

## **PROJECT SUMMARY**

The owner/applicants, Martin Casado and LeiLei Shei, are requesting coastal permit approval for construction of an underground soldier-pier and tieback system on the subject property located at 8 Ocean Avenue, Bolinas CA. Off-site disturbance and improvements have caused erosion on the subject property including unmitigated/improper site disturbance on the neighboring property to the east, and a permitted retaining wall on the west that has extended over the assumed property line.

The proposed project would include after the fact permitting of two on site pier and tieback systems, one 64-foot section on the east side, and a 137-foot section on the west side. In addition, the project requires constructing a new nine-foot section of soldier piers, including a singular tieback to help reinforce the area adjacent to the erosion on the eastern property boundary and protect existing residential structures and infrastructure. The project site includes a 3.32-acre single-family residential parcel consisting of mainly ornamental landscaping, coastal bluff, and beach. The existing residence was constructed prior to the California Coastal Act of 1976. No other improvements or modifications to the subject property is proposed. No modifications or increase in existing residential structures is proposed.

The proposed project has been designed to follow the guidelines set forth for coastal development in Marin County, and the policies and guidelines presented in the Local Coastal Program Unit I and the Bolinas Gridded Mesa Community Plan. This includes ensuring that the proposed construction is consistent with the Marin County Municipal Code (Interim) Section 22.57.130I(k) for shoreline protective works. No sensitive habitat or features would be disturbed, and no trees would be removed as a result of the project. The proposed project would feature only underground improvements and would not be visible from the beach below.

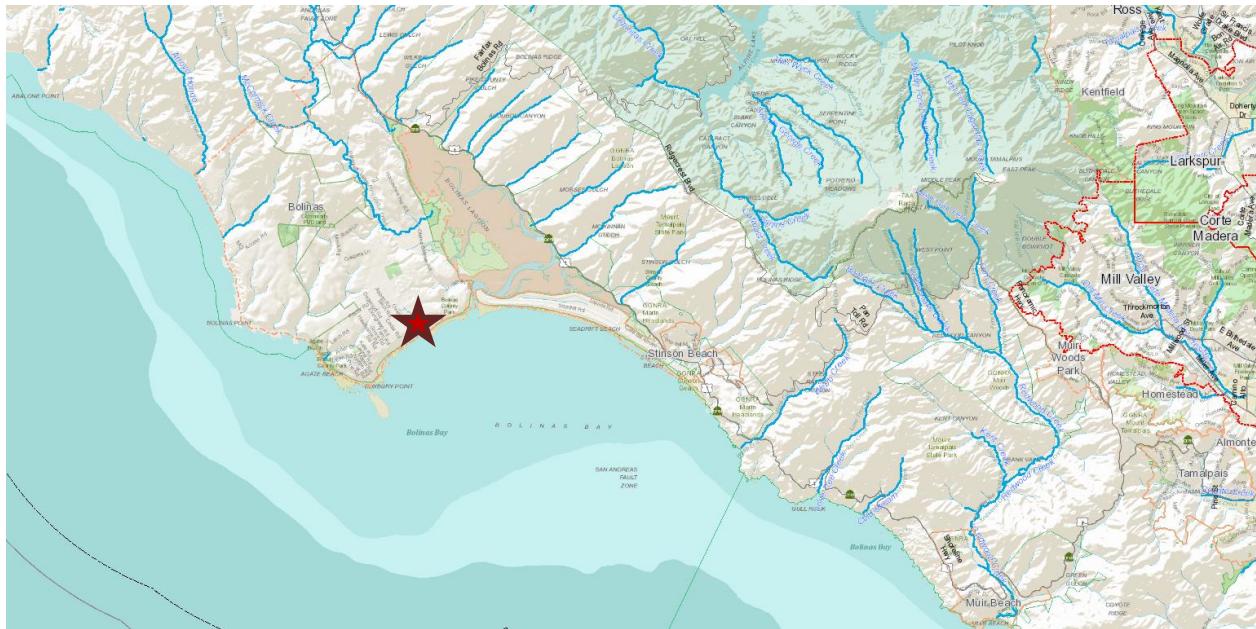
### **Project Goals and Objectives**

The overall goal for the proposed project is to make improvements that will enable using the subject property for the next 40+ years by arresting localized erosion caused by site disturbance occurring on neighboring properties.

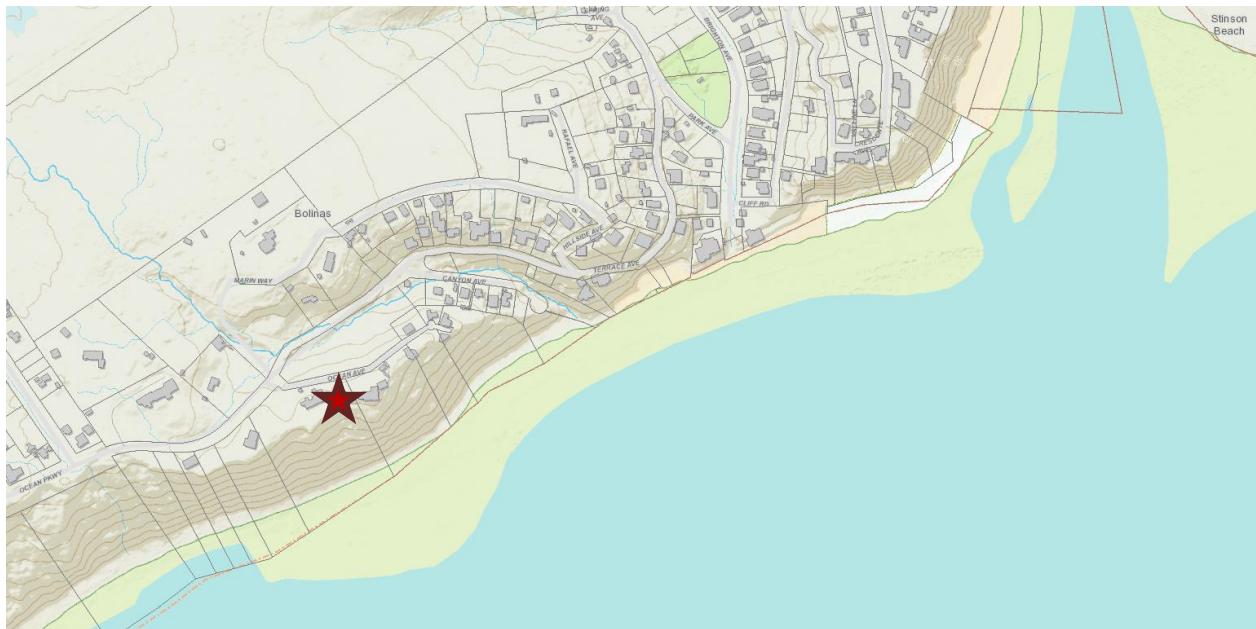
The objectives for the proposed project are:

1. Permit an underground soldier-pile pier and tieback support system to prevent localized erosion near a single-family dwelling.
2. Permit improvements to reduce the accelerated rate of localized erosion adjacent to the bluff face.
3. Eliminate potentially hazardous conditions (areas exposed by erosion or landsliding) on 20 Ocean Avenue to the east, and 105 Terrace to the west.
4. Relieve the economic burden to the new homeowner.

The proposed project is consistent with the 2015 Marin Countywide Plan, the Marin County Local Coastal Program Unit I, the Bolinas Community Area Plan (1978), and the California Coastal Act (1976).



**Figure 1: Vicinity Map**



**Figure 2: Project Location Map**

## **PROJECT DESCRIPTION**

### **GENERAL INFORMATION:**

<b>APN:</b>	<b>193-172-17</b>
<b>Countywide Plan:</b>	<b>C-SF5 (Coastal, Single-family, 1 unit/1.5 acres)</b>
<b>Community Plan:</b>	<b>Bolinas Community Area Plan</b>
<b>Zoning:</b>	<b>C-RA B2 (Coastal, Single-family residential, 10,000-sf minimum lot size)</b>
<b>Lot size:</b>	<b>3.32 acres – 144,619 sq ft</b>
<b>Adjacent Land Uses:</b>	<b>Residential, bluff, beach, Pacific Ocean</b>
<b>Vegetation:</b>	<b>Non-native grassland, coastal scrub, unmaintained landscape ornamentals</b>
<b>Topography and Slope:</b>	<b>Moderately to steeply sloping</b>
<b>Environmental Hazards:</b>	<b>N/A</b>

### **Project Location**

The proposed project at 8 Ocean Avenue, Bolinas, CA, (APNs: 193-172-17) is located in the unincorporated Bolinas community in west Marin. The site is located adjacent to the coastal strand/beach to the south and Ocean Avenue to the north. The site is accessed via Ocean Avenue, off Terrace Avenue, an unmaintained County road. Figure 1 and 2, Vicinity Map and Project Location Map, above, indicates the project site and its relationship to the surrounding community.

### **Topography and Landform**

The highest point of the property, the eastern edge of the subject property, is approximately 172-feet above sea level (asl) NAVD '88. The lowest elevation is approximately 0 feet asl NAVD '88 in the southern area of the site where the property meets the Pacific Ocean. The location for the proposed improvement is located approximately within the 165' to 169' asl contours of the subject property along the eastern edge of the existing development above the bluff face. In this location, a small landslide has formed in an northeast to southwest diagonal to the main bluff face, as a result of improper site work on the neighboring property. The topography where is generally sloping from the north to the south, until the bluff face at elevation 160' asl, where the bluff drops to the beach below. The yard area adjacent to the main residence actually slopes south to north (from 171' at the bluff face to 169' at the residence).

### **Existing and Adjacent Land Uses**

The project site is currently developed with a single-family residence constructed in 1958. The Countywide Plan's land use designation for the property is Coastal Single Family (C-SF5 -, Low Density Residential Coastal Zone). The County's zoning designation is (C-RA-B2, Coastal Residential, 10,000 sq ft minimum lot size).

The vegetation of the project area is typical of rural developed properties on the Marin Coast with a mixed mosaic of intentional landscaping, escaped ornamentals, and naturalized weeds. The regional vegetation is a mix of undeveloped to residential developed properties of prairies, annual

grasslands, coastal scrubs, and coastal woodland groves. The majority of the developed portion of the site is characterized as disturbed or developed landscaped/grassland.

### **Property Constraints**

The proposed project does not include any disturbance within setbacks or sensitive habitats. The proposed project includes construction of an underground pier and tieback system with minimal grading or excavation required. No vegetation would be removed as a result of the project.

### **Proposed Project**

The project includes the permitting of two sections of an underground soldier-pier and tieback system to prevent further localized erosion to the southwest and southeast of the existing residential structure. In addition, construction of a nine-foot section at the eastern property boundary will complete the overall soldier-pier system to prevent further erosion. Pursuant to MCMC Section 22.72.015i, the proposed improvements are located within the side yard setback but will be constructed underground or at grade. The proposed improvements are designed to protect the existing primary residence against future environmental hazards for an additional 40+ years. Based on observations of existing geologic site conditions, analysis of historical aerial photos, and review of prior studies in the area, Robert Settgast of Geoengineering, Inc. and William Moore, determined the natural rate of bluff retreat in the middle of the project site has been nearly static for over twenty years, however disturbance on either side of the residence has contributed to an accelerated rate of erosion that could endanger the structure. The proposed project has been evaluated for code consistency pursuant to Marin County Development Code (MCMC) Interim § 22.57.130l(k) Shoreline Protection. Given the existing conditions adjacent to the subject property, and pursuant to MCMC § 2.57.130l(k)(2), shoreline protective works are allowable based on the following criteria:

*2. Standards and requirements for shoreline protective works. Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline process shall be permitted only when:*

- a. Required to serve coastal-dependent uses or to protect existing structures (constructed before adoption of the LCP).*
- b. No other nonstructural alternative is practical or preferable.*
- c. The condition causing the problem is site specific and not attributable to a general erosion trend, or the project reduces the need for a number of individual projects and solves a regional erosion problem.*
- d. The structure will not be located in wetlands or other significant resource or habitat area, and will not cause significant adverse impacts to fish or wildlife.*
- e. There will be no reduction in public access, use and enjoyment of the natural shoreline environment, and construction of a structure will preserve or provide access to related public recreational lands or facilities.*
- f. The structure will not restrict navigation, mariculture or other coastal use and will not create a hazard in the area in which it is built.*

Per the Marin County Assessor's records, and stated above, the existing residence was constructed in 1958, prior to the drafting of the California Coastal Act. Mr. Moore and Settgast concluded that given the slide area off property, no alternative is feasible or practical and that site observations indicate the major contributor to erosion is site specific due to the unmitigated erosion caused by activities on the adjacent property. The proposed construction perpendicular to the property boundary will prevent near future erosion issues for the subject property and would potentially eliminate the need for multiple individual projects. Furthermore, permitting the final nine-foot section will reinforce existing improvements constructed in 2007.

There is no public access to the shoreline below where proposed improvements would be constructed, and the proposed improvement would not result in impacts to navigation, maricultural or any other coastal use. Finally, construction is expected to only occur from the elevated portions of the property, and no construction impacts would be required on the bluff face or at beach level. The buried piers will help protect the slope from future failure.

The proposed project recommends pre-emptively drilling a nine-foot long soldier pile pier and tieback system to protect the existing structures. Proposed construction would involve drilling soldier piles approximately 4'-0" on center approximately 24 inches in diameter and embedded 5 feet into bedrock. Steel piers are estimated to be approximately 25-feet in length. Conventional track-mounted drilling rigs can easily access the site and be used to drill piers at the subject property. Drilling of proposed piers would create limited spoils that would be reencountered on-site as needed.

#### **Drainage and Impervious surfaces**

As part of the proposed project no new drainage plan is required to convey surface run-off and run-off from existing structures. Run-off is currently directed northwest away from the bluff where it will be redirected through the existing drainage dispersion towards the north (away from the bluff face). No new impervious surfaces are proposed as part of the project.

## **LOCAL COASTAL PROGRAM UNIT I CONSISTENCY**

### **Water Supply:**

The Bolinas Community Public Utilities District currently serves the subject property. No water usage is required for the proposed development.

### **Septic System Standards:**

The subject property has an individual on-site sewage disposal system. No improvements or modifications are proposed for the existing residential structures. The proposed improvement is located to the southeast of on-site septic systems and would be significantly set back (over 130-feet) from the dispersal field located to the north of the existing residence.

### **Grading and Excavation:**

The property is sloped from northwest to the southeast. The localized erosion and landsliding is encroaching from each side of the property: uncontrolled site disturbance on the southeast, and a new improvement on the southeast that contributes to new landsliding. Proposed construction would include limited spoils required for excavation of the two drilled piers. Limited spoils could be recontoured after constructions to reduce visual impacts associated with construction activities or dispersed within the site. No excavation materials would be off-hauled from the project site.

### **Archaeological Resources:**

The proposed development project does not entail site disturbance in this portion of the property. As required by Marin County Code, in the event archeological or paleontological resources are uncovered during construction, all work shall immediately cease and the services of a qualified consulting archeologist be engaged to assess the value of the resource and to develop appropriate mitigation measures.

### **Coastal Access:**

The development area on the property is not located adjacent to a coastal area that is identified by the Local Coastal Program, Unit I, as an area where public access is desirable or feasible. Proposed improvements are located on areas of the project site that would not be used for access to the beach below.

### **Housing:**

The proposed project includes the development of an underground pier and tieback system to ensure stability for an existing single-family residence built prior to 1970.

### **Stream Conservation Protection:**

No vegetation removal or site disturbance is proposed for natural areas. No improvements are proposed off the property or in areas adjacent to any potential sensitive habitats. There will be no impact to stream areas.

**Dune Protection:**

The proposed project does not have dunes or related resources on or near the site. The proposed project would have no impact on sensitive dune habitats. The project site is not located in a dune protection area as identified by the Natural Resources Map for Unit I of the Local Coastal Program.

**Wildlife Habitat:**

The project area does not have the potential to support special-status wildlife; therefore, the proposed project plans within the project area will not result in impacts to special-status wildlife. No improvements are proposed off the property or in areas adjacent to any potential sensitive habitats.

**Protection of Native Plant Communities:**

No improvements are proposed off the property or in areas adjacent to any potential sensitive habitats or special-status plants.

**Shoreline Protection:**

The proposed project includes the underground construction of a pier and tieback system to arrest localized erosion on a neighboring property. Development of the proposed improvement would not directly impact natural erosion of the shoreline below, and south of the project area.

**Geologic Hazards:**

The subject property is not located in an area of geologic hazards as indicated on the Geologic Hazards Map for Unit I of the Local Coastal Program, and is not located within the delineated boundaries of the San Andreas Fault Zone as identified on the Alquist-Priolo special Studies Map.

According to the Marin County Soil Survey (USDA 1978), there are two soil series on the site; Xerorthents-urban land and rock outcrop-Xerorthents. Xerothents type is used to describe the highly variable, disturbed soils, in this case, urban flatlands and the rock outcrops of the bluff face. Below the bluffs, the soil type is characterized as beaches.

Most of the property is characterized by a Monterey formation. The proposed project includes grouted tiebacks that will be drilled into the Monterey formation to depths beyond the assumed depth of bedrock. The Settgast/Moore report details observed recommendations.

**Public Works Projects:**

The proposed project does not entail expansion of public roads, flood control projects, or utility services.

The Bolinas County Fire Department provides fire protection to the Bolinas community. Police protection is provided by the Marin County Sheriff's Department.

Construction of the proposed project would not result in any significant impact to the emergency service providers. There are no operational needs as a result of the project.

**Land Division Standards:**

No land division or lot line adjustment is proposed as part of this project.

**Visual Resources:**

The proposed improvements are underground and require minimal excavation for drilled piers. and would not be visible from public viewing areas in Bolinas or areas along coast. There would be no impacts to visual resources, as viewed from any public street or public viewing location, as a result of this project.

**Recreation/Visitor Facilities:**

The project is not located within the C-VCR zoning district and the proposed improvements would not have any impact upon recreation of visitor facilities.

**Historic Resource Preservation:**

The subject property is not located within the designated historic preservation boundaries for Bolinas as identified in the Marin County Historic Study for the Local Coastal Program, Unit I. Furthermore, although there are existing structures over 50 years old, the proposed project is to protect existing improvements by shoring site-specific areas of erosion.

## **COMPLIANCE WITH COUNTY PLANS AND ORDINANCES**

**2015 Marin Countywide Plan:**

The proposed project is consistent with the Marin Countywide Plan (CWP) for the following reasons:

**BIO-1.1        Protect Wetlands, Habitat for Special-Status Species, Sensitive Natural Communities, and Important Wildlife Nursery Areas and Movement Corridors.**

The proposed project is consistent with this policy because it would not entail development or disturbance within on-site wetlands, habitat or sensitive natural communities.

**BIO-1.3        Protect Woodlands, Forests, and Tree Resources.**

The proposed project is consistent with this policy because it would not entail the irreplaceable removal of a substantial number of mature, native trees. No native vegetation removal is required for the proposed project.

**BIO-2.2        Limit Development Impacts.**

The proposed project is consistent with this policy because it would not entail development or disturbance within existing habitat for special-status species of plants or animals.

**BIO-2.3        Preserve Ecotones.**

The proposed project is consistent with this policy because it would not alter riparian corridors, wetlands, baylands, or woodlands.

**BIO-2.7        Protect Sensitive Coastal Habitat.**

The proposed project is consistent with this policy because it would not entail the disturbance or removal of sensitive coastal habitats. The majority of the project site would remain undeveloped with proposed improvements occurring in areas of existing disturbance or low-habitat value.

**BIO-3.1        Protect Wetlands.**

The proposed project is consistent with this policy because it would not encroach into any potential sensitive habitats. According to County GIS records, the proposed improvements are over 100 feet from the Pacific Ocean.

**BIO-4.6        Control Exotic Vegetation.**

The proposed project is consistent with this policy because it would help control invasive and diseased on-site vegetation through the removal of invasive species and creation of a drainage plan. Only native plantings would be included as part of any landscaping plan.

**BIO-4.20       Minimize Runoff.**

The proposed project is consistent with this policy because it would incorporate Best Management Practices (BMP's) and other associated drainage features to effectively treat and control stormwater and impervious surfaces runoff.

**WR-1.3        Improve Infiltration.**

The project is consistent with this policy and would not result in substantial soil erosion or discharge of sediments or pollutants into surface runoff and would comply with the Marin County standards and best management practices required by the Department of Public Works.

**WR-2.3        Avoid Erosion and Sedimentation**

The project is consistent with this policy and would not result in substantial soil erosion or discharge of sediments or pollutants into surface runoff because the drainage improvements would comply with the Marin County standards and best management practices required by the Department of Public Works.

**DES-4.1       Preserve Visual Quality.**

The project would be consistent with CWP aesthetic policies and programs because it would protect scenic quality and views of ridgelines and the natural environment from adverse impacts related to development. Although the proposed project would entail physical development near the bluff, views towards the Pacific Ocean would generally remain unchanged. Proposed structures would not be visible from any public vantage point or beach area.

## Bolinas Community Area Plan (1978):

The proposed project is not located on the gridded mesa, therefore, the following Bolinas Community Area Plan (BCAP) criteria shall be used to determine the appropriate policies necessary to implement the plan. The proposed project is consistent with the BCAP for the following reasons:

**Land Use:** *Any new construction proposed for environmentally sensitive or potentially dangerous areas, including single family construction, shall be assessed in relation to its impacts (Cliff Erosion Zone, Drainage Patterns, and slope policy areas, Alquist-Priolo Seismic Safety Zone, Coastal Commission Permit Zone, Marin Countywide Plan Conservation Zone, and suitability of soils for septic systems.*

The project would be consistent with this policy because the proposed project includes a geotechnical engineering site assessment concluding that the proposed improvement would not impact any areas susceptible to landslides or bluff erosion.

### **Geologic Considerations – Bolinas Peninsula Slope, Landslide, and Cliff Erosion Policies (D):**

*This policy shall have the following basic elements:*

- A. *Marin County slope policy shall continue in effect*
- B. *Special engineering reports shall be required for all construction proposed in areas of the following description:*
  - a. *Slopes of 25% or greater*
  - b. *Prone to landslides*
  - c. *Within a zone extending inland from the top edge of all sea cliffs (usable life of a house considered to be 40 years)*

*Zone Depth*  
*Little Mesa to Duxbury Reef:*  
*2/ft yr x 40 yrs. = 80 ft.*

The project would be consistent with this policy because the existing structures are more than 50 feet from top of bluff. Robert Settgast and Willima Moore prepared a geotechnical investigation of the subject property and concluded that a localized slide is formed by site specific localized erosion due to poor maintenance and encroachments of the neighboring properties.

## California Coastal Act:

### **ARTICLE 4 – MARINE ENVIRONMENT**

#### **Section 30235 Construction altering natural shoreline**

*Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.*

The project would be consistent with this section because the proposed project is required to protect two existing structures constructed prior to development of the Coastal Act. Furthermore, the proposed project has been designed to minimize impacts to sensitive vegetation or resources and would not degrade these areas nor would it result in adverse impacts to local shoreline sand supply.

## **ARTICLE 5 - LAND RESOURCES**

### **Section 30240 Environmentally sensitive habitat areas; adjacent developments**

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

*(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

The project would be consistent with this section because the proposed design has been developed based on an evaluation of all the potential land constraints. The project has been designed to minimize impacts to sensitive vegetation and would not degrade these areas.

## **ARTICLE 6 - DEVELOPMENT**

### **Section 30250 Location; existing developed area**

*(a) New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. In addition, land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50 percent of the usable parcels in the area have been developed and the created parcels would be no smaller than the average size of surrounding parcels.*

The project would be consistent with this section because the proposed design has been developed based on an evaluation of all the potential land constraints. The project has been designed to minimize areas of new disturbance and is located near existing developed areas. The project has water for domestic and fire protection purposes, has adequate access, and would be situated away from streams and sensitive vegetation.

#### **Section 30251 Scenic and visual qualities**

*The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.*

The project would be consistent with this section because the proposed project is designed to minimize visual projections or intrusions above ridgelines or views through the project site. The project proposes minimal alterations to natural landforms and would not be seen from public vantage points.

#### **Section 30253 Minimization of adverse impacts**

*New development shall do all of the following:*

- (a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.*
- (b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.*
- (c) Be consistent with requirements imposed by an air pollution control district or the State Air Resources Board as to each particular development.*
- (d) Minimize energy consumption and vehicle miles traveled.*
- (e) Where appropriate, protect special communities and neighborhoods that, because of their unique characteristics, are popular visitor destination points for recreational uses.*

The project would be consistent with this section because the proposed project has been designed based on existing soil, drainage and woodland conditions. The proposed construction plan will assure stability and structural integrity and further preserve existing structures on and

off-site. Furthermore, proposed improvements plans have been designed to limit substantially altering the existing natural landforms.