffs and will likely be subject to bluff erosion over the 50-year life of the project. CGF has also indicated that allowing this lot to be developed will severely impact coastal access along the existing informal public access trail, impact public views of the coast from Juliana Avenue, as well as impact coastal prairie habitat, which is protected under the Coastal Act and San Mateo County LCP as Environmentally Sensitive Habitat Area (ESHA).

A coastal erosion study was prepared by Haro, Kasunich & Associates (HKA) in 2015 that recommended incorporating a 28-foot bluff setback distance from the top of a slope they estimated to be stable into the development plans (HKA 2015). The recommended setback distance included the projection of their estimated historic erosion rate plus a 25% increase in the historic erosion rate to account for the effects of sea level rise (SLR) over a 50-year project design life. The HKA (2015) study estimated a historic bluff erosion rate of 0.45 feet per year, which has been questioned by project stakeholders as being too low.

Erosion gullies, or swales, filled with imported materials, including soil, concrete debris, and tree trunks, located to the north and south of the promontory immediately opposite Lot D, may introduce additional erosion hazards to the proposed project. JCP (1990) describes a gully on the south side of the promontory as an active landslide approximately 40 feet in diameter and affecting an area approximately 18 feet inland from the existing bluff top. GeoForensics (2001) describes these features as erosion gullies, or drainage swales that extend from the bluff edge toward Lot D, based on photography from 1946. They report that the gullies were filled between 1946 and 1955 according to inspection of aerial imagery.

Several technical topics were identified by CGF as needing additional consideration in the analysis, including the following:

- Historic erosion rate seems low, and should consider additional aerial photographs and methods
- Erosion process with the stratified geology, and influence of the bedrock geometry on erosion of the bluff
- Low stability of the bluffs in the vicinity of Lot D as mapped in a San Mateo County Geologic Hazards Map
- Influence of the groundwater seeps in the bluff face on erosion and stability
- Influence of the gullies and landslides in the area on erosional hazards

Organization of this Memorandum

This memorandum is organized as follows:

- Section 2: Site Observations and Data Collection – a summary of the observations during site visits, topographic survey data, and other data used in the analyses
- Section 3: Climate Change and Sea Level Rise Background – describes guidance recommendations by the State of California, including scenarios, planning horizons, and amounts of sea level rise to be assessed
- Section 4: Analysis and Results – summarizes the technical methods and results of wave runup modeling and bluff erosion modeling

Summary of Findings and Recommendations

Based on the technical analyses conducted by ESA, we present the following findings:

- Erosion is projected to be greater than shown by HKA (2015). Impacts associated with a greater amount of erosion should be considered to avoid potential future hazards to proposed development.
- The historic erosion rate estimated by HKA (2015) should be reviewed in greater detail, and the project applicant should use a higher erosion rate not lower than the higher end of the range of estimates reported by HKA (2015). Additional information and aerial imagery should be used to establish the historic erosion rate.
- Incorporate a factor of safety into the setback distance calculation, or use a higher historic erosion rate.
- Consideration of the erosion gullies is important in assessing the potential hazards at Lot D. The gullies may not behave according to the historic erosion rate, and the presence of fill and concrete debris suggests that a landslide may be deeper than perceived from visual inspection. The potential migration of the gully into Lot D should be assessed in greater detail. Further study should assess whether the gully identified previously as a landslide would be considered active.
- Drainage of the site on the surface and through existing underground infrastructure should be considered in the stability of the bluff as it contributes to rapidly forming gullies and landslides. Future development should not place structures or drainage features in areas that are subject to future coastal erosion.
- Although a project design life established by the developers is 50 years, structures often exceed the design life, and the California Coastal Commission typically requires assessment of the hazard exposure through the end of the century at 2100 so that the project incorporates acceptable adaptation strategies.
- The future coastal flood hazard zone associated with the 100-year total water level is expected to increase in the future with sea level rise, and should be considered in the project planning and design. Results of the modeling described in this memorandum suggest that the bluff may be overtopped by 2065, with significant overtopping by 2100.

2. Site Observations and Data Collection

We based the analysis and findings presented herein on observations and data collected at the site by ESA staff, as well as publically available meteorological data archived by government agencies. The following sections summarize the site observations and the various data collected to support the analysis.

2.1 Site Observations

ESA staff observed the site conditions on September 28, 2016 and October 18, 2016. The first visit, during a low tide, included site reconnaissance and discussion of the proposed project with CGF staff and other stakeholders. At the second visit, ESA field staff collected topographic survey data of the bluff geometry, described in more detail below. Several key observations were made, which we compared to existing studies and incorporated into our bluff erosion and sea level rise analysis.

The geology of the site is stratified, with a layer of marine terrace deposits that overlays a bedrock layer known as the Montara Quartz Diorite (JCP 1990). Figure 2 shows a sandy beach with large granite cobbles and boulders is located in front of the exposed bedrock layer, which is approximately 5 to 15 feet above the top of the beach, and overlain by the marine terrace layer. Inspection of oblique aerial photography of the site archived by the California Coastal Records Project¹ indicates the sandy beach is seasonal. Photographs taken during winter and spring months show a rocky beach with waves breaking at the base of the bedrock bluff. Furthermore, the project area is mapped as an area of “low stability” and classified as unstable bluff material with erosion rate greater than one foot per year in a San Mateo County Geologic Hazards Map (San Mateo County 1975).

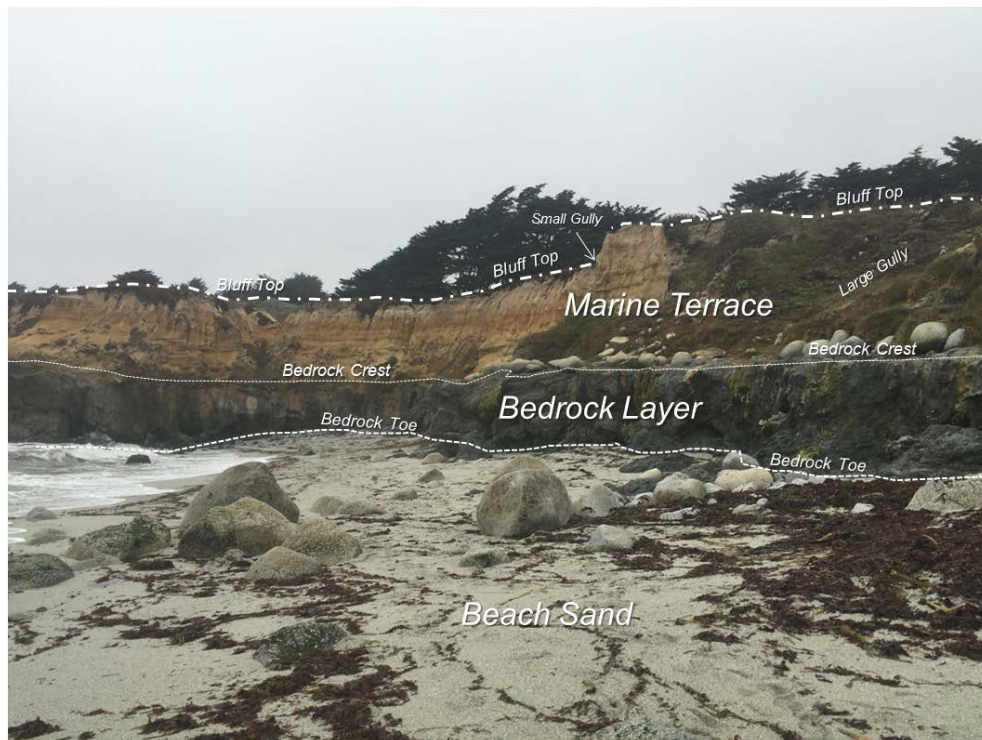


Figure 2
Photograph of site on beach looking north, showing the stratified geology of the bluff

¹ <http://www.californiacoastline.org/>

The promontory opposite Lot D is located between two gullies: one relatively large gully filled with imported soil and debris, and a smaller gully that appears to have been formed by surface drainage and an exposed pipe. The locations of these gullies are shown in Figure 2. The large gully was described by JCP (1990) as an active landslide approximately 40 feet in diameter and affecting an area approximately 18 feet inland from the existing bluff top. JCP (1990) considered this an active landslide because signs of erosion along the bluff face were observed at the time of their study. A study by GeoForensics (2001) stated that several erosion gullies were present along the bluffs in a photograph from 1946, and extended inland from the face of the bluff as much as 90 feet. GeoForensics (1990) indicates that the gullies were filled by 1955, but have more recently been eroding. The left photo of Figure 3 shows imported concrete debris and fill located at the top of the gully that was described as an active landslide by JCP (1990). The photo on the right of Figure 3 shows the location of the “small” gully on the north of the promontory opposite Lot D, thought to be formed by surface drainage. An exposed metal pipe appears to have contributed to the erosion of the “small” gully (right panel, Figure 4). This implies that erosional factors other than average bluff retreat may contribute to future erosion hazards into Lot D.



Figure 3
Photos of the bluff top showing concrete debris and fill at the top of an active landslide (left) and the variability in the bluff edge caused by gullies (right)

Several fissures were observed in the bluff top, which indicate that the bluff edge is in an unstable geometry and is prone to failure (left panel, Figure 4). The fissures are likely a result of the overly steep geometry of the marine terrace deposit layer, and indicative of the episodic nature of erosion. The photo on the right in Figure 4 shows the gully located immediately north of the promontory opposite Lot D.



Figure 4

Photos of bluff top showing a fissure or crack in the bluff (left) and a gully presumably caused by surface drainage (right)

Areas of active erosion on the bluff, as well as groundwater seeps, were observed along the bluff. The photograph in Figure 5 shows a grayish layer of sediment with water seeping out of the face of the bluff. Areas of active erosion were observed adjacent to the wet bluff face, which may be contributing to the instability of the bluff. Areas along the bluff are also vegetated by a mix of native and non-native invasive species that may play a role in surface erosion.



Figure 5

Active erosion and seepage of groundwater on the bluff face

The photographs in Figure 6 show additional groundwater seeps and erosion that was observed below the promontory opposite Lot D. The water seeping out of the bluff runs down the slope and over the bedrock. Algae growths were observed at locations where the groundwater seeps run over the bedrock, possibly indicating that the seeps are active most of the year, and not only in the rainy season.



Figure 6

Groundwater seeps and erosion on the bluff face below the promontory opposite Lot D

A sewer manhole was observed close to the bluff edge at the project site, indicating the presence of an abandoned sewer main. The sewer main likely has little impact on the bluff and erosion unless it is actively leaking and contributing to the moisture observed in the bluff face. The primary issue with the abandoned sewer main will be in the future, when it becomes exposed by erosion of the bluff, which will require removal of debris after it is exposed or in anticipation of future erosion. The geometry of the abandoned sewer infrastructure is not known, and therefore more information is needed to make a recommendation on proposed approach to removing the infrastructure from the bluff.

2.2 Data Collection

Data collection for the project included collecting of topography at the site, reviewing existing studies, and acquiring publically available meteorological data. The following sub-sections describe the data collection.

Survey Data and Measurements

ESA collected a limited amount of topographic data at the project site on October 18, 2016, using a total station and RTK GPS equipment.² The survey measured the horizontal and vertical location of several site features relative to the North American Vertical Datum of 1988 (NAVD), including the:

- Edge of bluff (marine terrace layer)
- Top of bedrock
- Edge of bedrock (also called “crest” in this document)

² ESA performs land surveys and collects hydrographic data to augment traditional surveying services for the purposes of geomorphic interpretation, monitoring of project performance, and other specific uses consistent with Geologic and Landscape Surveys as defined in the Professional Land Surveyors’ Act (California Business and Professionals Code). ESA does not provide traditional land survey services such as property boundaries and maps for general use by others. ESA recommends that a licensed, professional land surveyor accomplish these traditional surveying services under direct contract either with the client or as a sub-consultant to ESA.

- Top of beach
- Profile through promontory opposite Lot D, following Section 3 of HKA (2015)

Figure 7 summarizes the key information from the topographic survey, including dimensions, elevations, and slopes of features. The dashed blue line is located approximately where we surveyed a profile across the bluff and beach. The elevation of the edge of the bluff was measured to be approximately 43 feet NAVD, with some variability along the shore. The marine terrace deposits in this location stand almost vertical and are approximately 25 feet tall. The elevation of the bedrock layer was approximately 18 feet NAVD, although it also varied along the shore, and was approximately 7 feet above the top of the beach. A small “bench” was formed on the bedrock top as it extends seaward from the base of the bluff. The bedrock bench from the bluff toe varied between about 5 feet and 15 feet along the shore, likely a function of the relative exposure to waves breaking near the bedrock and bluff. The bench was not observed toward the north end of the beach, likely because of the presence of a large promontory that extends into the surf zone and protects the northern pocket of the beach from the larger breaking waves. Boulders and large cobbles were observed in the surf zone at approximately the low tide platform, and along the beach. Several boulders were sitting on top of the bench formed by the bedrock, which were likely moved by waves during extreme coastal conditions.



Figure 7
Approximate geometry of beach and bluff

Tidal Water Levels

Tides at the site are characterized by a mixed semi-diurnal tide signal, typical of the California coast, with two high tides and low tides occurring per day, each with unequal heights. The diurnal tide range, or the difference between mean higher high water (MHHW) and mean lower low water (MLLW), is approximately 5.8 feet. Table 1 presents the tidal datums used for the technical analyses described in this report. Tide data and tidal datums

were based on the NOAA Tide Gage Station 9414290 at San Francisco, California, located at the Golden Gate about 20 miles from the project site, but assumed to be representative of the actual conditions at the site. Comparison to a short record of tide data collected at Pillar Point show a small difference in the tide elevations, but was assumed negligible for the analysis we conducted. Figure 8 presents a time series of the tide data that was used in the analysis described below.

TABLE 1
TIDAL DATUMS FROM SAN FRANCISCO TIDE STATION 9414290

Datum	Elevation (feet NAVD)
Highest Observed Water Level (HOWL)	8.7
Mean Higher High Water (MHHW)	5.9
Mean High Water (MHW)	5.3
Mean Tide Level (MTL)	3.2
Mean Sea Level (MSL)	3.2
Mean Low Water (MLW)	1.2
Mean Lower Low Water (MLLW)	0.1
Lowest Observed Water Level (LOWL)	-2.8

Source: NOAA NOS Station 9414290, San Francisco, CA

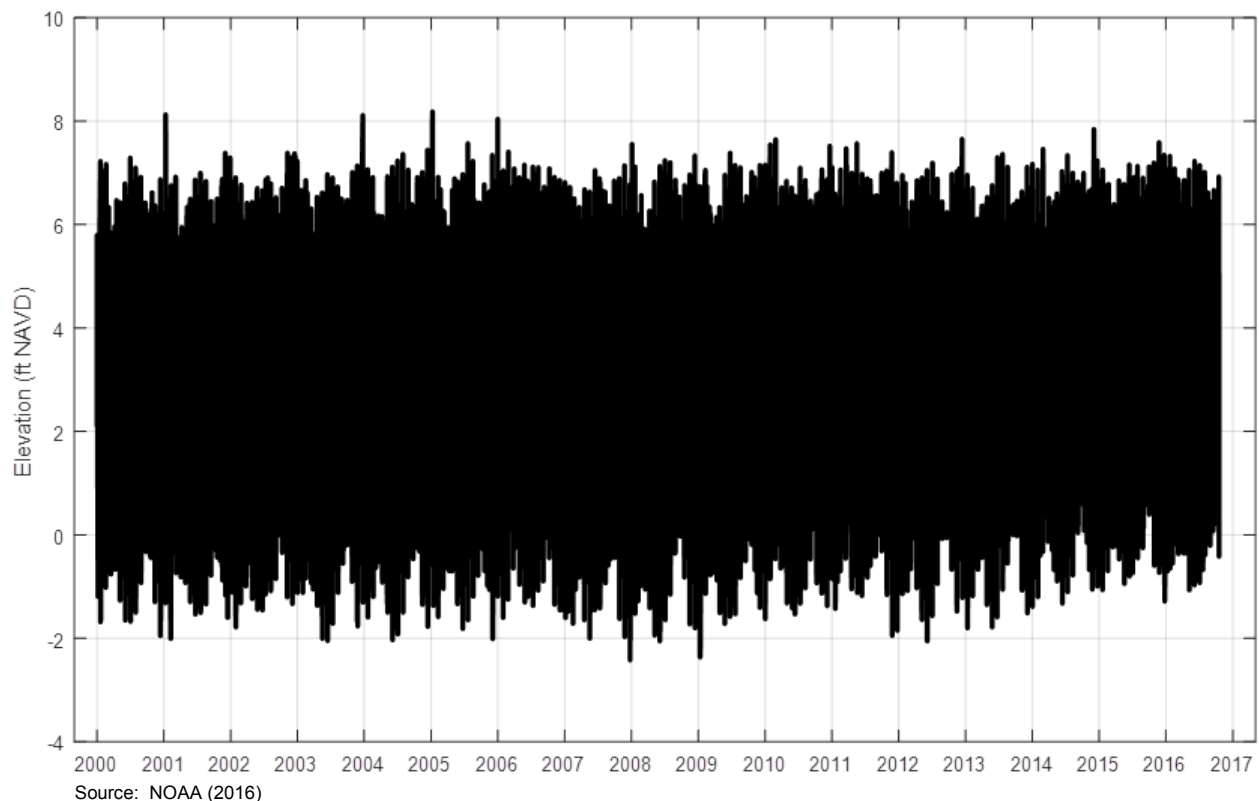
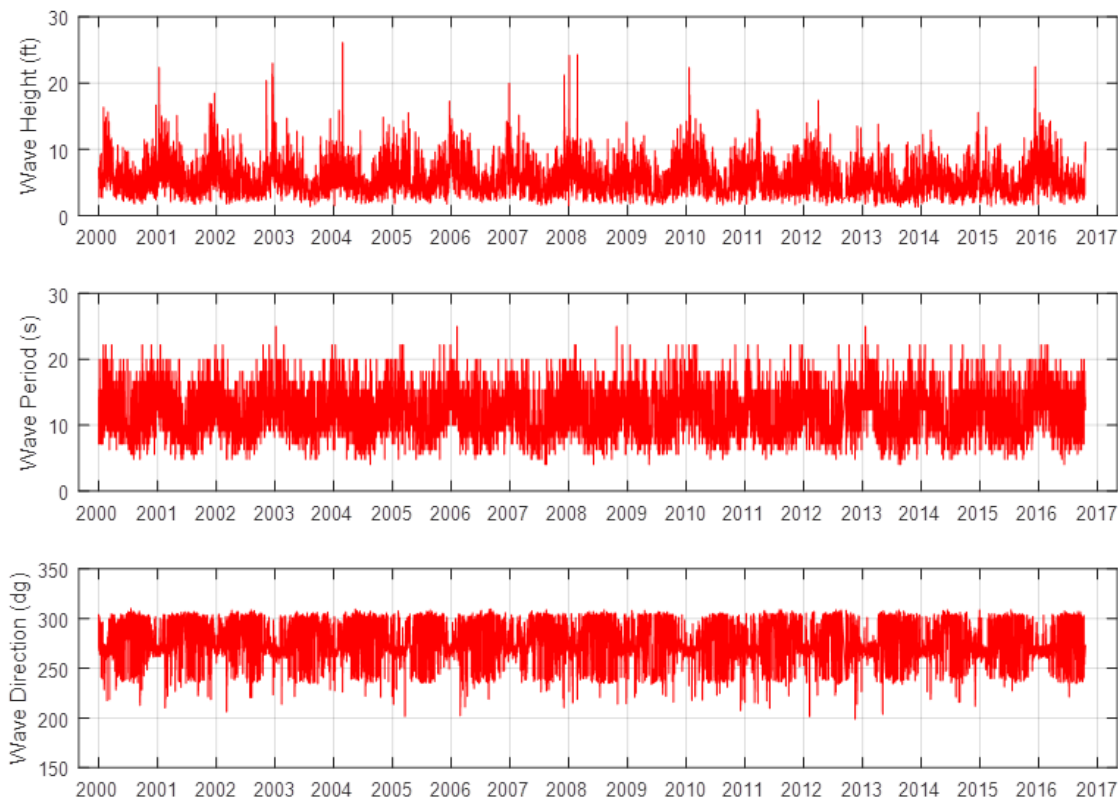


Figure 8
Measured tide elevation at San Francisco, Golden Gate, NOAA NOS 9414290

Wave Climate

Hourly wave height, period, and direction near the project site were obtained from nearshore transformed wave data provided by the Coastal Data Information Program (CDIP) California Coastal Wave Monitoring and Prediction System (O'Reilly et al. 2016). The data comprises the output of a spectral transformation model, at a virtual point located in about 45 feet of water approximately one-half mile offshore of the project site. Figure 9 presents hourly wave data, transformed from deep-water measurements using transformation coefficients computed by CDIP.³ Note the seasonal patterns, with large wave heights and long periods approaching the site with a narrow band from the west-northwest in the winter, and smaller waves with shorter periods approaching from a wide band ranging from west-southwest to northwest. The wave data is an important consideration in the analysis, as it is a driver of the beach elevations, flood elevations and erosion processes.

Recent nearshore wave data from CDIP and historic water levels at the San Francisco tide gauge (NOAA station 9414290) were used as input to the coastal erosion model and flooding calculations. Since these same meteorological and climatic conditions affect water levels and waves, these conditions are correlated. In fact, the worst coastal hazards are typically associated with coincident occurrences of high waves and high storm surge and the effect on coastal hazard responses such as total water level are not necessarily linear (FEMA 2005; Garrity et al. 2006).



Source: CDIP; O'Reilly et al. 2016

Figure 9
Wave height, period and direction record for offshore of the project site at depth of 15 meters

³ Data were furnished by the Coastal Data Information Program (CDIP), Integrative Oceanography Division, operated by the Scripps Institution of Oceanography, under the sponsorship of the U.S. Army Corps of Engineers and the California Department of Parks and Recreation, <http://cdip.ucsd.edu/>

Historic Erosion Rate

Estimation of the historic erosion rate for the project site was beyond the scope of our study, and therefore we relied on prior estimates by others. Our primary source for the historic erosion rate was the HKA (2015) study, which estimated the historical bluff recession rates over time using a 1908 surveyed subdivision map, a vertical photo from 1986, and 2014 field measurements. The HKA (2015) study based their setback analysis on a historic erosion rate of 0.45 feet per year, based on comparing the 1908 survey to the 2014 field measurements, and also reported a range in the erosion rate between 0.36 and 0.64 feet per year based on comparing the 1986 photograph to the 2014 field measurements.

Through comments provided to ESA by CGF, stakeholders have expressed concern in using the 1908 subdivision map as the baseline for the erosion rate calculations because it is not known how accurately the coast was surveyed, including the actual location of the bluff edge at the time of the mapping. GeoForensics (2001) performed a “least-squares regression” analysis on several aerial images acquired for the project site, and projected the computed erosion rates into the future to estimate the future location of the bluff edge. However, it appears that the GeoForensics (2001) study did not consider SLR, and it does not explicitly report the computed historic erosion rates, although the data and linear fits are presented in graphical format. Inspection of the graphs suggests historical erosion rates that vary from about 0.3 feet per year up to 0.75 feet per year in some locations. Selection of the cross-section plays an important role in the calculated erosion rates, because the location of the bluff edge is variable. Other studies nearby for the Fitzgerald Marine Reserve estimate historic bluff erosion rates of over one foot per year and recommend a minimum setback of 100 feet for new development (Brady/LSA 2002).

Overall, we recommend the conducting a more complete bluff erosion analysis to estimate the historical erosion rates at the site. This study should utilize all available aerial images of adequate quality, and use different standard methods to estimate the rate, including a least squares regression and other available software, such as Digital Shoreline Analysis System (DSAS) (Thieler et al. 2009).

In the analysis described in this memorandum, we used the HKA (2015) erosion rate of 0.45 feet per year so that the results from the ESA methods can be compared to HKA (2015). We also considered the implications of a higher erosion rate of 0.64 feet per year reported by HKA (2015) in our analysis. Finally we also considered the implications of a higher historic erosion rate, for which we selected one foot per year.

3. Climate Change and Sea Level Rise Background

3.1 Climate change scenarios

The accumulation of greenhouse gases in the Earth's atmosphere is causing and will continue to cause global warming and resultant climate change. For the coastal setting, the primary exposure will be an increase in mean SLR due to thermal expansion of the ocean's waters and melting of ice sheets.

State planning guidance for coastal flood vulnerability assessments call for considering a range of scenarios (OPC 2013; CCC 2015). These scenarios bracket the likely ranges of future greenhouse gas emissions and ice sheet loss, two key determinants of climate whose future values cannot be precisely predicted. Scenario-based analysis promotes the understanding of impacts from a range of scenarios and identifies the amounts of climate change that would cause impacts.

The guidance recommends using scenarios that represent low, medium, and high rates of climate change. Recent studies of current greenhouse gas emissions and projections of future loss of ice sheet indicate that the low scenario probably underrepresents future SLR (Rahmstorf et al. 2012; Horton et al. 2014). Also, note that even if SLR does not increase as fast as projected for the high scenario, SLR will undoubtedly continue beyond 2100, such that the medium scenario is likely to yield the same amount of SLR. It just would occur a few decades after 2100 instead of at the turn of the century.

While the interim state recommended SLR scenarios have not yet been finalized, we are expecting the state to recommend dropping the "low" SLR scenario. This study thus focuses on the Medium and High SLR scenarios. The assumptions that form the basis for these scenarios are:

- **High Scenario** – The high scenario assumes population growth that peaks mid-century, high economic growth, and development of more efficient technologies. The associated energy demands would be met primarily with fossil-fuel intensive sources.
- **Medium Scenario** – The medium scenario assumes same population, economic, and technologic growth as the high scenario, but also assumes that energy would be derived from a balance of sources, thereby reducing greenhouse gas emissions.

3.2 Planning Horizons

The planning horizons analyzed for this project are 2065 and 2100, selected to inform the potential impacts to the project site for mid- and late-century conditions, and consistent with the CCC (2015) SLR Policy Guidance document. This set of planning horizons is recommended so that decisions about land use can be matched to the timeframe for project lifespans and to facilitate the identification of triggers for adaptation measures. Although HKA (2015) reported that the design life of the project is 50 years, which will occur much earlier than the 2100 planning horizon, it is unlikely that the development would be removed at the end of this project life. Therefore, planning horizons for a SLR analysis are typically longer than the periods associated with near-term decision-making.

3.3 Relative Mean Sea Level Rise Amounts

Two SLR scenarios were evaluated to estimate the change in coastal water levels under medium and high degrees of climate change. This conforms to state planning guidance for coastal flood vulnerability, which recommends

analyzing a range of climate scenarios due to uncertainty about future climate predictions (OPC 2013; CCC 2015). For assessing the impacts of SLR on the project site, we used mean SLR projections through 2100 based on a recent study by the National Research Council (NRC 2012) for the West Coast, which was adopted by the State of California (OPC 2013; CCC 2015). Table 3 presents the values for relative mean SLR at 2065⁴ and 2100 for the San Francisco Region relative to 2000. The relative mean SLR includes regional projections of both mean SLR and vertical land subsidence of 1.5 millimeters per year for the San Andreas region south of Cape Mendocino (see OPC 2013). These values of relative SLR were used in the analysis described in this memo.

TABLE 2
RELATIVE MEAN SEA LEVEL RISE PROJECTIONS FOR THE SAN FRANCISCO REGION FOR MEDIUM AND HIGH SCENARIOS

Year	Medium SLR	High SLR
2065	17 inches	35 inches
2100	36 inches	66 inches

⁴ Although the SLR projections are tabulated at years 2050 and 2100, the CCC (2015) includes a polynomial fit for the High Scenario (Equation B-3 of CCC 2015), which was used to define the SLR value projected for 2065. Similarly, we used a polynomial fit to the NRC (2012) values for the Medium Scenario to define the SLR value projected for 2065.

4. Analysis and Results

The following sections describe the technical analyses conducted to model the bluff erosion and wave runup elevations as a function of sea level rise. The bluff recession model calculates the increase in the historical erosion rate due to SLR as a function of the change in exceedance of a selected wave runup event. Therefore, this section presents the analysis and results of the total water level analysis, followed by the bluff erosion analysis and results.

4.1 Wave Uprush and Total Water Level

The total water level (TWL), defined as the maximum elevation of the wave runup or wave uprush, was estimated using methods described in a Technical Methods Manual titled *Relating Future Coastal Conditions to Existing FEMA Flood Hazard Maps*, recently prepared for the California Department of Water Resources (Battalio et al. 2016), and consistent with FEMA mapping guidelines (FEMA 2005). The “modified TAW” method computes the wave runup height above a reference water level using the TAW equation⁵ with a composite slope of the backshore (i.e. an average slope is calculated over a distance between the breaker location and a point on the bluff), similar to methods described in the *Shore Protection Manual* (USACE 1984).

The modified TAW method computes a reference water level by increasing the observed tidal still water level (SWL) to include the static and dynamic wave setup as caused by waves breaking further offshore. We used the DIM method to calculate the wave setup at the breaker location to establish the reference water level for each wave runup computation. The final step is to compute the wave runup elevation with a depth-limited wave at a selected breaker location. We selected a breaker location as the mean sea level (MSL) contour on the surveyed shore profile.

Using the concurrent time series of tide elevations and offshore wave heights, we generated a time series of TWLs. Figure 10 presents an exceedance curve of the computed TWLs, which relate the TWL elevation (vertical axis) to the percent of time that the value is exceeded (horizontal axis). As shown in Figure 10, elevation 0 feet NAVD is exceeded 100% of the time for the period of observations, and the TWL of 22 feet NAVD is exceeded approximately 1% of the time for the period of observations. Note that the crest of the bedrock bluff is located at approximately 18 feet NAVD, and thus is anticipated to be overtopped approximately 3 to 4% of the time.

⁵ TAW refers to the Technical Advisory Committee on Flood Defence in the Netherlands; the TAW equation was developed by the for estimating wave runup and overtopping as part of a set of guidelines for safety assessment and design of dikes. Application of the TAW equation is also described in FEMA’s Guidelines for Coastal Flood Hazard Analysis and Mapping for the Pacific Coast of the United States (FEMA 2005).

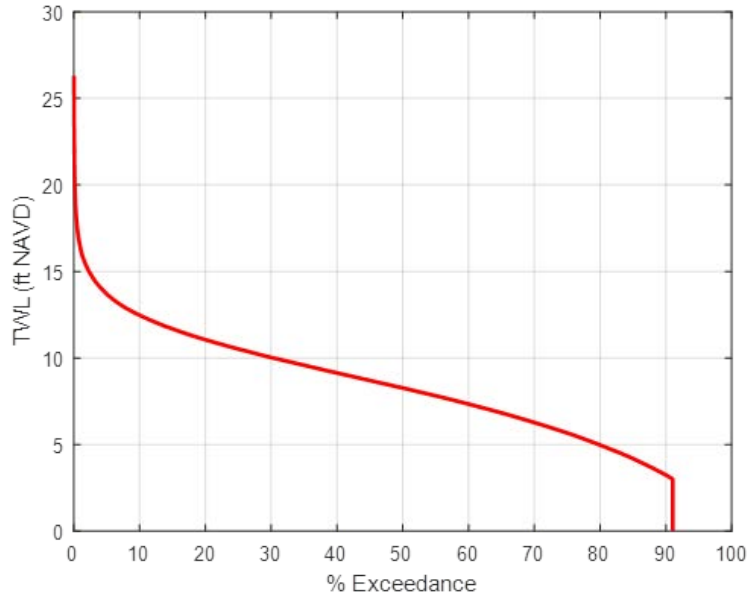


Figure 10

Exceedance curve of the total water level calculated at the site for existing conditions

We estimated the 100-year TWL for existing conditions to be approximately 31 ± 2 feet NAVD. Figure 11 presents several extreme value distributions fit to the annual maximum TWL data for the period of record. This is slightly higher than the base flood elevation (BFE) of 26 feet NAVD mapped in the Preliminary 2015 FEMA FIRM for the project area. However, the FEMA BFE values are calculated on a limited number of transects, with values that range from 26 to 34 feet NAVD along this section of coast with similar shore morphology and wave exposure, and therefore the estimate of the 100-year TWL in this report seems in-line with the FEMA study.

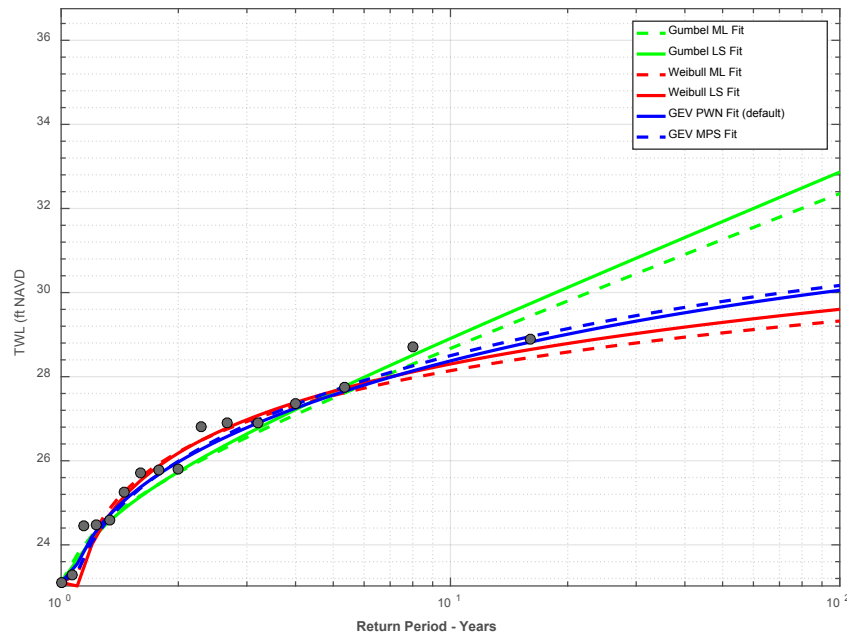


Figure 11

Extreme value analysis of the total water level time series shows a 100-year total water level up to 33 feet NAVD

The wave runup model was calibrated by comparing model output to observations made at the site on October 17, 2016. We used a photograph of the site and observations taken on October 17, 2016 during high tide to estimate a TWL of approximately 23 feet NAVD. Based on the topographic survey, the top of the vegetation shown in the photograph is approximately 23 feet NAVD, which appears to agree well with the spray of the wave. Also note that the reference water level is high compared to the beach, likely due to wave setup caused by the long period swell hitting the coast on that particular day. We ran the modified TAW model using the measured tides from NOAA and nearshore waves from CDIP for the same time period, and calibrated the runup component by adjusting a roughness coefficient so that the model output was similar to the observed data.



Photograph by Kathy Lockhart

Figure 12

Estimate of total water level based on observations made on October 17, 2016

The future 100-year TWL is expected to increase with SLR, with the potential to overtop the bluff by 2065. Recent studies have shown that the change in TWL is approximately 3 to 4 times the amount of SLR at erosion-resistant, steep backshores (Battalio et al. 2016, Vandever et al. 2016). Table 3 presents values of the existing and future 100-year TWL for the profile analyzed at the site. Note that the existing bluff edge is approximately 43 feet NAVD. During wave overtopping, long period waves can propagate a significant landward distance and impact structures with a momentum force proportional to the square of the velocity. FEMA maps the “V” zone, or velocity hazard zone, in FIRMs for coastal areas subject to waves. Construction in a “V” zone is required to meet additional building codes associated with the wave and velocity hazards. FEMA FIRMs are subject to future revisions.

TABLE 3
ESTIMATED EXISTING AND FUTURE 100-YEAR TOTAL WATER LEVEL (FEET NAVD)

Year	Medium Scenario	High Scenario
Existing	31	31
2065	37	43
2100	43	53

4.2 Bluff Retreat Estimate

The estimate of future bluff retreat was completed using an approach first established by ESA (formerly Philip Williams and Associates) and applied to several studies on the coast of California. The method estimates the increase in the erosion rate of the base or toe of the bluff as a function of the change in the TWL exceedance above the toe for future conditions. For this particular site and application, the layered geology was assessed using an additional step and assumptions. A key assumption in this analysis is that for a static sea level, the bedrock layer and the marine terrace layer erode at the same rate. We assume that the bench between the edge of the bedrock and the base of the bluff is a result of variable wave exposure and is not expected to change significantly for a static sea level. As sea level changes, the base erosion rate of the bedrock will increase, due to the change in TWL exceedance above the toe, and the bedrock bench will increase due to the increased impacts of waves on the marine terrace materials. Therefore, we computed the accelerated erosion of the bluff top as a function of the acceleration in the base erosion at the toe of the bedrock, and the increase in the bench width between the bedrock edge and the bluff. Figure 13 presents a schematic that illustrates the conceptual model of the bluff erosion for the site, where X_1 is the base erosion distance of the toe of the bedrock for a given time period and X_2 is the total erosion distance of the bluff edge for the same time period. Note that X_2 is the sum of the base erosion distance X_1 and the change in width of the bench.

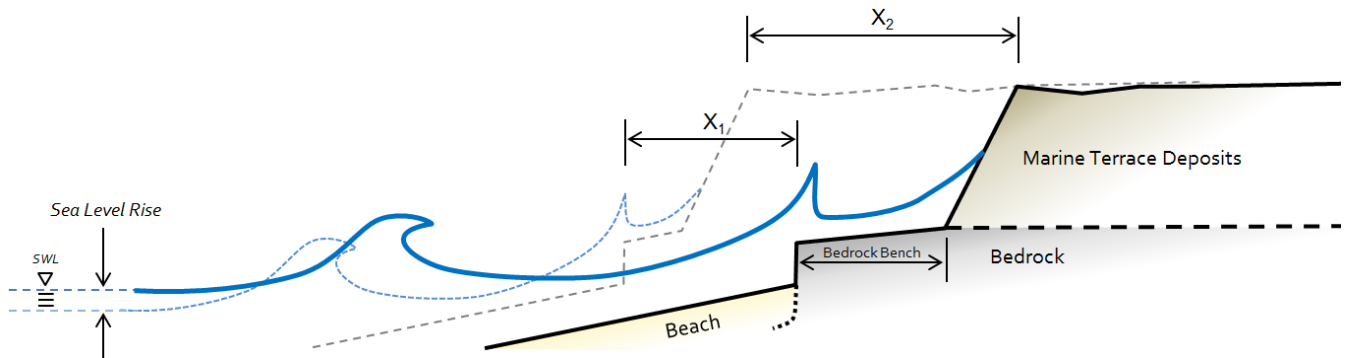


Figure 13
Conceptual model of bluff erosion at the site (not to scale)

Estimate of Accelerated Base Erosion

Methods to estimate future erosion rates that consider sea level rise are described by a limited number of studies. The Pacific Institute study (PWA 2009, Revell et al. 2011) estimated future erosion rates using the following equation,

$$Erosion Rate_{future}(t) = Erosion Rate_{historic} * \left(1 + \alpha \frac{P_f - P_e}{P_e}\right) \quad (1)$$

where P_f and P_e are the future and existing probability of total water level exceedance above the cliff toe elevation, respectively. Since the Pacific Institute study, a number of studies have proposed additional relationships for estimating cliff/bluff erosion rates under accelerated sea level rise (Walkden and Dickson 2008, Ashton et al. 2011). Walkden and Dickson (2008) found that the following equation applied well for the cliff backed/low volume beaches undergoing a historic trend in sea level rise at the Naze Peninsula on the Essex coast in Southern England:

$$Erosion Rate_{future}(t) = Erosion Rate_{historic} * \left(\frac{Rate\ of\ Sea\ Level\ Rise\ (t)}{Rate\ of\ Sea\ Level\ Rise\ (historic)}\right)^m \quad (2)$$

In this equation $m = 0.5$. Ashton et al. 2011 investigated the value of m using various data sets for calibration and confirmed that $m = 0.5$ applies to cliffs/bluffs dominated by wave-driven erosion. In particular, rocky shore platforms and cliffs fronted by low-sediment-volume beaches, both of which apply for the cliffs at the project site.

ESA has further adapted the Walkden and Dickson (2008) equation, as follows:

$$Erosion Rate_{future}(t) = Erosion Rate_{historic} * \left(\frac{A(t)}{A(historic)} \right)^m \quad (3)$$

where A is the area below the total water level exceedance curve and above the existing toe elevation. This area is a combination of the duration of wave impact above the toe elevation and the intensity of that contact (how high above the toe the waves and wave runup are reaching). The exponent, m , was kept at 0.5, in agreement with the previous studies.

Application of this method to the profile at the site yielded increased erosion rates as a function of time. We computed the accelerated erosion rates for three different historic erosion rates as described in Section 2.2, and for the medium and high sea level rise scenarios as described in Section 3.

Estimate of Increase in Width of Bedrock Bench

We estimated the change in width of the bedrock bench on top of the bedrock by accounting for the change in future TWL for events with a 1- to 5-year recurrence interval. The recurrence interval of 1- to 5-years was selected to correspond to the episodic nature of bluff erosion. We modified Equation 5 of Battalio et al. (2016) to relate the ratio of negative freeboard (e.g. the height of the wave runup above the bedrock) for future and existing conditions to the change in width of the bench. For the profile we analyzed, the bench width was approximately 10 feet, and increased over time as the relative negative freeboard increased with the acceleration in SLR.

TABLE 4
ESTIMATED EXISTING AND FUTURE BEDROCK BENCH TOP WIDTH AT ANALYZED PROFILE (FEET)

Year	Medium Scenario	High Scenario
Existing	10	10
2065	20	26
2100	27	35

Calculation of Setback Distance

The setback location was estimated by adding the results of the base erosion estimate with the increase in the width of the bench, and then projecting a slope of 1.5 to 1 (horizontal to vertical) to the existing ground surface, consistent with the method described by HKA (2015) for locating the top of the stable slope.

Figure 14 presents a plan view of the stable slope location and the computed setbacks associated with the medium and high SLR scenarios at 2065 and 2100 for two historic erosion rates. The setbacks shown with the solid lines are based on a historic erosion rate of 0.45 feet per year, and those with the dashed line are based on a historic erosion rate of 0.64 feet per year. These setback distances are applicable to the surveyed profile location only, and may not be representative of appropriate setback distances along the shore. Additional work is required to

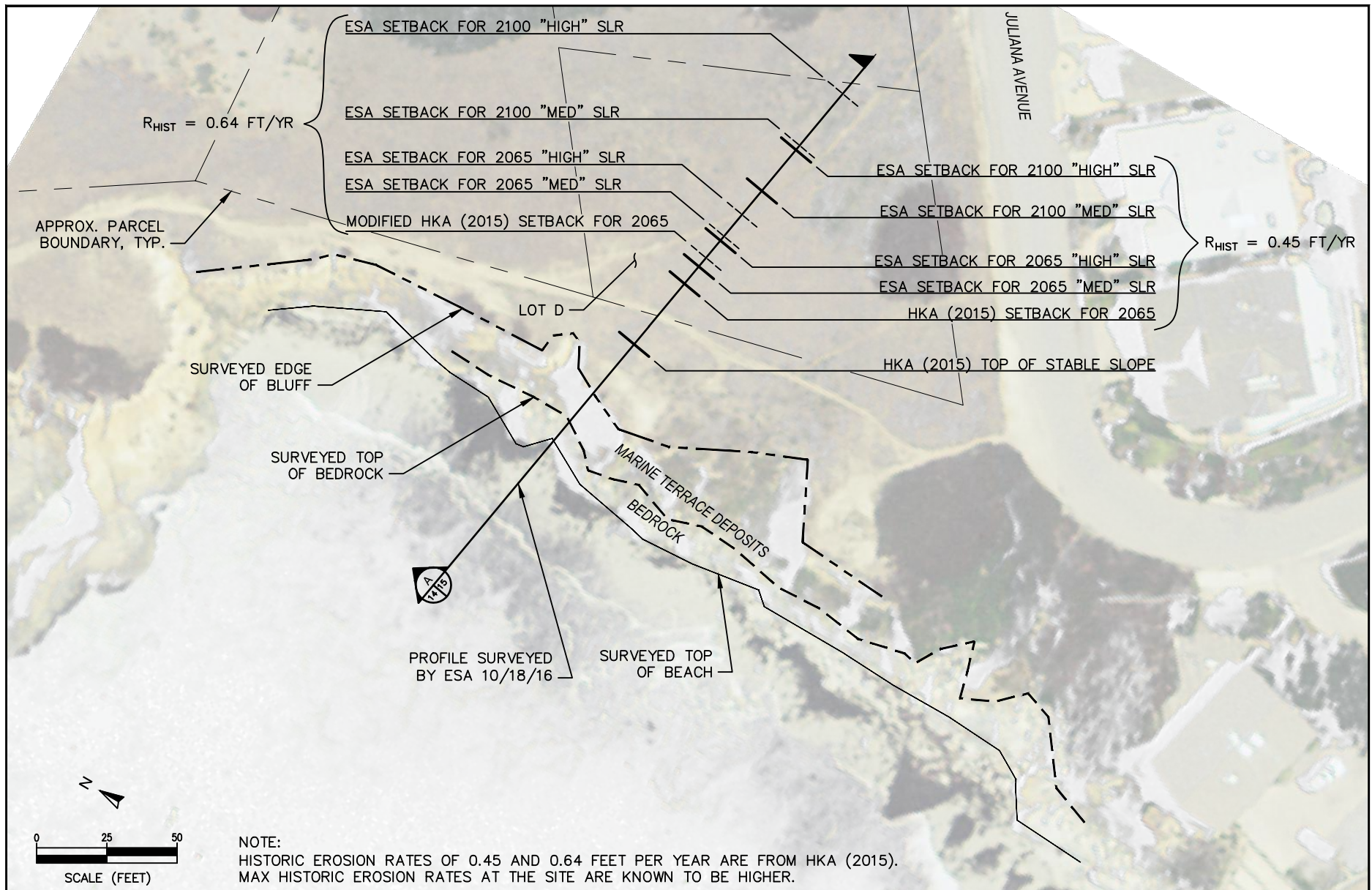
compute the setback line along the shore, and is beyond the scope of this study. Figure 15 shows the profile section, with an example of how the setback distance is estimated for a historic erosion rate of 0.45 feet per year. Table 5 presents the computed setback distances relative to the top of the stable slope for different historic erosion rates at 2065 and 2100.

TABLE 5
TOTAL EROSION DISTANCE RELATIVE TO STABLE SLOPE SETBACK FOR FUTURE CONDITIONS (FEET)

Historic Erosion Rate (feet per year)	Year 2065		Year 2100	
	<u>Medium SLR Scenario</u>	<u>High SLR Scenario</u>	<u>Medium SLR Scenario</u>	<u>High SLR Scenario</u>
0.45	36	48	71	90
0.64	50	60	92	116
1.0	70	83	133+	165+

This approach is consistent with recommended guidelines of the State to use a range in sea level projections and different time frames (see CCC 2015). While accounting for mid-century values at 2065 is indeed important and in compliance with local regulations, assessing the potential exposure at 2100 is another important step that is typically required by the California Coastal Commission in reviewing Coastal Development Permit applications. Identification of future exposure that is likely to occur late in the century is used to inform how potential adaptation strategies and approaches will be incorporated into the proposed project, so that potential future adverse impacts to the coast are minimized.

As shown in Figure 14, we expect a greater amount of erosion to occur by 2065 as compared to the results of HKA (2015). Because of the uncertainty and sensitivity of the historic erosion rate estimated by HKA (2015), we recommend incorporating a factor of safety or use a higher rate. As shown by our results, a relatively small increase in the historic erosion rate resulted in a greater amount of future erosion and larger setback distances. Although this analysis is not intended for locating structures, our findings indicate that a greater amount of erosion should be considered in the proposed project to avoid potential future hazards.



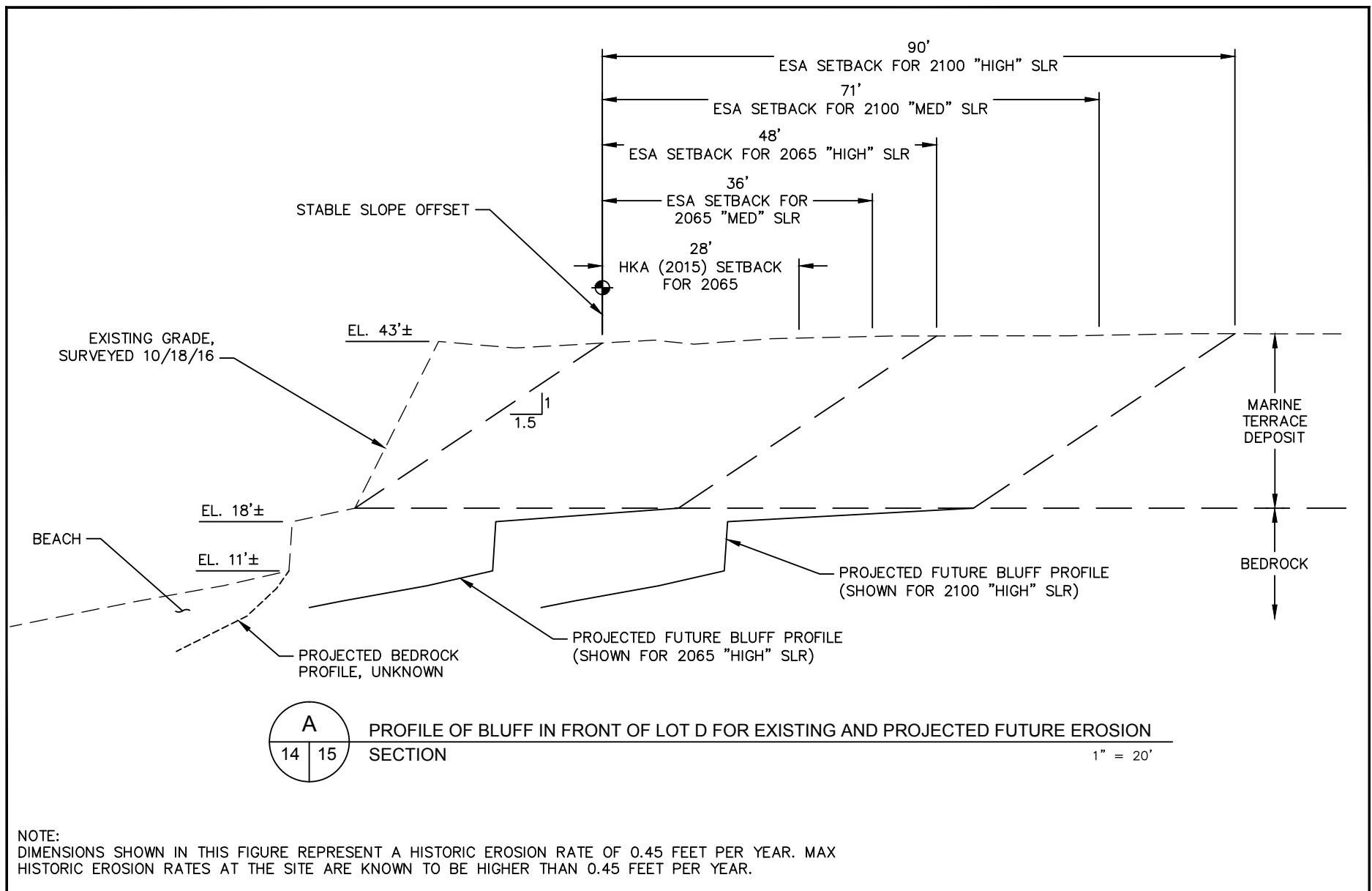
SOURCE: Imagery from California Coastal Conservancy (2012); ESA Survey on 10/18/16; Parcel data from San Mateo County

Vallemar Bluffs Coastal Hazards . 160715.00

Figure 14

Estimated Setback Distances for Future Bluff Erosion
at 2065 and 2100 for Medium and High Sea Level Rise Scenarios





SOURCE: ESA Survey 10/18/16



Valleamar Bluffs Coastal Hazards . 160715.00

Figure 15

Projected Future Erosion on Bluff Profile
for Historic Erosion Rate of 0.45 Feet per Year

5. References

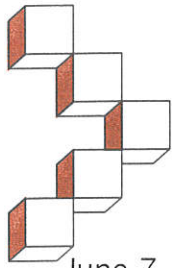
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County of San Mateo - Planning and Building Department

ATTACHMENT O



Michelucci & Associates, Inc.
Geotechnical Consultants

Joseph Michelucci, G.E.
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Richard Quarry
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June 7, 2018
Job No. 16-4572

via email: Carlos.zubieta@gmail.com

Carlos Zubieta Architect
1725-A Abbot Kinney Boulevard
Venice, CA 90291

Attn: Carlos Zubieta

Re: Supplemental Foundation Criteria
Vacant Lot on Arbor Lane
APN# 037-123-430
Moss Beach, San Mateo County, California

Dear Mr. Zubieta:

At the request of Sherry Liu, of the county of San Mateo (during a conference call on July 6, 2018), we are providing supplemental recommendations and design criteria for a shallow spread footing foundation system for the above-referenced property. As you know in our July 6, 2016 report we provided recommendations for a drilled pier and grade beam foundation.

In order for a spread footing to be appropriate it would first be necessary to strip the upper 6 or so inches of surface soil (containing vegetation, and roots) and export it from the site. It would then be necessary to over excavate the upper 5 feet of soil from the building envelope, and 5 feet beyond. This material will need to be stockpiled. When the material has been excavated, the exposed subgrade should then be scarified, moisture conditioned to near optimum moisture content (ASTM, D1557, latest revision) to allow proper compaction, and then be compacted to a minimum degree of 95 per cent. The excavated soils should then be returned to the 5-foot deep depression, be placed in thin lifts (4 to 6 inches in uncompacted thickness), brought to a near optimum moisture content (by wetting or drying) and compacted to a minimum degree of 95 per cent (ASTM D1557). This procedure should continue until all of the stockpiled material is compacted. We anticipate that it will then be necessary to import select granular material, such as class II baserock, or "quarry fines" and compact it to achieve finished pad grade. Spread footing foundations may then be used.

Spread Footing

Spread footings may be used if the footings extend to a minimum depth of 24 inches below finished grade (provided that the site is graded as described above).

At the minimum depth the footings can be designed for an allowable bearing pressure of 2500 psf for dead plus live loads. This value may be increased by 33 per cent to account for all loads, including wind and seismic.

In our opinion total and differential settlement should not exceed 1.5 and 1 inch respectively provided that the site is properly graded and a uniform depth of compacted fill is present beneath each footing.

Please note that all other recommendations contained in our July 6, 2016 report remain applicable and it is still our opinion that drilled piers are an appropriate foundation type for this property. It is also important to reiterate the need for our representative to perform observations and testing during grading, and foundation excavations.

We are pleased to be of service to you. Please contact us with any questions or comments.

Very truly yours,
MICHELUCCI & ASSOCIATES, INC.


Joseph Michelucci
Geotechnical Engineer #593
(Expires 3/31/19)

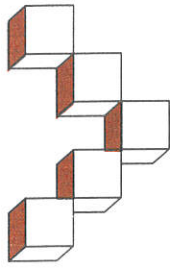


cc: David Hoexter (david@hoexterconsulting.com)
Sherry Liu (xliu@smcgov.org)
Carmelisa Morales (CJMorales@smcgov.org)
Tatiana Barhar (tatiana@verdego.net)



County of San Mateo - Planning and Building Department

ATTACHMENT P



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Geotechnical Consultants

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joe@michelucci.com

Richard Quarry
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July 11, 2018
Job No. 16-4572

via e-mail: Carlos.zubieta@gmail.com

Carlos Zubieta Architect
Attn: Carlos Zubieta
1725-A Abbot Kinney Boulevard
Venice, CA 90291

Re: Response to Request of Sherry Liu
Request for Supplemental Information
Bluff Retreat
Proposed New Residence
Vacant Lot on Arbor Lane
APN# 037-123-430
Moss Beach, San Mateo County, California

Dear Mr. Zubieta:

REFERENCES

Haro, Kasunich & Associates, 2016, Geotechnical Investigation For Five Home Residential Development, Vallemar Street and Juliana Avenue, APN 037-086-23, -26, -27, -28, -29, Lots A, D, E, F, G, Moss Beach, California, report dated August 12, 2016.

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Michelucci & Associates, 2016, Geotechnical and Geologic Investigation, Proposed New Residence, Vacant Lot on Arbor Lane, APN# 037-123-430, Moss Beach, San Mateo County, California, report dated July 6, 2016.

Michelucci & Associates, 2017, Geotechnical and Geologic Investigation Update, Proposed New Residence, Vacant Lot on Arbor Lane, APN# 037-123-430, Moss Beach, San Mateo County, California, report dated August 29, 2017.

INTRODUCTION

At the request of Sherry Liu, of the County of San Mateo (during a conference call on June 6, 2018), we are providing supplemental recommendations and setback criteria related to ocean bluff retreat on the subject property. In particular, we have considered the potential of sea level rise on our previously prepared retreat estimate. As you know, in our July 6, 2016 geotechnical and geologic investigation report we provided recommendations for a reasonable average rate of bluff retreat based upon published maps and photos dated as far back as 1866.

Our 2016 report presented an estimated bluff retreat rate of 0.78 feet/year since 1866. Based on the bluff edge location at the time the report was issued, we calculated that the bluff retreat would reach the western property line, western building setback line, and closest point of the proposed residence in approximately 38, 76, and 99 years, respectively.

Bluff erosion occurred during the subsequent winter (2016-17), resulting in landward retreat ranging from approximately 6 to a maximum of 11 feet. In our 2017 update letter we concluded that the 2016-17 bluff retreat was consistent with the episodic nature of long-term bluff retreat. As will be discussed an inspection and measurements at the site on July 9, 2018 revealed virtually unchanged conditions.

DISCUSSION

Various questions have been posed subsequent to our 2017 update letter. These questions and our responses follow.

Impact of Adjacent/neighbor Lot Cliff Protection Measures

A protective wall in conjunction with placement of rip-rap at the toe of the slope was constructed on the neighboring property located northwest of the Arbor Lane cul-de-sac. Based on historic Google Earth imagery, the rip-rap appears to have been placed in approximately 2002-2003, when the top of the bluff was essentially linear, and the wall was constructed in 2004. The wall does not extend down to the beach. Based on the Google Earth imagery and its current appearance, the wall appears to have been constructed with a perpendicular wing it's the south side, with the top of the bluff south of the wall termination initially and currently (based on a May 9, 2018 Google Earth images) located approximately 8 and 11.5 feet respectively. Thus, the top of the bluff adjacent to the wall appears to have receded approximately 3 to 4 feet since the wall was constructed. In conclusion, although it is logical to assume that the neighbor wall has deflected wave energy to the south towards the subject site, the actual impact immediately adjacent to the wall appears to have been minimal. Thus, although difficult to determine we would expect the wall to have similar or less of an effect on retreat on the bluff below the subject site.

Lea & Braze Surveys

It should be noted that Lea & Braze performed surveys in May of 1997 and May of 2016 and the rate of retreat over the 19 years was near identical to our long term average within the period of 1866 to 2016.

Impact of Sea Level Rise (SLR)

Our initial report did not include the impact of SLR on our bluff retreat calculation. We reviewed numerous references and consultant reports related to the impact of SLR on bluff retreat rate. We were not able to identify any reliable discussion or proposed calculations to apply to the subject (or any other) site. The consensus appears to be that SLR increases the retreat rate, but that the rate of increase is highly variable.

However, a precedent for the immediate site vicinity (950 feet to the north), at a site with a similar geologic setting, is a report by Haro, Kasunich & Associates (HKA) (2016). The 2016 report includes a figure from a previous, 2015 HKA report on the same site, which utilized a factor of 125% to calculate anticipated bluff Retreat (in other words, an additional 25% was added to the calculated historic average retreat rate). We were not able to obtain a copy of the 2015 report, but we discussed the reports with the principal author, Moses Cuprill, C.E, who indicated that HKA has utilized this factor in projects ranging along the California coast from Monterey to San Mateo County, with judgement modifications for soil and/or rock type, and that the factor has been widely accepted by regulator agencies and the California Coastal Commission.

We therefore have modified our initial retreat rate, with a corresponding increase of 25%. This results in an increased rate from 0.78 to 0.98 feet/year. Using this number the bluff retreat would reach the western property line, western building setback line, and closest point of the proposed residence in approximately 26, 40, and 75 years, respectively. These values are very conservative as the starting point (bluff top) was measured within a year of the episodic 2016/2017 slope retreat. (It should be noted that if we increased the 25% increase to 50% it would take 63 years to reach the residence).

SLR could be postulated to impact the Dean Creek drainage along the south side of the site. The creek currently discharges with a drop on the order of 3 to 4 feet down to the beach. An increase of sea level could result in erosion of the creek channel entry location, which could then lower the creek channel base on the order of perhaps 1 to 2 feet. In our opinion it is not feasible to predict the impact to the adjacent channel wall and resulting impact to the top of the channel adjacent to the site from this occurrence, but we would anticipate that it would be negligible.

Recent Site Visit

We visited the site on June 9, 2018 and found it to be virtually in the same state as it was during our last visit. Our measurements confirmed that virtually no additional retreat had occurred.

Page 5
July 11, 2018
Job No. 16-4572

We are pleased to have been of service to you on this project, and will be available to review our findings with you and your other consultants at the earliest convenience.

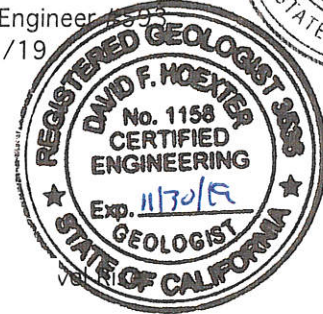
Very truly yours,
MICHELUCCI & ASSOCIATES, INC.



David F. Hoexter
Certified Engineering Geologist #1158
(expires 11/30/19)



Joseph Michelucci
Geotechnical Engineer #593
(expires 3/31/19)

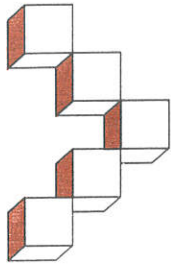


cc: Sherry Liu (xliu@smcgov.org)



County of San Mateo - Planning and Building Department

ATTACHMENT Q



Michelucci & Associates, Inc.
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Richard Quarry
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September 17, 2018
Job No. 16-4572

via e-mail: Carlos.zubieta@gmail.com

Carlos Zubieta Architect
Attn: Carlos Zubieta
1745 Abbot Kinney Boulevard
Venice, CA 90291

Re: Post-Construction Creek Bank Observation
Proposed New Residence
Vacant Lot on Arbor Lane
APN# 037-123-430
Moss Beach, San Mateo County, California

Dear Mr. Zubieta:

INTRODUCTION

Based on the August 27, 2018 emailed request of Sherry Liu of the County of San Mateo Planning and Building Department, we have prepared a procedure for post-construction observation of the creek slope adjacent to the planned new residence on the currently vacant lot (APN #037-123-430) on Arbor Lane in Moss Beach, San Mateo County, California. The property is referred to as 199 Arbor Lane on various documents.

Ms. Liu previously requested monitoring of the adjacent creek bank slope during and following construction of the planned new residence. The purpose of the monitoring would be to identify potential occurrences of creek bank retreat prior to the retreat impacting the residence. The nearest closest point of the proposed residence from the top of the slope is approximately 25 feet. Ms Liu requested that the residence be set back from a line projecting up from the toe of the slope at an inclination of 2:1 (horizontal to vertical). This line projects to a point approximately 9 feet from residence. We, along with the owner, concurred with this request.

Various options were considered, in an effort to develop a reliable and efficient method of monitoring the slope. It is noted that the creek bank at the top of the slope has changed little if at all in the past 20, if not more, years. In particular, the berm at the top of the slope was constructed in 1972 at the time the subdivision was created, and remains in place, 45 years later. In addition, the concave erosion area opposite the closest part of the proposed residence has not receded since at least 1997. We thus recommended a program of visual observation of the slope twice per year by a reliable independent professional. Ms. Liu concurred with this proposal and subsequently requested a written plan to delineate the inspection program.

PROPOSED INSPECTION PLAN

1. Two monuments will be located along the projected 2:1 setback line. The approximate monument locations and the projected setback line are shown on the attached plan A-1.0, originated October 14, 2016, and revised to include slope monitoring monument locations August 17, 2018.
2. Prior to construction, a licensed surveyor will locate and stake the positions of the two monuments. The contractor will drive and set flush to the finish grade a minimum of 3-foot long metal stake at these two locations.
3. A licensed civil engineer or geologist or designated member of the professional's staff, will visit the site and confirm the monument placement, and will measure the distance of each monument to the face of the adjacent residence foundation. (Prior to construction the residence's point closest to the set back should be surveyed so that monitoring can begin as construction commences and during the course of construction). A brief letter documenting the monument placement and measurements will be prepared and a copy will be transmitted to the County.

4. A licensed professional will visit the site in February and May of each of the subsequent 10 years. The professional will measure the approximate distance to the top of the bank, will document the top of the bank with photographs, and will issue a brief letter including photographs documenting his/her observations and recommendations, if any, with a copy transmitted to the County. If there are no significant changes to the creek bank slope after 10 years, the observation interval will be reduced to an annual event in May of each year. (If slope movement of more than 2 feet occurs during a reading the geotechnical engineer should (per Sherry Liu) implement an emergency response program, describe the program, and get approval from the County).
5. The owner may notify the County in writing following the 10-year period, and may terminate the annual observations unless specifically required by the county to continue.
6. The County will designate an individual or staffed position as recipient of the annual letter.

LIMITATIONS

The conclusions and opinions expressed in this report are based upon our observations and measurements as described herein, and upon our discussions with representatives of San Mateo County. While in our opinion these observations adequately disclose the conditions across the site, the possibility exists that abnormalities or changes in the soil conditions, which were not discovered by this evaluation, could occur.

The passage of time may result in significant changes in technology, economic conditions, or site variations that could render this letter inaccurate. Accordingly, neither Carlos Zubieta Architect nor any other party shall rely on the information or conclusions contained in this letter after 12 months from the date of issuance of certificate of occupancy without the express written consent of Michelucci & Associates, Inc. Reliance on this letter after such period of time shall be at the user's sole risk. Should Michelucci & Associates, Inc. be required to review the letter after 12 months from its date of issuance, Michelucci & Associates, Inc. shall be entitled to additional compensation at then-existing rates or such other terms as may be agreed upon between Michelucci & Associates, Inc. and Carlos Zubieta Architect.

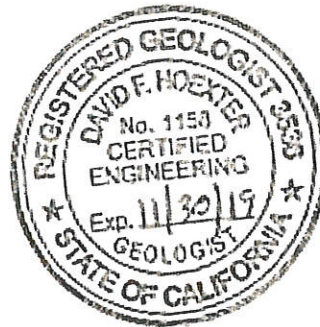
CLOSING

We are pleased to have been of service to you on this project, and will be available to review our findings with you and your other consultants at the earliest convenience.

Very truly yours,
MICHELUCCI & ASSOCIATES, INC.



David F. Hoexter
Certified Engineering Geologist #1158
(expires 11/30/19)



Joseph Michelucci
Geotechnical Engineer #593
(expires 3/31/19)



Attached: Carlos Zubieta Architecture, 2018, Arbor Residence Site Plan, Sheet A-1.0, originated October 14, 2016, revised to include slope monitoring monument locations August 17, 2018.



CARLOS ZUBIETA ARCHITECTURE
1745 ABBOT KINNEY BLVD
VENICE, CALIFORNIA 90291
PH 310 827 8195

ARCHITECT'S SEAL



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REVISIONS

- △ REVISIONS PER PLANNING SUBMITTAL COMMENTS 12-9-18
- △ REVISIONS PER PLANNING SUBMITTAL COMMENTS 4-21-17
- △ REVISIONS PER CDCR HEARING COMMENTS 7-24-17
- △ SITE SECTION: SLOPE MONITORING MONUMENT 9-17-18

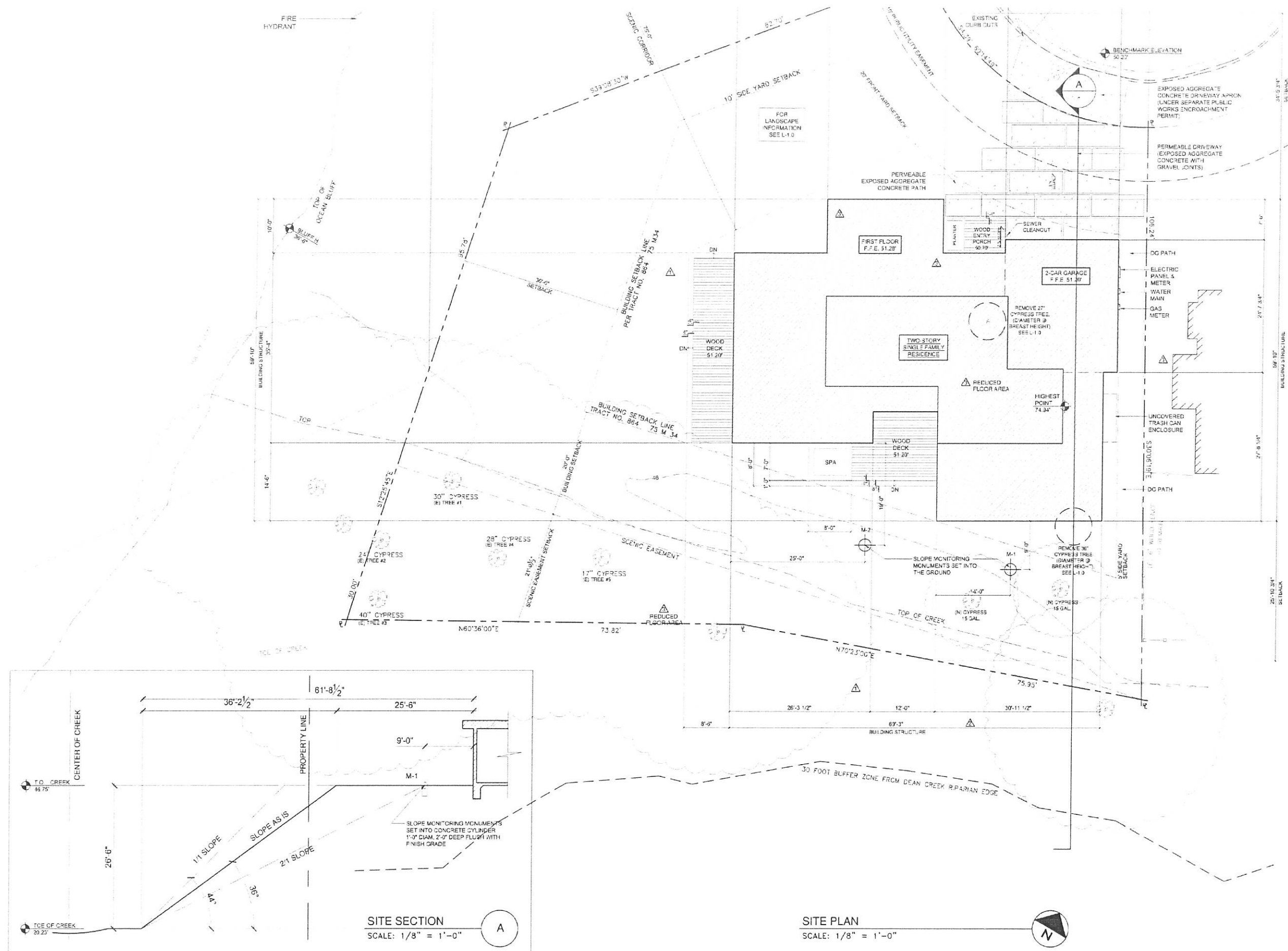
ARBOR RESIDENCE

199 ARBOR LANE
MOSS BEACH, CA 94038

SITE
PLAN

A-1.0

DATE	SCALE
OCTOBER 14, 2018	SCALE 1/8"=1'-0"





County of San Mateo - Planning and Building Department

ATTACHMENT R

Midcoast Community Council

*An elected Advisory Council to the San Mateo County Board of Supervisors
representing Montara, Moss Beach, El Granada, Princeton, and Miramar*

P.O. Box 248, Moss Beach, CA 94038-0248 - www.MidcoastCommunityCouncil.org

Chris Johnson **Lisa Ketcham** **Dan Haggerty** **Dave Olson** **Laura Stein** **Claire Toutant**
Chair Vice-Chair Secretary

Date: November 9, 2016
To: Dennis Aguirre, Project Planner
Cc: Supervisor Don Horsley
Camille Leung, SMC Planning Dept
Marlene Finley, SMC Parks Director
Renée Ananda, CA Coastal Commission staff
From: Midcoast Community Council/ Chris Johnson, Chair
Subject: **PLN2016-00444, new single family dwelling on coastal bluff at 199 Arbor Ln, Moss Beach**

Thank you for the early referral of this application. Our comments focus on public coastal access and erosion hazards of the site, which has near vertical sandy coastal cliffs on the west, and the steep bank of Sunshine Valley, at the mouth of Dean Creek, on the south.

A coastal erosion study is needed which includes assessment of hazard exposure to the year 2100 including increased rate of erosion due to sea level rise, consistent with the Coastal Commission 2015 Sea Level Rise Policy Guidance document. A longer planning horizon facilitates the identification of triggers for adaptation measures, since it is unlikely that the development would be removed at the end of the proposed 50-year lifespan. LCP Policy 9.8(d) prohibits new structures that rely on shoreline protection now or in the future.

[SEE SUBMITTED GEOTECHNICAL & GEOLOGIC REPORT](#)

The drainage plan (C-1 Berry & Associates) shows the existing top of bluff approximately 44 feet west of the property line and locates a resulting 50-foot ocean bluff setback on the plan; however, the survey and site plan (Carlos Zubieta, 2016) show top of ocean bluff only 30 feet west of the property line. The 1972 Cypress Cliffs Subdivision survey map shows top of ocean bluff approximately 67 feet from Lot 12 property line (199 Arbor Lane), which would indicate approximately 37 feet of bluff recession at the site in the last 44 years.

Next door to the north, coastal armoring was needed to protect 198 Arbor Lane only ten years after construction. The Initial Study for CDP83-13 notes that the bluff consists of unconsolidated sandy soil subject to erosion from ocean waves and surface runoff.

To the south, on the other side of Sunshine Valley, CCC appeal of major remodel at 263 Nevada addressed coastal erosion: "The Commission's Senior Geologist concludes that the recommended 50-year coastal blufftop setback for the project site would be 80.3 feet" (CCC 12/13/2012 staff report, p.18). Special Condition #3 (p. 8) is an Assumption of Risk, Waiver of Liability, and Indemnity Agreement whereby the permittee agrees on behalf of himself and all successors and assigns to assume all risks of coastal hazards. Future armoring is prohibited and removal of development required when it becomes unsafe to occupy.

Public coastal access opportunity is described on the attached slide.

Thank you for your consideration of these comments. Please keep us informed of future studies and modifications of this project.

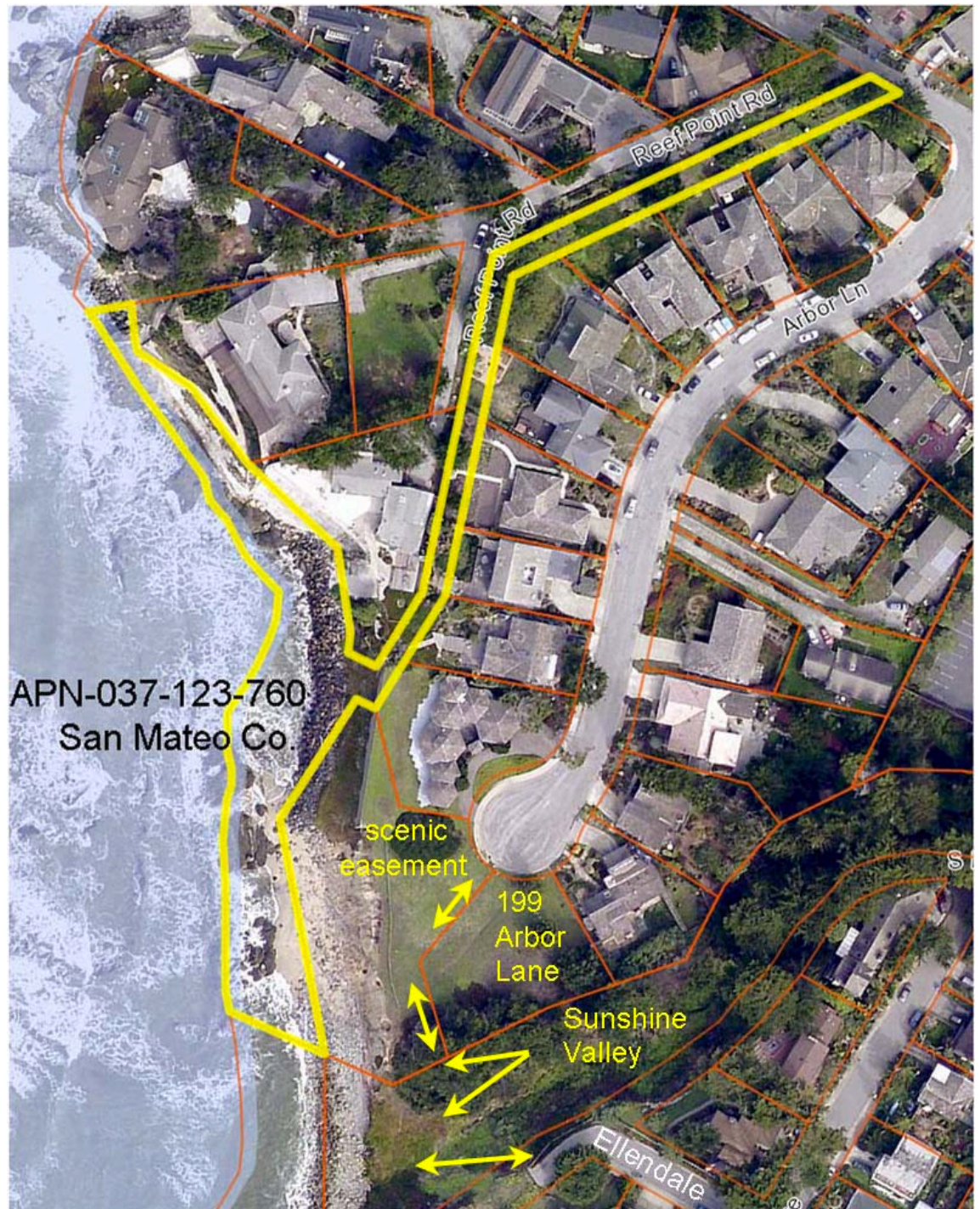
Public Coastal Access

County parcel connects Wienke Way to blufftop shoreline via former paper street, The Strand, but private encroachment and coastal armoring block public coastal access there.

Scenic easement parcel at end of Arbor Lane is signed “private”.

Public shoreline access and a hiking thread of the CA Coastal Trail could be provided via:

- Arbor Lane
- scenic easement
- Sunshine Valley via switchback trail through cypress trees
- Ellendale hillside trail





County of San Mateo - Planning and Building Department

ATTACHMENT S

Midcoast Community Council

*An elected Advisory Council to the San Mateo County Board of Supervisors
representing Montara, Moss Beach, El Granada, Princeton, and Miramar*

P.O. Box 248, Moss Beach, CA 94038-0248 - www.MidcoastCommunityCouncil.org

Lisa Ketcham **Dave Olson** **Claire Toutant** **Laura Stein** **Dan Haggerty** **Chris Johnson** **Brandon Kwan**
Chair Vice-Chair Secretary Treasurer

Date: August 23, 2017

To: Carmelisa Morales, Project Planner

Cc: Renée Ananda, CCC Coastal Program Analyst

From: Midcoast Community Council/ Lisa Ketcham, Chair

Subject: **199 Arbor Lane, Moss Beach, new single-family dwelling on coastal bluff
- PLN2016-00444 (APN 037-123-430)**

West of this bluff top site is a near-vertical sandy coastal cliff, and immediately adjacent on the south is the steep eroding bank of Sunshine Valley (Dean Creek) where it meets the ocean.

MCC stressed the need for a coastal erosion study in our initial comments on 11/9/2016. Assessment of hazard exposure should include increased rate of erosion due to sea level rise, consistent with the Coastal Commission 2015 Sea Level Rise Policy Guidance document. Longer planning horizon to the year 2100 facilitates the identification of triggers for adaptation measures, since it is unlikely that the development would be removed at the end of the proposed 50-year lifespan. LCP Policy 9.8(d) prohibits new structures that rely on shoreline protection now or in the future.

These are follow-up comments on this project:

Coastal hazard conditions of approval should be included, consistent with Coastal Commission requirements for other shoreline development, particularly in light of Sea Level Rise.

- Prohibit future shoreline armoring.
- Require removal of development if it becomes unsafe to occupy due to threat of coastal hazards.
- Require removal of debris that falls from blufftop onto beach.
- Require assumption of all risks of coastal hazards, waiver of liability, and indemnification agreement.
- Require recordation of deed restriction imposing coastal hazard conditions as covenants, conditions and restrictions on the use and enjoyment of the property.

These conditions are applied to development that may not currently be on the shoreline parcel, such as Aug 2014 CDP for 354 & 358 Princeton Ave.

<http://documents.coastal.ca.gov/reports/2014/8/F10a-s-8-2014.pdf>

These conditions should also apply to the adjacent cliff face of Sunshine Valley (Dean Creek). County Planning staff 6/4/1997 correspondence regarding a well for this site indicated development setbacks from the creek bluff top must comply with LCP Policy 9.7 (now 9.8), Regulation of Development on Coastal Bluff Tops.

May 2016 site survey shows proposed rear deck approximately five feet from top of bank of Sunshine Valley. Updated bluff recession measurements should be sure to indicate the actual cliff face and not include any undercut surface areas.

Coastal Commission Senior Geologist concluded the recommended blufftop setback at nearby 263 Nevada would be 80 feet (CCC 12/13/2012 staff report, p. 18)

<http://documents.coastal.ca.gov/reports/2012/12/Th12b-12-2012.pdf>

July 2016 Michelucci geotech report recommends fortifying the foundation against bluff retreat with deep-drilled piers. These piers may make it difficult to move the house when bluff retreat encroaches. They will become a hazard when the bluff eventually erodes around them.

Thank you for the opportunity to comment. Please keep us informed of future studies and modifications of this project.



County of San Mateo - Planning and Building Department

ATTACHMENT T

Midcoast Community Council

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Dave Olson . Claire Toutant . Lisa Ketcham . Dan Haggerty . Chris Johnson . Brandon Kwan . Barbra Mathewson
Chair Vice-Chair Secretary Treasurer

Date: May 9, 2018

To: Carmelisa Morales, Project Planner

Cc: Renée Ananda, CCC Coastal Program Analyst

From: Midcoast Community Council/ Dave Olson, Chair

Subject: **Arbor Lane, Moss Beach, new single-family dwelling on coastal bluff --
PLN2016-00444 -- Mitigated Negative Declaration**

MCC issues of concern regarding this project remain basically the same as our 8/23/17 comments: coastal bluff instability and erosion, both on the near-vertical sea cliff to the west, and the steep bank of Dean Creek ravine on the south, which is also subject to compliance with LCP Policy 9.8, Development on Coastal Bluff Tops.¹

Assessment of coastal hazard exposure should include increased rate of erosion due to sea level rise, consistent with the Coastal Commission 2015 Sea Level Rise Policy Guidance document. The minimal 50-year horizon is unrealistically short for the economic life span of residential development. Longer planning horizon to the year 2100 facilitates the identification of triggers for adaptation measures, which will be needed as the cliffs approach the residence.

Michelucci 8/29/17 geologic investigation update reported a maximum 11 feet of ocean bluff retreat at the site during winter 2016/17. While this episodic event may not affect average annual bluff retreat estimates, it does affect the starting point for the proposed development. Distance from bluff edge to building (ignoring the wood deck) is reduced from 77 to 66 feet. This changes the estimated time for bluff erosion to reach the house to 53 yrs @1.25 ft/yr or 84 yrs @0.78 ft/yr. Coastal Commission Senior Geologist concluded the recommended 50-year coastal bluff-top setback at nearby 263 Nevada should be 80 feet, including 63 feet due to erosion (at 1.26 ft/yr), 12 feet due to slope stability, and 5 feet due to sea level rise.²

Cliff retreat at Dean Creek ravine should be more carefully analyzed for recommended setback for the economic life of the project without the possibility of armoring the bluff. The "top-of-bank" of the ravine is shown on the site plan about 18 feet from the proposed house. Portions of the upper bank are very steep and undercut in places, with tree roots exposed. If and when the large cypress trees fail, they will likely take a

¹ County Planning staff correspondence, 6/4/1997

² California Coastal Commission staff report, 12/13/2012, p. 18,
<http://documents.coastal.ca.gov/reports/2012/12/Th12b-12-2012.pdf>

large chunk of the bluff with them, leaving bare loose soil exposed. Neighborhood residents report that developed parcels on both sides of the ravine have experienced gradual and episodic bluff retreat.

The 1908 Moss Beach subdivision map includes 40-ft-wide North and South Laguna Streets along either side of the ravine. South Laguna has mostly eroded away and North Laguna was never built. The Arbor Lane 1972 subdivision includes a 20-ft-wide scenic easement along the north bank of Dean Creek ravine. This was the northern half of the 1908 street easement, and several feet of it are now below the top-of-bank per the project survey. The 1908 subdivision map compared to the 2016 survey for the project indicates the top-of-bank retreated about 30 feet (average 0.27 ft/yr). The proposed 18-ft development setback is not much leeway next to a 28-ft drop-off. This estimate shows the top-of-bank would retreat to within 10 feet of the house in 30 years. How much bluff retreat could be tolerated before protective or adaptation measures would need to be taken?

Mitigation #14, requires deep-drilled piers to fortify the foundation against bluff retreat, as recommended in the Michelucci Geotechnical Report. These piers will make it more difficult to move the house and restore the site when bluff retreat encroaches. A recent example of the resulting hazard and sea-cliff damage from foundation piers exposed by bluff erosion occurred at the Ritz Carlton in Half Moon Bay. This is an additional significant impact.

LCP Policy 9.8 prohibits new structures that rely on shoreline protection now or in the future. The Neg/Dec does not discuss environmental impacts of coastal armoring. Coastal hazard conditions of approval should be included for the coastal bluff on both west and south, consistent with Coastal Commission requirements for other shoreline development:

- Prohibit future shoreline armoring.
- Require removal of development if it becomes unsafe to occupy due to threat of coastal hazards.
- Require removal of debris that falls from bluff top onto beach.
- Require assumption of all risks of coastal hazards, waiver of liability, and indemnification agreement.
- Require recordation of deed restriction imposing coastal hazard conditions as covenants, conditions and restrictions on the use and enjoyment of the property.

Thank you for the opportunity to comment.



County of San Mateo - Planning and Building Department

ATTACHMENT U

CALIFORNIA COASTAL COMMISSION

NORTH CENTRAL COAST DISTRICT OFFICE
45 FREMONT STREET, SUITE 2000
SAN FRANCISCO, CA 94105
PHONE: (415) 904-5260
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WEB: WWW.COASTAL.CA.GOV

**RECEIVED**

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July 14, 2017

**SAN MATEO COUNTY
PLANNING AND BUILDING
DEPARTMENT**

Carmelisa Morales, Project Planner
San Mateo County Planning and Building Department
455 County Center, 2nd Floor
Redwood City, California 94063

Re: San Mateo County Planning Case Number PLN2016-00444 (Zubieta) – 199 Arbor Lane, Moss Beach

Dear Ms. Morales,

Thank you for forwarding the County's Planning Case Number PLN2016-00444 project referral form, dated June 28, 2017, and received in our San Francisco office on June 30, 2017. We also received (on July 11, 2017) a pdf copy of the May 9, 2015 *Biological Resources Assessment* report prepared by Kopitov Environmental. The applicant is requesting Coastsides Design Review, a Grading Permit, and Coastal Development Permit for a new 3,542 square-foot single-family dwelling. The proposed project includes 368 cubic yards of grading and the removal of two cypress trees. The parcel is constrained with two recorded scenic easements.

The proposed project site is located on a parcel at 199 Arbor Lane in the Cypress Cliffs Subdivision of Moss Beach, within an area zoned as R-1/S-17/DR/CD. Local Coastal Program (LCP) Section 6300.2 for the S-17 combining district provides regulations applicable to any single-family residential district. We suggest that the proposed residence be evaluated for consistency with the development standards in LCP Section 6300.2. The site plan (Sheet A1.0) you've provided with the referral shows a portion of the proposed concrete pavers and the driveway sited within the scenic corridor. The subdivision map states that the "*Scenic Easement*" as shown on lots 11, 12, 13, 14, and 17 shall be kept open and free from buildings or structures of any kind except that sideline fencing may run to top of bank. Impervious structures, as described in LCP Section 6300.2, include, but are not limited to, non-porous driveways, decks, patios, walkways and swimming pools. The proposed concrete pavers and driveway are structures as described by the LCP and as such are restricted from being located within the easement for the scenic corridor. We recommend that the County require the applicant remove these proposed structures/development from the 75-foot scenic corridor.

We suggest that the County analysis evaluate the proposed project's consistency with the Visual Resources component of the LCP including, but not limited to, LCP Policies 8.4 regarding bluff top development and landscaping and 8.5 for locating development. The proposed project must adhere to the Special Design Guidelines for Coastal Communities as specified in LCP Policy 8.13a for the communities of Montara, Moss Beach, El Granada, and Miramar. The project site is located on a bluff top and should be reviewed for consistency with LCP Policy 9.8 that provides for regulating development on coastal bluff tops, as well.

LCP Policy 7.1 defines intermittent streams as sensitive habitat and specifies sensitive habitat areas as areas that include, but are not limited to, habitat that supports rare, endangered, and unique species. LCP Policy 7.3 prohibits any development or land use that would have a significant adverse impact on sensitive habitat areas and requires that development be sited and designed to prevent impacts that could significantly degrade sensitive habitat. LCP Policy 7.4 limits uses within sensitive habitat areas to resource-dependent uses. Only project activities consistent with those listed in LCP Policy 7.4 shall be allowed in the corresponding sensitive habitat areas. The Biological Assessment report states that the parcel is within the Dean Creek Watershed and identifies Dean Creek, located at the southern boundary of the parcel, as intermittent with potentially suitable habitat for California red-legged frog, San Francisco garter snake, San Francisco dusky-footed woodrat, salt marsh common yellowthroat, and the monarch butterfly to occur or pass through the project area. We urge County staff to evaluate the proposed residence's potential impacts to Dean Creek and the species mentioned above. We suggest that the applicant be required to ensure that the proposed development does not result in negative impacts to Dean Creek, including water quality. The site and adjacent area, which includes the stream, must be protected from erosion and polluted storm water runoff. We recommend that the analysis include an evaluation of the proposed project's consistency with standards contained in LCP Section 6565.20 for the protection of streams and drainages on or adjacent to property proposed for development.

The biology report indicates that "beach strawberry (*Fragaria chiloensis*)" plants occur within the proposed project area and states it is protected by LCP Policy 7.49. LCP Policy 7.49 actually provides for the protection of California wild strawberry (*Fragaria californica*) which is defined in the LCP as a Unique Species. We suggest that the applicant be required to clarify and confirm the occurrence of LCP-protected, strawberry on the parcel. LCP Policy 7.49 requires that any development, within one-half mile of the coast, mitigate the destruction of any California wild strawberry. The proposed project site is located within a half-mile of the coast; therefore we recommend that the County's analysis evaluate the proposed project's consistency with LCP Policy 7.49 and mitigate impacts as specified by this policy. The County should analyze the proposed project for its consistency with the policies in the Sensitive Habitats Component of the LCP for the protection of sensitive habitat, including LCP Policies 7.3, 7.4, and 7.5. The applicant must be required to mitigate impacts to Sensitive Habitat and Sensitive Habitat Areas.

We understand per your e-mail of July 11, 2017, that the biology report will likely be revised before the Initial Study/Mitigated Negative Declaration is prepared (and circulated). Please provide us with a copy of the revised report for our review. Feel free to contact me via e-mail at rananda@coastal.ca.gov or call me at 415-904-5292 if you have questions regarding our comments.

Sincerely,



Renée Ananda, Coastal Program Analyst
North Central Coast District



County of San Mateo - Planning and Building Department

ATTACHMENT V

CALIFORNIA COASTAL COMMISSION

NORTH CENTRAL COAST DISTRICT OFFICE
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May 22, 2018

Carmelisa Morales, Project Planner
San Mateo County Planning and Building Department
455 County Center, 2nd Floor
Redwood City, California 94063

Re: San Mateo County Planning Case Number PLN2016-00444 (Zubieta) – 199 Arbor Lane, Moss Beach

Dear Ms. Morales,

Thank you for forwarding the Notice of Intent to Adopt Mitigated Negative Declaration dated May 2, 2018, and received in our office on May 3, 2018 for the subject County Planning file referenced above. The proposed project is for the construction of a new 3,338-sq.-ft., two-story, single family residence with an attached 468-sq.-ft., two-car garage on an undeveloped 14,320-sq.-ft. parcel, in Moss Beach. Two significant-sized Monterey cypress trees are proposed for removal. The proposed project also includes 368 cubic yards of grading (186 cubic yards of excavation and 192 cubic yards of fill). A water well is located on the parcel and will be formally abandoned and capped prior to construction. The parcel is constrained by two scenic corridors. We submitted comments to County staff previously in our letter dated July 14, 2017 (a copy of the letter is attached for your convenience).

Project Description

We note that the County's June 28, 2017 project referral described the proposed residence as being 3,542 square feet. The County evaluation must accurately reflect the description for the proposed project. Please clarify size of the proposed residence.

Geology and Soils/Hazards

The proposed project is located on a coastal bluff top and must be reviewed for consistency with Local Coastal Program (LCP) Policy 9.8 which regulates development on coastal bluff tops. LCP Policy 9.8 requires that bluff top development be permitted only if the design and setback provisions are adequate to assure stability and structural integrity for the expected economic life span of the development (at least 50 years) and if the development (including storm runoff, foot traffic, grading, irrigation, and septic tanks) will neither create nor contribute significantly to erosion problems or geologic instability of the site or surrounding area. The County analysis must evaluate the proposed residence's consistency with LCP Policy 9.8.

The applicant's geotechnical consultant firm, Michelucci & Associates, Inc., states in its August 29, 2017 geotechnical report that the primary geologic hazard at the site is coastal bluff retreat. Additionally, the report states that during the winter of 2016-2017 the bluff retreated six feet landward near the current southwest fence corner post and retreated 11 feet further to the north.

The report also notes that the slope failure/bluff erosion during the winter of year 2016-2017 was due to wave action at the beach level undercutting relatively weak, unconsolidated bluff sediments. The applicant's geotechnical report cites a Griggs & Savoy published calculation of average annual bluff retreat near the proposed project site based on an average rate of 1.25 feet per year, which if used to determine bluff retreat for the site, would result in the bluff retreat to the closest point of the proposed residence in 62 years. The applicant uses an erosion rate of 0.78 feet per year and determines that bluff retreat would reach the closest point of the residence in approximately 99 years.

We recommend that annual bluff retreat and the potential for large episodic bluff retreat events, such as what occurred in 2016-2017, be considered in the evaluation of hazards at the project site to determine adequate siting and design for the life of the structure. The setback from the existing bluff top edge should be maximized to sufficiently account for erosion and slope stability including the potential for increased erosion as a result of sea level rise over the required project design life. The proposed development must also not contribute to any increased erosion of the bluff as required by LCP Policy 9.8. Further, LCP Policy 9.8 prohibits new structures that would require the need for shoreline protection. We recommend that future shoreline protection not be allowed for the proposed project and that any approval is conditioned accordingly. The County's analysis should include a discussion of the impact of the proposed project on coastal resources, particularly the drilled piers proposed to support the slab-on-grade foundation, if and when the bluff retreat reaches the proposed residence.

Aesthetics/Scenic Resources

The proposed MND notes that the two significant trees proposed for removal will be replaced with two Monterey cypress trees to be located at the rear of the parcel. The Biological Resources discussion states that the applicant requested an exception to the required 2:1 replacement ratio in order to reduce further impacts to surrounding neighboring properties. We recommend that the County require the applicant provide options for off-site mitigation, since the County has given the applicant an exception to the required 2:1 tree replacement ratio. We suggest that the County analysis evaluate the proposed project's consistency with the Visual Resources component of the LCP including, but not limited to, LCP Policies 8.4 regarding bluff top development and landscaping and 8.5 for locating development. The proposed project must adhere to the Special Design Guidelines for Coastal Communities as specified in LCP Policy 8.13a for the communities of Montara, Moss Beach, El Granada, and Miramar.

Biological Resources/Sensitive Habitats

Dean Creek, an intermittent stream, is located to the south of the proposed project. LCP Policy 7.1 defines intermittent streams as sensitive habitat and specifies sensitive habitat areas as areas that include, but are not limited to, habitat that supports rare, endangered, and unique species. LCP Policy 7.3 prohibits any development or land use that would have a significant adverse impact on sensitive habitat areas and requires that development be sited and designed to prevent impacts that could significantly degrade sensitive habitat. LCP Policy 7.4 limits uses within sensitive habitat areas to resource-dependent uses. Only project activities consistent with those listed in LCP Policy 7.4 shall be allowed in the corresponding sensitive habitat areas. LCP

Carmelisa Morales, San Mateo County
PLN2016-00444 (Zubieta)
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Page 3

Policy 7.11 requires that where no riparian vegetation exists along both sides of riparian corridors, buffer zones must extend 30 feet from the midpoint of intermittent streams. We recommend that the County's analysis of the proposed project evaluate its consistency with LCP Policy 7.11; along with the standards contained in LCP Section 6565.20 for the protection of streams and drainages on or adjacent to property proposed for development.

Public Access

LCP Policy 10.1 requires some shoreline access as a condition of granting development permits for any public or private development permits (except as exempted by Policy 10.2) between the sea and the nearest road. The type of provision for shoreline access, the location of the access, and the amount and type of improvements required shall be consistent with the policies of this component. We recommend that the County evaluate the proposed project for its consistency with LCP Policy 10.1, as it does not meet the criteria to be exempt under LCP Policy 10.2.

Feel free to contact me via e-mail at rananda@coastal.ca.gov or call me at 415-904-5292 if you have questions regarding our comments.

Sincerely,


Renée Ananda, Coastal Program Analyst
North Central Coast District