COASTAL PERMIT ADMINISTRATOR STAFF REPORT- STANDARD CDP

FEBRUARY 27, 2025
CDP_2023-0029

PROJECT PLANNER CONTACT
MARK CLISER
860 N BUSH ST
UKIAH, CA 95482
PHONE: 707-234-6650
FAX: 707-463-5709
cliserm@mendocinocounty.gov

PROJECT SUMMARY

OWNER/APPLICANT:	Andrew King & JaeEun Myung 3235 Roswell Road NE #705 Atlanta, GA 30305
AGENT:	Meghan Durbin, Wynn Coastal Planning & Biology 703 N Main Street Fort Bragg, CA 95437
REQUEST:	Standard Coastal Development Permit to allow the construction of an 1,816 square foot (sf) single-family residence with attached 310 sf garage; 990 sf of decking; 121 sf concrete pad at entry; building height 18 feet above natural grade; roof mounted solar panels; install 2 bedroom septic system; trenching for connection to utilities; and a 1,686 sf concrete driveway and parking pad.
LOCATION:	In the Coastal Zone, within the town of Albion, lying on the west side of State Route (SR) 1, 1± mile southwest of the town of Albion. Located at 2731 Seaside Court, Albion; APN: 123-340-27.
TOTAL ACREAGE:	1.3± acres
GENERAL PLAN:	Rural Residential (RR5 [RR1]) and Rural Residential – Development Limitation (RR5:DL [RR1:DL]) General Plan (Chapter 7 – Coastal Element)
ZONING:	Rural Residential 5 acre minimum variable to 1 acre minimum and Rural Residential 5 acre minimum with development limitations variable to Rural Residential 1 acre minimum with development limitations and a floodplain combining district. (RR-5 [RR-1])/(RR-5:DLFP[RR-1:DLFP]) Mendocino County Code Title 20, Division II.
CODE REFERENCE:	Mendocino County Code (MCC) Section 20.376.010(A)
APPEALABLE	Yes
SUPERVISORIAL DISTRICT:	District 5 (Williams)
ENVIRONMENTAL DETERMINATION:	Mitigated Negative Declaration
RECOMMENDATION:	Adopt the Mitigated Negative Declaration and Project, subject to Conditions of Approval and Mitigation Measures.

PROJECT BACKGROUND & INFORMATION

PROJECT DESCRIPTION: Standard Coastal Development Permit to allow the construction of an 1,816 square foot (sf) single-family residence with attached 310 sf garage; 990 sf of decking; 121 sf concrete pad at entry; building height 18 feet above natural grade; roof mounted solar panels; install 2 bedroom septic system; trenching for connection to utilities; and a 1,686 sf concrete driveway and parking pad. The proposed development would result in total lot coverage of 10.92%. The property is situated on an elevated marine terrace on the north side of Salmon Point peninsula on a bluff top overlooking Whitesboro Cove. Technical studies, including biological and geotechnical were provided by the applicant and agent in support of the current request, which are kept on file with the Mendocino County Department of Planning & Building Services, and includes the information that follows.

Site Characteristics: The currently vacant and undeveloped parcel is located within the coastal zone, approximately one mile to the southwest of Albion and 8.2± miles south of the Town of Mendocino. Located on a bluff top, the approximately 1.3± acre property is accessed from SR 1 by proceeding south one mile from the town of Albion, turning west onto Pacific Reefs Road, and then north onto Seaside Court. The Project Site is located on the west side of State Route 1 and is not within a Highly Scenic area, nor is it plainly visible from State Route 1, due to topography.

The Rural Residential zoned and General Plan designated site lies within the Pacific Reefs subdivision and is surrounded by residential development and the Pacific Ocean. The elevation of the site ranges from approximately 40-150 feet above sea level, with the property steeply sloping down to the Pacific Ocean approximately midway through. The bluff top is vegetated by coyote brush scrub, Pacific reedgrass meadow, common velvet grass – sweet vernal grass meadows, and prostrate cape weed. At the break in slope down to the beach the vegetation is best classified as salal – berry brambles. Monterey pine and Monterey cypress trees are present along the southern edge of the study area. Mendocino coast paintbrush was observed on the bluff edge among the salal – berry brambles.

The nearest freshwater source is Big Salmon Creek 800 feet east of the Project Area, which flows into the Pacific Ocean. The top of the bluff is populated with dense grasses and coyote bush (Baccharis pilularis). A grove of Monterey cypress (Hesperocyparis macrocarpa) and bull pine (Pinus ponderosa) is in located in the southwest corner of the property.

The property is situated on an elevated marine terrace on the north side of Salmon Point peninsula. A small, subtle drainage swale traverses the eastern portion of the upper terrace and extends to the bluff edge. A small notch at the mouth of the swale on the bluff edge indicates that periodically, concentrated surface drainage reaches the bluff edge at this location. Some surface water originating on the easterly adjacent property and driveway likely flows into this drainage channel during periods of heavy rainfall. Site vegetation on the terrace consists of a moderate cover of grass and weeds, with a small thicket of pine trees in the southwest portion of the site adjacent to Seaside Court. The upper approximately three quarters of the bluff face is covered by a very dense growth of weeds and brush. Locally bare areas are present lower on the face and at the bluff toe, exposing soil and rock outcrops.

The project is not located on soil capable of supporting Mendocino Cypress woodlands. However, several special status species have been noted in the vicinity of the project site, predominately Behren's Silverspot Butterfly and Mendocino coast paintbrush as described and enumerated in the Biological Scoping, Wetland Delineation, Behrens' Silverspot Butterfly Survey & Botanical Survey Report prepared by Asa Spade, Senior Biologist Nicole Bejar, Biologist of Wynn Coastal Planning & Biology, dated July 20, 2023.

No surface water was observed on the terrace area during the Biologists' site visits; however, significant seepage was observed in the parts of the upper bluff face that was able to be explored. The dense vegetation conceals saturated conditions on the upper part of the bluff face. No seepage was observed emanating from the rock outcrops at the bluff toe. No wetlands were mapped within the flat, buildable area of the property. Ground surveys and a wetland delineation confirmed that no wetlands are present on the property.

This area is characterized by a generally cool, humid coastal climate that averages about 50 inches of rainfall annually (USDA 1998). Summers are characterized by intermittent fog, increasing in thickness into the winter. While rain is common, snow is exceedingly rare due to elevation.

Due to the sensitivity of the site and the location of the proposed project being within the definition of an Environmentally Sensitive Habitat Area (ESHA) buffer, per MCC § 20.308.040(H) further enumeration of site characteristics and potential impacts as a result of the project are analyzed in the attached Initial Study/Mitigated Negative Declaration.

Public Services:
Access: Seaside Court (private)
Water District: Pacific Reefs California Water District
Sewer District: None
Fire District: Albion Little River Fire Protection District

RELATED APPLICATIONS: The following applications have occurred on the subject parcel or on the surrounding properties and are relevant to the proposed project. All projects listed below have already been approved, unless otherwise stated.

Subject Parcel Projects:

- ST25324: Septic Permit Application Number 05/14/2023 – pending CDP approval.
- CalFire #73-23 6/22/2023 – 14 CCR 1276.01 Setback for Structure Defensible Space

AGENCY COMMENTS: On October 15, 2024, project referrals were sent to the following responsible or trustee agencies with jurisdiction over the Project. Their submitted recommended conditions are discussed in this staff report and contained in Conditions of Approval. A summary of the submitted agency comments are listed below.

TABLE 1: Referral Agency Responses

REFERRAL AGENCIES	COMMENT
Mendocino County Environmental Health	Comments
Mendocino County Department of Transportation	No Comment
Pacific Reefs Water District	No Comment
Northwest Information Center	Comments
CDFW	Comments
CCC	Comments
CAL FIRE	Approval
Albion-Little River Fire District	No Response
Sherwood Valley Band of Pomo Indians	Comments
Arch Committee	Approval/Comments

On August 11, 2023, the Mendocino County Division of Environmental Health responded requesting additional information regarding the project, including septic, a drainage plan prepared by a civil engineer and a will-serve letter from the Pacific Reefs Water District. PRWD responded to staff on August 15, 2023 with a 'no comment' letter. However, the applicant included a 'Will Serve' letter for the site from PRWD dated May 4, 2022.

The Northwest Information Center at Sonoma State (NWIC) responded on August 21, 2023 indicating a low likelihood of cultural artifacts on the site and not recommending additional surveys. The standard discovery clause condition has been added in the event that artifacts are discovered during construction.

Sherwood Valley Band of Pomo Indians provided comments on Jun 6, 2024, requesting Tribal monitors be present during the trenching phase of construction. This request has been added as a condition of approval.

PROJECT ANALYSIS

LOCAL COASTAL PROGRAM CONSISTENCY: The property is located within Mendocino County's Local Coastal Program boundaries. The proposed development is consistent with the goals and policies of the Local Coastal Program, General Plan, and Coastal Element Zoning Codes as enumerated following.

Land Use and Zoning: The proposed development is located within the boundaries of the Local Coastal Program (LCP) area, as shown on the LCP Land Use Map 18: Albion map. The project site is classified as Rural Residential (RR) by the Mendocino County General Plan, as shown on the General Plan Classifications map. The project site is classified as Rural Residential (RR) under the County's Coastal Element Chapter 2.2. The intent of the Rural Residential classification is:

> *"to encourage local small scale food production (farming) in areas which are not well suited for large scale commercial agriculture, defined by present or potential use, location, mini-climate, slope, exposure, etc. The Rural Residential classification is not intended to be a growth area and*

residences should be located as to create minimal impact on agricultural viability."

A single-family residence is a principally permitted use within the Rural Residential classification (Policy 3.2-11), and this site also has a variable density from five acre minimum to 1 acre minimum. The existing lot is 1± acre in size, so the development standards with respect to yard setbacks would follow the higher density RR-1 classification.

Additionally, the northern portion of the parcel adjacent to the Pacific Ocean is subject to a Development Limitation (DL) combining district. Per the coastal element, the DL combining district is applied to portions of parcels that have serious constraints that may prevent or severely limit development, including slopes over 30 percent, erosion or landslide. As currently proposed, all improvements including the single-family residence and accessory structures would remain outside of the DL combining district and at the southernmost point of the parcel.

Development of the site away from the bluff and outside of the DL combining district is consistent with the goals of the Coastal Element and coastal zoning code with respect to allowed uses, setbacks and lot coverage. The project, as proposed, would result in lot coverage of less than the maximum allowable 20 percent.

Grading, Erosion, and Runoff: Site preparation, including grading, in the areas of development is required to accommodate the proposed development. Additionally, trenching would be required to install underground utilities and piping, which would extend to the new residence from the proposed well and new septic system to be installed under the project. A Geotechnical Investigation was prepared by Brunsing Associates, Inc. (Brunsing), dated September 28, 2022, which is included as an attachment to this report (Attachment X).

At this time, this project does not propose grading amounts that would require an Air Quality Permit. The project would be required to implement standard Best Management Practices (BMPs) to prevent erosion and run-off during project construction and revegetate any bare soil as soon as feasible after the construction phase is complete. Staff finds the project would not result in significant erosion or run-off impacts and is compliant with MCC § 20.492.010 grading standards, MCC § 20.492.015 erosion standards, MCC § 20.492.020 sedimentation standards.

Groundwater Resources: The site is designated on the Mendocino County Coastal Groundwater Study Map as a Critical Water Resource Area, as shown on the Ground Water Resources map. Under the project, potable water would be provided by the Pacific Reefs Water District (PRWD). The proposed project would be served by an on-site septic system. A septic system permit has been applied for with the Mendocino County Division of Environmental Health (DEH), septic permit number ST24188. The system shall be subject to current Local Coastal Program policies and DEH regulations at the future time of a replacement septic permit being requested and reviewed.

Staff finds the proposed project would not adversely affect groundwater resources. Condition 6 is recommended to secure all necessary permits for the proposed development from County, State and Federal agencies having jurisdiction to ensure any groundwater protection policy or plan will be addressed.

With added conditions, the proposed project will be consistent with the Local Coastal Program policies related to groundwater resources and DEH.

Environmentally Sensitive Habitat and Other Resource Areas: Coastal Element Chapter 3.1 and MCC Chapter 20.496 *Environmentally Sensitive Habitat and Other Resource Areas* applies to all development proposed in the Coastal Zone, unless and until it can be demonstrated to the approving authority that the project will not degrade an environmentally sensitive habitat or resource area and shall be compatible with the continuance of such areas. The *LCP Habitats & Resources* map depicts the site as made up of plant habitat (Attachment J).

A Biological Scoping & Botanical Survey Report dated July 20, 2023 (Attachment V) was prepared by Asa Spade and Nicole Bejar for the project. The survey included biological scoping, a wetland delineation, Behrens' Silverspot Butterfly Survey, and a botanical survey report. The biological report indicated several types of environmentally sensitive habitat areas (ESHAs) were mapped within the project site. These include:

- Mendocino coast paintbrust (Castilleja mendocinensis)
- Salal – berry brambles
- Pacific reedgrass meadow

This report, a site visit in conjunction with CDFW as well as ongoing conversations with the Coastal Commission have resulted in the scope of the project being reduced from what was originally proposed, and several mitigations have been

recommended, including a dedicated Pacific Reedgrass enhancement area. Due to parcel size, the proposed project will be within 50 feet of the salal-berry brambles scrub but will not encroach into the Pacific reedgrass meadow, with no impacts to the Mendocino Paintbrush. The biological report included a Reduced Buffer Analysis that indicates the potential impacts and mitigation measure that would reduce impacts to ESHAs. An Initial Study/Mitigated negative Declaration was prepared for the project, which determined that any impacts on the environment could be mitigated to **less than significant** levels should these and other mitigation measures be incorporated into the project. Several conditions are proposed mandating compliance with the mitigation measures proposed in the Initial Study.

Hazards Areas: Mendocino County Coastal Element Chapter 3.4, Hazards Management, addresses seismic, geologic, and natural forces within the Coastal Zone.

Fire protection services are provided by the California Department of Forestry and Fire Protection (CalFire) and the Albion Little River Fire Protection District (ALRVFD). A State Fire Safe Regulations Application Form, CalFire File #73-23, for the project was submitted by the Applicant to CalFire, where the applicant received a setback exception letter, dated June 22, 2023, which states:

> "***14 CCR 1276.01 Setback for Structure Defensible Space***
> *(a) All parcels shall provide a minimum 30-foot setback for all buildings from all property lines and/or the center of the road. Due to the extenuating circumstances, parcel size, and facts as to why the structure needs to be built closer than 30 feet from the property line, your request shall be approved, provided the following conditions are satisfied:*
>
> 1. *This is a one-time exemption that only applies to this project.*
> 2. *Same practical effect is achieved by reducing the number of windows on the sides of the structure with less than 30 feet setback, using non-combustible exterior siding, and etc.*
> 3. *The proposed structure maintains a minimum 19' setback from the property line.*
> 4. *The specified requirements in the Conditions of Approval shall be adhered to*".

The proposed project was referred to both fire protection agencies, while no response from ALRVFD has been received by staff at this time. CalFire provided comment requiring the proposed project follow the recommended conditions of approval as outlined under CalFire File #73-23, kept on file with the Mendocino County Department of Planning & Building Services.

Since the proposed project is located on a blufftop parcel, geological investigations are required. As mentioned above, a Geotechnical Investigation, prepared by Brunsing, was submitted with the application that analyzed the site and proposed development.

Seawalls, breakwaters, and other structures altering natural shoreline processes or retaining walls are not proposed. It is the policy of the California Coastal Commission and Mendocino County to require recordation of a deed restriction as a condition of development on blufftop parcels, prohibiting the construction of seawalls and requiring that permitted improvements be removed from the property if threatened by bluff retreat. The restriction requires that the landowner be responsible for any clean-up associated with portions of the development that might fall onto a beach or into the ocean. Condition 39 is recommended by staff requiring the property owner to record a deed restriction prior to the final occupancy of any building permit associated with the Coastal Development Permit.

The Geotechnical Investigation, dated September 28, 2022, kept on file with the Mendocino County Department of Planning & Building Services, concluded that a bluff setback of 45 feet for future improvements will guarantee a structural life of 75 years and includes a safety factor of 1.5 consistent with MCC § 20.500.020 (B)(1). Recommendations for setbacks, site grading, foundation support, seismic design criteria, concrete slab-on-grade, retaining walls and site drainage were also provided. The proposed project will be consistent with the recommended 45-foot bluff setback. Condition 21 is included to require the projects consistency with the recommendations of the geotechnical investigation report for the project.

With added conditions, the proposed project will be consistent with MCC Chapter 20.500 regulations for hazard areas, including geologic hazards (faults, bluffs, tsunami, landslides, and erosion), fire and flood hazards.

Visual Resources and Special Treatment Areas: The proposed project site is not designated as a "Highly Scenic" area and is not visible due to topography from State Route 1 or any areas designated as "Highly Scenic". Therefore, the Project is not subject to the criteria of Mendocino County Code (MCC) § 20.504.015(C). To ensure the project utilizes the correct

building materials which have been selected to blend in hue and brightness with their surroundings, the project's proposed color palette and roofing material shall be submitted to the County for approval. Any exterior lighting will be downcast and shielded. As proposed, the project would be consistent with the intent of Visual Resource and Special Treatment Areas (MCC § 20.504.005 (C)). See attached architectural plans, elevations and conditions of approval.

Transportation, Utilities, and Public Services: The project would not contribute new sources of traffic on local and regional roadways. The cumulative effects of traffic resulting from development on this site were considered when the

Coastal Element land use designations were assigned. Access to the site would be provided from Pacific Reefs Road (private). The Mendocino County Department of Transportation stated that they had no comments on the proposed project at the time of routing. A minimum of two parking spaces are required for the project per MCC § 20.472.015 and are provided for in the garage and on the surface driveway, as depicted in the attached site plan.

Archaeological and Cultural Resources: On June 6, 2024, Sherwood Valley Band of Pomo Indians provided comments on the proposal; requesting Tribal monitors be present during the trenching phase of construction. On June 12, 2024, the Archaeological Commission reviewed the Archaeological Survey prepared for the project by Jamie Frattarelli, dated May 6, 2021. The Commission moved to accept the survey and recommended the inclusion of a condition informing the property owners of the "Discovery Clause" of MCC § 22.12.090, which prescribes the procedures to be followed in the event of the discovery of any cultural resources during construction of the project (Condition 9). The Commission further accepted the request of Sherwood Valley Band of Pomo Indians requiring Tribal monitors be onsite during ground disturbing activities (Condition 10). As proposed, the project would be consistent with the archaeological resource policies of Coastal Element Chapter 3.5 and MCC Chapter 22.12.

Public Access: The project site is not designated as a potential public access point on the certified LCP maps. Public access would not be feasible on this site due to the presence of ESHA abutting the blufftop and to protect the proposed ESHA impacted enhancement area. Staff finds the proposed project to be in conformance with public access policies contained in MCC, Chapter 20.528.

Takings Analysis: The proposed project is not consistent with MCC § 20.496.020(A) ESHA Development Criteria. The proposed single-family residence is cited to have the least possible impact to required ESHA buffers with consideration of the other setbacks and existing parcel constraints. The septic system has been designed to adhere to all applicable regulations. Project alternatives, mitigations and enhancement measures were developed in tandem with both CDFW and CCC to ensure most feasible compliance with ESHA encroachment and coastal regulations. If all avoidance, minimization and compensatory mitigation measures presented in the biological report are adhered to, the project should have a less than significant effect on all special status resources present. The residential foundation and appurtenant improvements would be located within the Pacific Reedgrass ESHA buffer, with a minimum ratio of 1:1 for replacement. As there is no feasible location on the property for residential development without impacting the required ESHA buffer, denial of the proposed development may cause a regulatory taking. Section 30010 of the California Coastal Act addresses regulatory takings and states the following:

> *"The Legislature hereby finds and declares that this division is not intended, and shall not be construed as authorizing the commission, port governing body, or local government acting pursuant to this division to exercise their power to grant or deny a permit in a manner which will take or damage private property for public use, without the payment of just compensation therefore. This section is not intended to increase or decrease the rights of any owner of property under the Constitution of the State of California or the United States."*

In this case, prohibiting development within the ESHA buffer would deprive the owner of all economic use of the property. Some factors courts examine to determine whether a regulatory taking has occurred involve the presence of reasonable investment-backed expectations, the degree to which a regulation may interfere with those reasonable investment-backed expectations, and whether or not a regulation deprives an owner of all economic use of the property. Staff believes there is a reasonable investment backed expectation, and that the scale of the proposed residence is consistent with similar properties in the vicinity. The General Plan classification identifies single-family residential land uses as principally permitted at this location. Homes are observed on the surrounding lots. A reasonable person would believe that this property could be improved with a single-family residence. As well, the project has been redesigned from the original submission to ensure the most feasible compliance possible with existing constraints, itself representing an investment-backed expectation.

The property was purchased on the open market in 2022 from Dorothy Martino for $290,000.00. Since that time, no zoning, General Plan or similar land use designation changes or other restrictive covenants, size or use or change of interest has

occurred. The applicant's agent provided a detailed comparative takings analysis for review and acceptance by the County which is kept on file with the Mendocino County Department of Planning & Building Services, however, a summary of information pertinent to the acceptance of development justification and demonstration of vested interest is represented in the table below. The table provides a comparative analysis identifying lots previously approved for residential development in the surrounding area (Table 2).

(TABLE 2. List of Parcels and Coastal Permits Issued)

PARCEL NUMBER	TOTAL DEVELOPMENT	PARCEL SIZE
123-340-15	3278 SF	1.2 acres
123-340-22	4859 SF	0.92 acres
123-340-11	4177 SF	1.2 acres
123-340-29	3404 SF	0.92 acres
123-340-10	3991 SF	1.1 acres
123-340-06	2930 SF	0.92 acres
123-340-16	3522 SF	2 acres
123-340-09	3252 SF	1.2 acres
123-340-07	2270 SF	0.92 acres
123-340-28	4019 SF	1.3 acres
123-340-19	1736 SF	1 acre
123-340-34	2663 SF	1 acre
123-340-26	2823 SF	1.1 acres
123-340-40	1308 SF	1 acre
123-340-24	2516 SF	1 acre
123-340-12	2210 SF	0.95 acres
123-340-39	2436 SF	1 acre
123-340-14	2032 SF	1.13 acres
123-340-21	1812 SF	1.2 acres
123-340-08	1914 SF	0.92 acres
123-340-20	3336 SF	1.132 acres
123-340-18	1669 SF	0.97 acres
Average	***2825 SF***	***1.1 acres***
Proposed/Existing	**3237 SF**	**1.3 acre**

ENVIRONMENTAL DETERMINATION: An Initial Study for the proposed project was completed by staff in accordance with the California Environmental Quality Act (CEQA). Based on this initial evaluation, it was found that the Project would not produce any significant environmental impacts with mitigation incorporated. As such, a Mitigated Negative Declaration was prepared. It is noted in the Initial Study that the proposed project could result in some environmental impacts, but these were considered less-than-significant with mitigation incorporated.

In accordance with Section 15064(f) of CEQA Guidelines and as Lead Agency, Mendocino County prepared an Initial Study (IS) and Mitigated Negative Declaration (MND) [SCH #] for the proposed project considering it will not have a significant effect on the environment. Based on the available project information and the environmental analysis presented in the IS/MND there is no substantial evidence that the proposed project would have a significant effect on the environment.

PROJECT FINDINGS & CONDITIONS OF APPROVAL

Pursuant to the provisions of Chapter 20.532 of the Mendocino County Coastal Zoning Code, the Coastal Permit Administrator approves CDP_2023-0029, adopts a Mitigated Negative Declaration, and adopts the following findings.

FINDINGS:

1. Pursuant to MCC Section 20.532.095(A)(1), the proposed project to the construction of a single-family residence with attached garage, decks, courtyards and concrete driveway is in conformity with the certified local coastal program.

   The construction of a Single-Family Dwelling and accessory structures and improvements comply with the certified Local Coastal Program. The proposed project allows for residential use of the site, which is consistent with the intent of the Rural Residential Classification; and

2. Pursuant to MCC Section 20.532.095(A)(2), the proposed development will be provided with adequate utilities, access roads, drainage, and other necessary facilities.

   The proposed project will be served by the Pacific Reefs Water District and an on-site sewage disposal system and connection to PG&E service. The proposed driveway, off Pacific Reefs Road (private), is adequate to serve the proposed development. Drainage and other necessary facilities have been considered in the project design; and

3. Pursuant to MCC Section 20.532.095(A)(3), the proposed development is consistent with the purpose and intent of the zoning district applicable to the property, as well as the provisions of this Division and preserve the integrity of the zoning district.

   The Rural Residential District is intended to encourage and preserve local small scale farming in the Coastal Zone on lands which are not well-suited for large scale commercial agriculture. Residential uses should be located as to create minimal impact on the agricultural viability. The addition of a residence on the otherwise vacant subject parcel is consistent with this goal; and

4. Pursuant to MCC Section 20.532.095(A)(4), the proposed development, if completed in compliance with the conditions of approval and all MND mitigation measures identified and incorporated therein, will not have any significant adverse impacts on the environment within the meaning of the California Environmental Quality Act.

   Based on the findings of the Initial Study prepared for this project, the project, as mitigated, will not have a significant impact on the environment under CEQA. The necessary mitigations have been incorporated into the Conditions of Approval for this permit; and

5. Pursuant to MCC Section 20.532.095(A)(5), the proposed development will not have any adverse impacts on any known archaeological or paleontological resource and should any archaeological sites or artifacts be discovered further protection measures may be imposed as per Condition 9.

   On June 6, 2024, Sherwood Valley Band of Pomo Indians provided comments on the proposal; requesting Tribal monitors be present during the trenching phase of construction. On June 12, 2024, the Archaeological Commission reviewed the Archaeological Survey prepared for the project by Jamie Frattarelli, dated May 6, 2021. The Commission moved to accept the survey and recommended the inclusion of a condition informing the property owners of the "Discovery Clause" of MCC § 22.12.090, which prescribes the procedures to be followed in the event of the discovery of any cultural resources during construction of the project (see recommended Condition 9). The Commission further accepted the request of Sherwood Valley Band of Pomo Indians requiring Tribal monitors be onsite during ground disturbing activities (Condition 10). As proposed, the project would be consistent with the archaeological resource policies of Coastal Element Chapter 3.5 and MCC Chapter 22.12.; and

6. Pursuant to MCC Section 20.532.095(A)(6), other public services, including but not limited to, solid waste and public roadway capacity have been considered and are adequate to serve the proposed development. Solid waste service is available either as curbside pick-up or at the South Coast Transfer Station (several miles away). While the project would contribute incrementally to traffic volumes on local and regional roadways, such incremental increases were considered when the LCP land use designations were assigned to the site; and

7. Pursuant with MCC Section 20.532.095(B), the proposed development would not diminish public access to Mendocino County coastal areas and conforms to the goals and policies of the Coastal Element of the General Plan. The project site is located between the first public road and the sea, within the private gated Pacific Reefs Subdivision; and is not designated as an existing or a potential public access point.

8. Pursuant to MCC Section 20.532.100(A)(1), no development shall be allowed in an ESHA unless the resource as identified will not be significantly degraded by the proposed development, there is no feasible less environmentally damaging alternative, and all feasible mitigation measures capable of reducing or eliminating project related impacts have been adopted. Alternatives to the proposed development were considered. Adjacent properties in the vicinity were reviewed to determine that the size and scale of development is in conformance with adjacent properties. Mitigation measures, Conditions 13 through 21, have been recommended to reduce any potential impacts from the proposed project. As conditioned, the proposed development will not significantly degrade the resources as identified.

CONDITIONS OF APPROVAL AND MITIGATION MEASURES (as indicated by ""):**

1. This action shall become final on the 11th day following the decision unless an appeal is filed pursuant to Section 20.544.015 of the Mendocino County Code. The permit shall become effective after the ten (10) working day appeal period to the Coastal Commission has expired and no appeal has been filed with the Coastal Commission. The permit shall expire and become null and void at the expiration of two years after the effective date except where construction and use of the property in reliance on such permit has been initiated prior to its expiration.

2. To remain valid, progress towards completion of the project must be continuous. The Applicants have sole responsibility for renewing this application before the expiration date. The County will not provide a notice prior to the expiration date.

3. The use and occupancy of the premises shall be established and maintained in conformance with the provisions of Division II of Title 20 of the Mendocino County Code (MCC).

4. The application, along with supplemental exhibits and related material, shall be considered elements of this permit, and that compliance therewith is mandatory, unless an amendment has been approved by the Coastal Permit Administrator.

5. This permit shall be subject to the securing of all necessary permits for the proposed development from County, State and Federal agencies having jurisdiction.

6. The Applicants shall secure all required building permits for the proposed development as required by the Building Inspection Division of the Department of Planning and Building Services, California Department of Transportation (Caltrans) and the Division of Environment Health.

7. This permit shall be subject to revocation or modification upon a finding of any one or more of the following:

   a. The permit was obtained or extended by fraud.

   b. One or more of the conditions upon which the permit was granted have been violated.

   c. The use for which the permit was granted is conducted so as to be detrimental to the public health, welfare or safety, or to be a nuisance.

   d. A final judgment of a court of competent jurisdiction has declared one or more conditions to be void or ineffective, or has enjoined or otherwise prohibited the enforcement or operation of one or more such conditions.

8. This permit is issued without a legal determination having been made upon the number, size or shape of parcels encompassed within the permit described boundaries. Should, at any time, a legal determination be made that the number, size or shape of parcels within the permit described boundaries are different than that which is legally required by this permit, this permit shall become null and void.

9. If any archaeological sites or artifacts are discovered during site excavation or construction activities, the property owner shall cease and desist from all further excavation and disturbances within 100 feet of the discovery, and make notification of the discovery to the Director of the Department of Planning and Building Services. The Director will coordinate further actions for the protection of the archaeological resources in accordance with Section 22.12.090 of the Mendocino County Code.

10. Per the request of Sherwood Valley Band of Pomo Indians, monitors shall be present for any ground disturbing activities. Applicant shall contact Sherwood Valley Band of Pomo prior to ground disturbance activities.

11. *Any Building Permit request* associated with this Coastal Development Permit *shall include all conditions of approval of this Coastal Development Permit. Conditions shall be printed on the* building plans and shall be a part of on-site construction drawings.

12. *Any Building Permit request* associated with this Coastal Development Permit *shall include* exterior lighting details consistent with Mendocino County Coastal Element Policies 3.5 and Mendocino County Code of Ordinances Section 20.504.035 on the building plans and shall be a part of on-site construction drawings.

13. *Any Building Permit request* associated with this Coastal Development Permit *shall include* exterior finish schedules on the building plans consistent with Mendocino County Coastal Element Policies 3.5 and Mendocino County Code of Ordinances Section 20.504.015(C) and shall be a part of on-site construction drawings.

14. **Mitigation Measure BIO-1: The proposed Pacific Reedgrass mitigation area shall be, at a minimum, equal to amount of Pacific reed grass impacted by the Project, as reflected in the submitted site plan and EHSA enhancement map. Final submitted site and building permit plans must clearly indicate this included area.

15. **Mitigation Measure BIO-2: After five years, the Pacific reed grass mitigation area shall have a minimum of 70% cover of Pacific reed grass. The success criteria/performance metric of 70% or greater after 5 years would be determined using the Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (2018) by doing a revele or rapid assessment of the enhancement area. This report must be submitted to the County and to CDFW for review and acceptance.

16. **Mitigation Measure BIO-3: Invasive plant species will be targeted and removed on the parcel (not only within the Pacific reed grass enhancement area), to the extent feasible.

17. **Mitigation Measure BIO-4: No further development in ESHA and geologic setback areas shall be allowed, including further encroachment into to the 10-foot ESHA buffer area, so that it can function as effectively as possible to protect the resources of the ESHA.

18. **Mitigation Measure BIO-5: During construction the project is required to adhere to all avoidance and minimizations measures that will protect ESHA and ESHA buffers (e.g., during construction, orange construction fencing can be used to separate construction areas from protected areas, and appropriate BMPs can be applied to minimize the potential for polluted runoff, sedimentation, and erosion impacts during construction). Onsite inspections by County building staff during construction should include verification that appropriate measures and BMPs are in place.

19. **Mitigation Measure BIO-6: Part of the building permit submittal should include the installation of permanent symbolic fencing (e.g., low wooden split-rail fencing) between ESHA and the residential development area to provide an ongoing visual barrier and reminder to residents of the presence of sensitive areas on the site where future development is prohibited to protect the resources of those areas. The fencing should be installed on the outer (inland) edge of the ESHA buffer area if possible.

20. **Mitigation Measure BIO-7: Restricted Activities in ESHAs. No unpermitted activities should be allowed that would disturb vegetation, topography, or hydrology in the ESHAs or required 50-foot buffers both during and following construction. Some examples of these activities are vehicle parking or storage of other heavy materials, regular foot traffic, and clearing of vegetation. However, certain vegetation removal activities may be permitted, including native plant restoration activities and pruning or removal of hazardous or diseased trees or thinning of trees if deemed beneficial to the ESHA by a certified arborist or qualified biologist. Solid materials, including wood, masonry/rock, glass, paper, or other materials should not be stored in the ESHAs, or the 50-foot buffers. Solid waste materials should be properly disposed of offsite. Fluid materials, including concrete, wash water, fuels, lubricants, or other fluid materials used during construction should not be disposed of onsite and should be stored or confined as necessary to prevent spillage into natural habitats including the onsite ESHAs. If a spill of such materials occurs, the area should be cleaned immediately, and contaminated materials disposed of properly. The affected area should be restored to its natural condition.

21. **Mitigation Measure BIO-8: Work Windows. All activities that require substantial ground disturbance should take place only during the summer months (generally April 15 through October 31) to minimize potential erosion and sedimentation. Activities that do not require construction vehicles to access the site or ground disturbance other than planting may take place outside of this window as long as Mitigation Measure BIO-10 is implemented prior to construction.

22. **Mitigation Measure BIO-9: Limit of construction impacts. Prior to any ground disturbance and vegetation clearing, combination silt fence and construction fence should be installed around the limit of construction impacts. Fencing should be placed outside of all 50-foot ESHA buffers. Fence locations and any ESHA/ Pacific reedgrass boundaries in the vicinity of construction should be determined and flagged by a qualified biologist. The fencing (and therefore the construction impact limit) should be placed more 100 feet from ESHAs whenever feasible and should be placed to minimize construction impacts on slopes leading to wetlands or other ESHAs. No grading, placement of fill material, or other ground disturbance should occur beyond the construction fencing. This fencing should only be removed once all construction activities are completed. Additionally, staging of all building materials and construction vehicles in upland areas outside of all presumed ESHAs is required.

23. **Mitigation Measure BIO-10: Staff Education. Prior to construction, the project contractors should be informed of the sensitive resources within the Study Area. Furthermore, the significance of the limits of construction impacts and fencing should be clearly explained to all parties working within the Study Area both during and following construction.

24. **Mitigation Measure BIO-11: Vegetation Removal. Damage or removal of vegetation shall not be allowed in ESHAs or established buffer areas with the exception of invasive species removal, native plant restoration, and pruning or removal of hazardous or diseased trees when deemed necessary or beneficial by a certified arborist or qualified biologist.

25. **Mitigation Measure BIO-12: Landscaping Restrictions. No landscaping or irrigation may be installed within the ESHAs or 50-foot buffers, unless related to native habitat restoration activities. Irrigation near the ESHA buffers and bluff slopes should be monitored to ensure that there are no additional inputs of water to the ESHAs that could cause erosion or changes in hydrology. No non-native plants should be planted on the property, with the exception of gardens used for food production. Plant species listed as invasive (“High”, “Moderate”, and “Limited” impacts) on the California Invasive Plant Council’s California Invasive Plant Inventory (Cal-IPC 2006) shall not be installed anywhere in the Study Area as it would pose a risk to onsite ESHAs and buffers. Any new or existing occurrences of invasive species that threaten the preservation of the native plant community in the mitigation area (generally those species listed as “High” or “Moderate”) should be a target for removal in perpetuity, when feasible. Landscaping and revegetation both during and following construction will ideally include species native to CTP, NCBS, or wetland communities similar to the ESHAs already present in the Study Area. Otherwise, they should be native coastal species typical of the native communities already present in the Study Area (Appendix C). When possible, planting should be of local stock to preserve local genetic diversity. The local CNPS chapter, a qualified biologist, or a landscaper with knowledge of native plant communities should be consulted to identify appropriate species for planting.

26. **Mitigation Measure BIO-13: Site grading for construction should be restricted between approximately May 1 and September 30. Site grading during these drier months will reduce the possibility of soil erosion and sediments flowing into natural habitats. Other construction, such as the erection of structures or minor landscaping, is not restricted to this time period.

27. **Mitigation Measure GEO-1: A perimeter drain shall be constructed as shown on Plate 12 (Brunsing Associates, Inc. Geotechnical Investigation – Attachment # W). Concrete interior slabs shall be provided with underslab drainage as shown on Plate 12 (Brunsing Associates, Inc. Geotechnical Investigation – Attachment # W).

28. **Mitigation Measure GEO-2. All exposed soil shall be mulched with straw or wood chips to minimize soil erosion. No soil shall be left in an exposed condition. The contractor must maintain a stockpile of this material on site for quick application.

29. Construction and earthwork shall be supervised and certified by a licensed engineering geologist or a registered, civil engineer with soil analysis expertise who shall certify that the Brunsing Associates, Inc. Geotechnical Investigation dated September 28, 2022, recommendations are incorporated into the development.

30. Removal of any plants at the top of the bluff is prohibited unless a qualified geologist determines the removal of such plants would not increase erosion.

31. Standard Best Management Practices (BMPs) shall be employed to assure minimization of erosion resulting from

construction. Ground disturbance shall be limited to the minimum necessary and disturbed soil areas shall be stabilized as soon as feasible.

32. The proposed Pacific Reedgrass enhancement activities shall be, at a minimum, equal to amount of Pacific reed grass impacted by the Project, as reflected in the submitted site plan and EHSA enhancement map. The applicant shall dedicate the area directly east of the Pacific reed grass meadow and west of the eastern boundary line, as reflected in the submitted site plan (Attachment G), for natural expansion of the Pacific reed grass. Final submitted site and building permit plans must clearly indicate this included area.

33. Given the blufftop nature of the lot and its inherent and ongoing geologic hazard risks: (a) future construction of any cliff armoring device to curtail natural erosion processes should the bluff erode to the point that the stability of the authorized development becomes threatened is prohibited; (b) complete removal of all authorized development and restoration of the site if/when needed (when no longer safe for habitation) is required; and (c) cleanup of any debris that inadvertently falls to the beach/public trust lands as a result of erosion or similar geologic hazards in the future is required to be completed by the property owner at their own cost and effort.

34. **Mitigation Measure Hydro - 1: Areas to be graded should be cleared of existing vegetation, rubbish, existing structures, and debris. After clearing, surface soils that contain organic matter should be stripped. In general, the depth of required stripping will be about 2 to 4 inches; deeper stripping and grabbing may be required to remove isolated concentrations of organic matter or roots. The cleared materials should be removed from the site or stockpiled for later use in landscape areas, as appropriate.

35. **Mitigation Measure Hydro - 2: Within building areas, existing weak soils should be removed to a depth of at least two feet below existing grades and at least two feet below bottom of planned foundations. Deeper excavating may be necessary to remove isolated very weak soils. Prior to fill placement, a geotextile stabilization fabric, such as Mirafi HP Series, or equal, should be placed over the excavation bottom in accordance with the manufacturer's specifications. Within pavement areas and exterior concrete, existing weak soils, the upper 18 inches of soil from existing grade, should be removed. Deeper excavations may be necessary to remove isolated, very weak soils, if encountered.

36. **Mitigation Measure Hydro - 3: Finished surfaces should be graded to drain away from structures and foundations. A minimum surface drainage gradient of five percent is recommended. Subgrade soil should be finished true to line and grade to present a smooth, fim1, and unyielding surface. Finished surfaces should be maintained moist and free of shrinkage cracks until covered by permanent construction. Fill surfaces allowed to dry out and crack should be re-moisture conditioned to at least optimum moisture content and re-compacted prior to pavement installation.

37. **Mitigation Measure Hydro - 4: If groundwater is encountered during construction, the pier holes should be dewatered prior to placement of reinforcing steel and concrete. Alternatively, if more than six inches of groundwater has entered the pier hole, concrete can be tremied into place with an adequate head to displace water or slurry. Concrete should not be placed by freefall in such a manner as to hit the sidewalls of the excavation.

38. **Mitigation Measure Hydro - 5: Because surface and/or subsurface water is often the cause of foundation or slope stability problems, care should be taken to intercept and dive1t concentrated surface flows and subsurface seepage away from the building foundations. Drainage across the lot should be by sheet-flow. Surface grades should maintain a recommended five percent gradient away from building foundations. A perimeter drain should be constructed as shown on Plate 12. Concrete interior slabs should be provided with underslab drainage as shown on Plate 12.

39. Within one year of the effective date associated with CDP_2023-0029, the property owner shall execute and record a deed restriction, or amend existing deed, in a form and content acceptable to the Coastal Permit Administrator and County Counsel. The deed restriction, or amendment, will include the following statements and, or exhibits:

    a. The landowner understands that the site may be subject to extraordinary geologic and erosion hazards and the landowner assumes the risk from such hazards; and
    b. The landowner agrees to indemnify and hold harmless the County of Mendocino, its successors in interest, advisors, officers, agents and employees against any and all claims, demands, damages, costs, and expenses of liability (including without limitation attorneys' fees and costs of the suit) arising out of the design, construction, operation, maintenance, existence or failure of the permitted project. The permitted project is inclusive of the following permits: CDP_2023-0029. Including, without limitation, all claims made by any individual or entity or arising out of any work performed in connection with the permitted project; and
    c. The landowner agrees that any adverse impacts to the property caused by the permitted projects shall be

fully the responsibility of the property owner; and

d. The landowner shall not construct any bluff or shoreline protective devices to protect the subject structures or other improvements in the event that these structures are subject to damage, or other erosional hazards in the future; and
e. The shall remove the subject structures when bluff retreat reaches the point where the structures are threatened. In the event that portions of the subject structures, or other improvements associated with the subject structures, fall to the beach or bay before they can be removed from the blufftop, the landowner shall remove all recoverable debris associated with these structures from the beach and bay and lawfully dispose of the material in an approved disposal site. The landowners shall bear all costs associated with such removal; and
f. The document shall run with the land, bind all successors and assigns, and shall be recorded free of all prior liens and encumbrances, except for tax liens.
g. The adopted findings and conditions approving CDP_2023-0029 shall be attached as exhibits to the Deed Restriction and the conditions of Permit CDP_2023-0029 are imposed as covenants, conditions and restrictions on the use and enjoyment of the property.

40. This entitlement does not become effective or operative and no work shall be commenced under this entitlement until the California Department of Fish and Wildlife filing fees required or authorized by Section 711.4 of the Fish and Game Code are submitted to the Mendocino County Department of Planning and Building Services. Said fee of $3018.75 or current fee shall be made payable to the Mendocino County Clerk and submitted to the Department of Planning and Building Services within 5 days of the end of any public hearing action. Any waiver of the fee shall be on a form issued by the California Department of Fish and Wildlife upon their finding that the project has "no effect" on the environment. If the project is appealed, the payment will be held by the Department of Planning and Building Services until the appeal is decided. Depending on the outcome of the appeal, the payment will either be filed with the County Clerk (if the project is approved) or returned to the payer (if the project is denied). Failure to pay this fee by the specified deadline shall result in the entitlement becoming null and void. The property owner has the sole responsibility to ensure timely compliance with this condition.

1/17/2025
DATE

MARK CLISER
SENIOR PLANNER

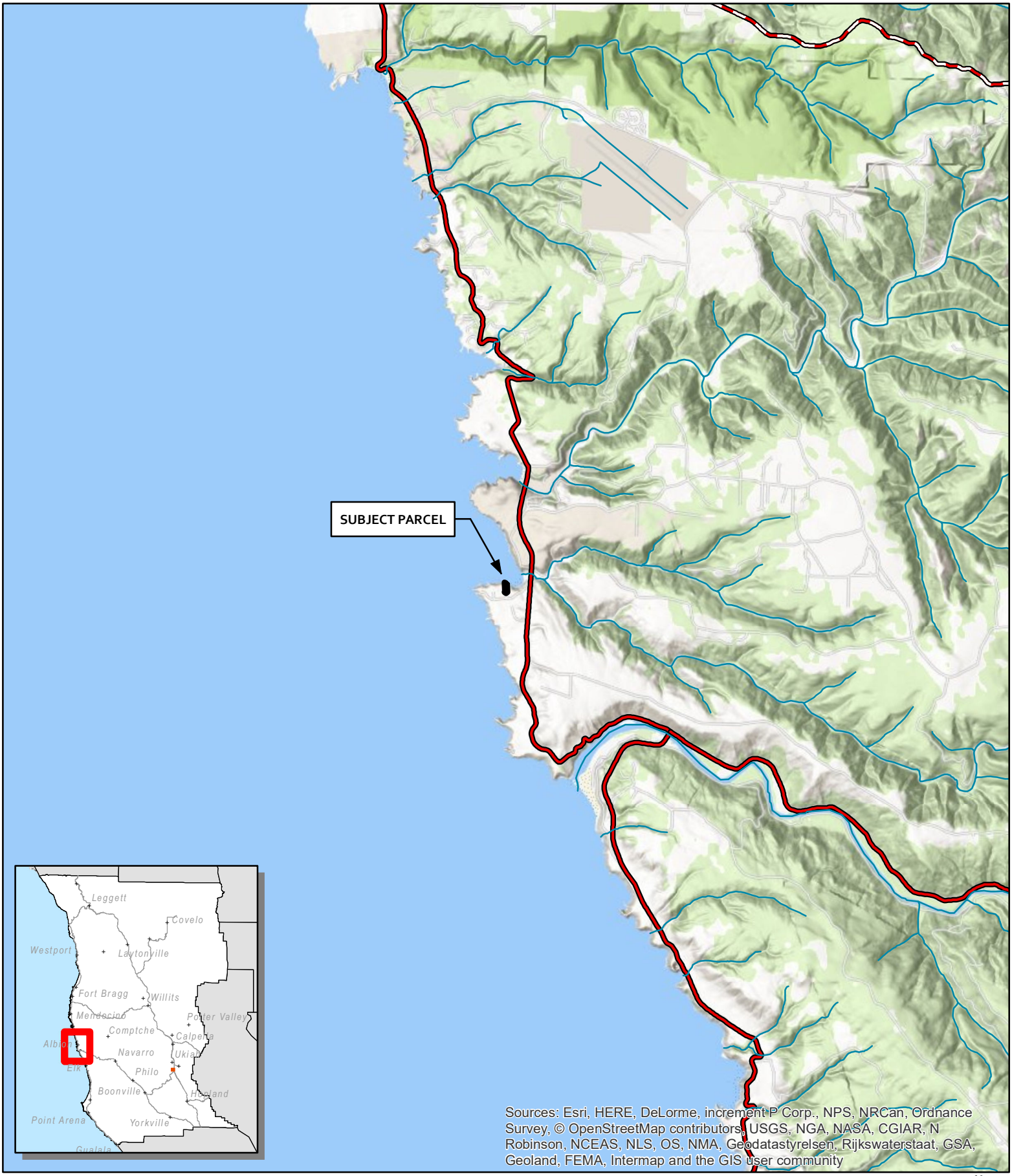
Appeal Period: 10 Days
Appeal Fee: $2,674.00

ATTACHMENTS:

A. Location Map
B. Aerial Map (Vicinity)
C. Aerial Imagery
D. Topographical Map
E. Floor Plan And Elevations
F. Engineering Plan
G. Site Plan
H. General Plan Map
I. Zoning Map
J. LCP Maps
K. Adjacent Owner Map
L. Fire Hazards Map
M. Flood Zone
N. Water District Map
O. Slope Map
P. Soils Map
Q. Ground Water Resource Area
R. Highly Scenic/Tree Removal
S. Williamson Act Map
T. Wetlands
U. Pacific Reefs Water District Will Serve Letter
V. Biological Report (ON LINE ONLY)
W. Geotechnical Investigation (ON LINE ONLY)
X. Kings Taking Report/Wynn Coastal Planning
Y. Kings Taking Excel Data
Z. Pacific Reedgrass Enhancement Map

RESOLUTION AND CONDITIONS OF APPROVAL (EXHIBIT A):

MITIGATED NEGATIVE DECLARATION AND INITIAL STUDY AVAILABLE ONLINE AT:
https://www.mendocinocounty.gov/government/planning-building-services/meeting-agendas



Sources: Esri, HERE, DeLorme, increment P Corp., NPS, NRCan, Ordnance Survey, © OpenStreetMap contributors, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

Hydrology
Highways
Major Roads

0 2,800 5,600 Feet
0 0.5 1 Miles

N
W E
S

1:63,360

ESTIMATED SLOPE

CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

Hydrology

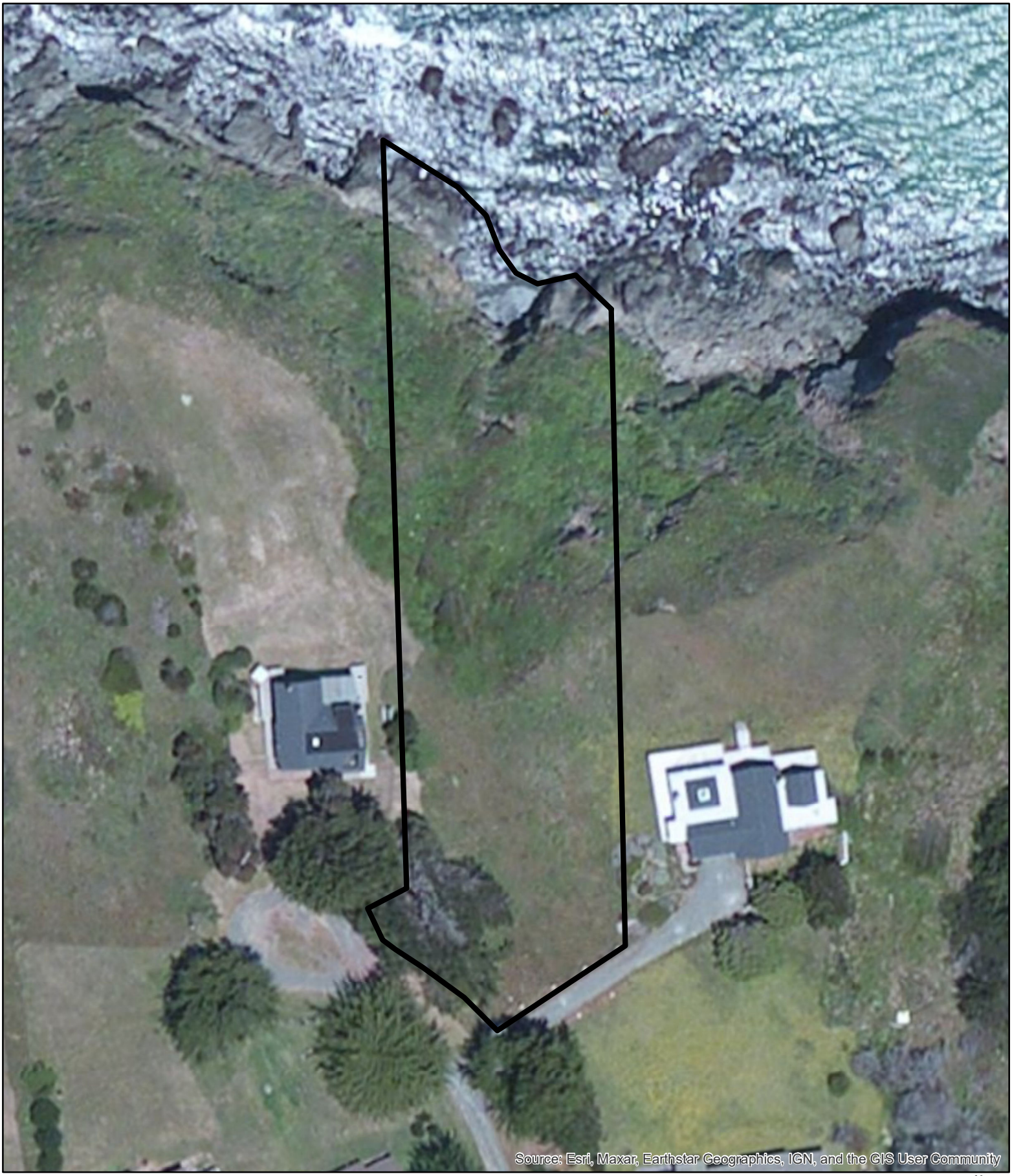
Public Roads

0 112.5 225 Feet
0 0.02 0.04 Miles

N W E S

1:2,500

AERIAL IMAGERY



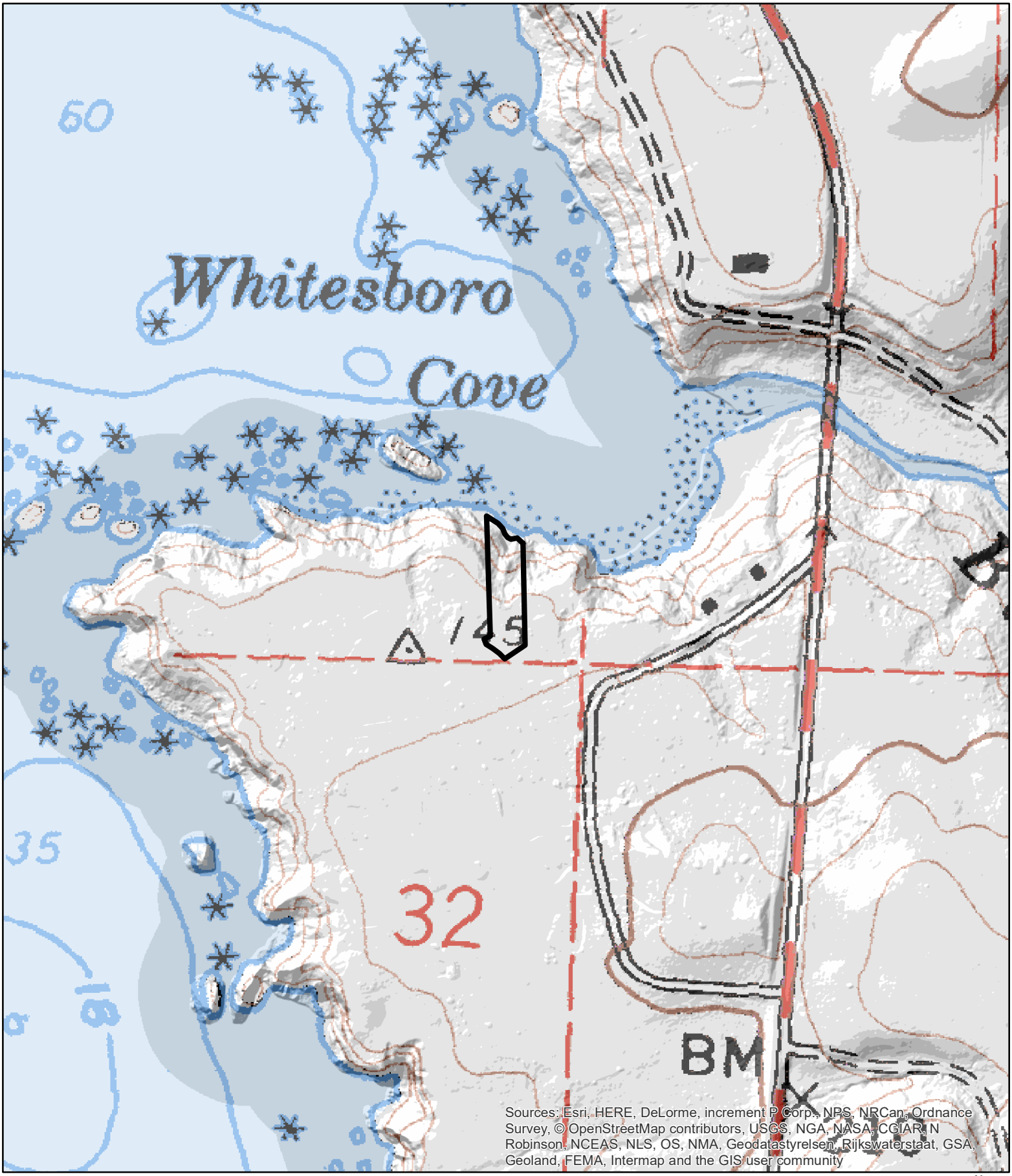
CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

0 35 70 Feet
0 0.005 0.01 Miles

N
W E
S

1:800

AERIAL IMAGERY



Sources: Esri, HERE, DeLorme, increment P Corp., NPS, NRCan, Ordnance Survey, © OpenStreetMap contributors, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

0 225 450 Feet
0 0.04 0.08 Miles

N
W E
S

1:5,000

TOPOGRAPHIC MAP
CONTOUR INTERVAL IS 40 FEET

GENERAL NOTES

REGULATORY AGENCIES

1. ALL WORK SHALL CONFORM TO THE 2022 CALIFORNIA BUILDING CODE, 2022 CALIFORNIA RESIDENTIAL CODE (WHERE APPLICABLE), 2022 CALIFORNIA MECHANICAL CODE, 2022 CALIFORNIA ELECTRICAL CODE, 2022 CALIFORNIA PLUMBING CODE, INCLUDING ALL AMENDMENTS AS ADOPTED IN ORDINANCE 1889 AND 2022 CALIFORNIA ENERGY EFFICIENCY STANDARDS AND 2022 CA GREEN BUILDING STANDARD CODE .
2. SEPARATE DRAWINGS, CALCULATIONS AND SUBMITTAL MATERIALS SHALL BE PROVIDED FOR REVIEW AND APPROVAL OF SIGNAGE.
3. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AS HOLDER OF PERMITS TO NOTIFY THE BUILDING OFFICIAL WHEN WORK IS READY FOR INSPECTION. INSPECTION REQUESTS SHALL BE IN ACCORDANCE WITH REGULATORY AGENCIES' REQUIREMENTS. INSPECTORS SHALL HAVE COMPLETE ACCESS TO ALL WORK.
4. A RECORD OF INSPECTIONS SHALL BE MAINTAINED ON THE JOB SITE IN ACCORDANCE WITH REGULATORY AGENCY REQUIREMENTS.
5. APPROVED PLANS SHALL BE KEPT IN A PLAN BOX AND SHALL NOT BE USED BY ANY WORKMEN. ALL CONSTRUCTION SETS SHALL REFLECT THE SAME INFORMATION. THE CONTRACTOR SHALL ALSO MAINTAIN IN GOOD CONDITION, ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS, ON THE PREMISES AT ALL TIMES WHICH ARE TO BE UNDER THE CARE OF THE JOB SUPERINTENDENT. A REPRODUCIBLE AS-BUILT SET SHALL BE PROVIDED TO THE OWNER WHEN COMPLETE.

PREPARATION FOR CONSTRUCTION

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COMPLETELY FAMILIARIZE HIMSELF/HERSELF WITH THESE DRAWINGS AND THE SITE CONDITIONS, AND TO VERIFY ALL DETAILS WITH THE OWNER PRIOR TO THE START OF CONSTRUCTION.
2. DO NOT SCALE DRAWINGS.
3. DIMENSIONS ARE TO FACE LINE OF STUD (F.O.S.) UNLESS OTHERWISE NOTED. WHERE REQUIRED, MINIMUM CLEAR DIMENSIONS HAVE BEEN NOTED. SEE COVER SHEET FOR GRAPHIC EXPLANATION. FIELD VARIFY ALL DIMENSIONS.
4. ANY DISCREPANCY OR ERROR IN DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND OWNER PRIOR TO THE COMMENCEMENT OF WORK.
5. THE DRAWINGS DO NOT ILLUSTRATE EVERY CONDITION. THE DRAWINGS INDICATE LOCATIONS, DIMENSIONS, AND TYPICAL DETAILS OF CONSTRUCTION. WORK NOT EXPRESSLY DETAILED SHALL BE OF CONSTRUCTION SIMILAR TO PARTS THAT ARE DETAILED.
6. THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS OTHERWISE SHOWN, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE GENERAL CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND HE/SHE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY FIELD REPRESENTATIVES OF THE ARCHITECT AND HIS CONSULTANTS DO NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE PROCEDURES FOR SUCH METHODS OF CONSTRUCTION. ANY SUPPORT SERVICES PROVIDED BY THE ARCHITECT AND HIS CONSULTANTS DURING CONSTRUCTION SHALL BE DISTINGUISHED FROM CONTINUOUS AND DETAILED INSPECTION SERVICES WHICH ARE FURNISHED BY OTHERS. THESE SUPPORT SERVICES, WHICH ARE FURNISHED BY THE ARCHITECT AND HIS CONSULTANTS, WHETHER OF MATERIAL OR WORK AND WHETHER PERFORMED PRIOR TO, DURING, OR AFTER COMPLETION OF CONSTRUCTION, ARE PERFORMED SOLELY FOR THE PURPOSE OF ASSISTING IN QUALITY CONTROL AND IN ACHIEVING CONFORMANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS, BUT THEY DO NOT GUARANTEE CONTRACTOR'S PERFORMANCE AND SHALL NOT BE CONSTRUED AS SUPERVISION OF CONSTRUCTION.
7. THE ARCHITECT AND OWNER WILL NOT BE RESPONSIBLE FOR AMBIGUITIES AND OMISSIONS NOT BROUGHT TO THEIR ATTENTION.
8. BY SUBMITTING A BID, THE BIDDER AGREES AND WARRANTS THAT HE/SHE HAS EXAMINED THE DRAWINGS AND FOUND THAT THEY ARE ADEQUATE FOR COMPLETION OF THE PROJECT.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING FIELD MEASUREMENTS BEFORE ORDERING MATERIALS AND PREFABRICATED ITEMS. ANY NECESSARY ADJUSTMENTS BETWEEN FIELD MEASUREMENTS AND DRAWINGS SHALL BE MADE IN ACCORDANCE WITH THE DECISION OF THE ARCHITECT AND/OR OWNER.
10. CONTRACTOR'S SCOPE OF WORK: ALL LABOR, MATERIALS, FABRICATION, EQUIPMENT, APPLIANCES, APPURTENANCES, TRANSPORTATION AND SERVICES REQUIRED FOR CONSTRUCTION, ERECTION, AND INSTALLATION OF ALL OF THE VARIOUS WORK INDICATED ON THE DRAWINGS AND/OR SPECIFIED UNDER EACH OF THE SPECIFICATION SECTIONS; ANY SITE DEMOLITION AND REMOVAL OF ANY MATERIAL, RUBBISH, OR DEBRIS ABOVE OR BELOW GRADE; ALL EARTHWORK AND FOUNDATION WORK.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING THE WORK IN ACCORDANCE WITH THE PROPERTY LINES AND ELEVATIONS PER THE SURVEY DRAWING AND GRADING/DRAINAGE PLAN.
12. CONTRACTOR TO COORDINATE ALL PLUMBING, GAS, ELECTRICAL, SPRINKLER, AND HVAC SYSTEMS FOR COMPATIBILITY WITH THE PROPOSED DESIGN PRIOR TO COMMENCEMENT OF CONSTRUCTION.
13. CONTRACTOR TO VERIFY ALL ELECTRICAL, PLUMBING, AND HVAC REQUIREMENTS FOR EXISTING OR SPECIFIED EQUIPMENT PRIOR TO CONSTRUCTION. ADDITIONALLY, CONTRACTOR SHALL CONFIRM EQUIPMENT LIST WITH THE ARCHITECT BEFORE COMMENCEMENT OF WORK.
14. RUFF + ASSOCIATES, INC. SHALL HAVE NO RESPONSIBILITY FOR THE DISCOVERY, HANDLING, PRESENCE, DISPOSAL, REMOVAL OF, OR EXPOSURE OF PERSONS TO HAZARDOUS MATERIALS IN ANY FORM AT THE PROJECT SITE, INCLUDING BUT NOT LIMITED TO ASBESTOS, ASBESTOS PRODUCTS, POLYCHLORINATED BIPHENYL (PCB), OR OTHER TOXIC SUBSTANCES. SUCH WORK, IF REQUIRED, SHALL BE COMPLETED UNDER SEPARATE CONTRACT.

WUI

THE PROJECT IS IN WILDLAND URBAN INTERFACE

- EXTERIOR WINDOWS/DOORS; EXTERIOR GLAZING TO BE CONSTRUCTED OF MULTIPANE GLAZING WITH A MINIMUM OF ONE TEMPERED PANE MEETING THE REQUIREMENTS OF SECTION 2406 SAFETY GLAZING

- ROOFING/ GENERAL: PER CBC 705A.1 ROOFS SHALL COMPLY WITH THE REQUIREMENTS OF CHAPTER 7A AND CHAPTER 15 CBC. ROOFS SHALL HAVE A ROOFING ASSEMBLY INSTALLED IN ACCORDANCE WITH ITS LISTING AND THE MANUFACTURER'S INSTRUCTION.

- ENCLOSED ROOF EAVES AND SOFFITS: EXPOSED UNDERSIDE TO BE NONCOMBUSTIBLE MATERIAL (E.G. JAMES HARDIE SOFFIT BOARD / FIBRE CEMENT / COMPLIES WITH ASTM-E84 & ASTM-C1186)

- EXTERIOR PORCH CEILINGS: EXPOSED UNDERSIDE TO BE NONCOMBUSTIBLE MATERIAL (E.G. JAMES HARDIE SOFFIT BOARD / FIBRE CEMENT / COMPLIES WITH ASTM-E84 & ASTM-C1186)

- EXTERIOR WALL COVERING : TO BE NONCOMBUSTIBLE MATERIAL (E.G.CEMENT BOARD JAMES HARDIE LAP SIDING COLONIAL SMOOTH AND NICHIHA VINTAGE WOOD BOTH COMPLY WITH ASTM-E84 & ASTM-C1186)

- DECK: DECKING SURFACE TO BE IGNITION-RESISTANT MATERIAL THAT COMPLIES WITH THE PERFORMANCE REQUIREMENTS OF BOTH SFM STANDARD 12-7A-4A AND SFM STANDARD 12-7A-5 (E.G. FIBERON PARAMOUNT OR ALUMINUM DECKING) / DECK JOISTS TO BE EXTERIOR FIRE RETARDENT TREATED WOOD

- VENTS: VENTILATION OPENINGS FOR ENCLOSED ATTICS, ENCLOSED EAVE SOOFIT SPACES, ENCLOSED RAFTER SPACES FORMED WHERE CEILINGS ARE APPLIED DIRECTLY TO THE UNDERSIDE OF ROOF RAFTERS, AND UNDERFLOOR VENTILATION OPENINGS SHALL BE FULLY COVERED WITH METAL MESH, VENTS, OR OTHER DEVICES THAT MEET THE FOLLOWING REQUIREMENTS:
  - THE DIMENSIONS OF THE THE OPENINGS THEREIN SHALL BE A MINIMUM OF 1/16 INCH AND SHALL NOT EXCEED 1/8 INCH.
  - THE MATERIALS SHALL BE NONCOMBUSTIBLE.
  - THE MATERIALS SHALL BE CORROSION RESISTANT.

VICINITY MAP

2731 SEASIDE COURT ALBION CA 95410

GENERAL NOTES

QUALITY AND JOB MANAGEMENT

1. THE CONTRACTOR SHALL CONSULT THE INTERIOR FINISH SCHEDULE FOR ALL INTERIOR MATERIALS COORDINATION, CABINETS, ETC.
2. ALL ITEMS OF MILLWORK SHALL BE CAREFULLY ERECTED WITH TIGHT-FITTING JOINTS, CAREFULLY CUT AND SECURED. EXPOSED NAILS OR SCREWS SHALL BE SET IN PUTTY. BACK PRIME ALL MILLWORK BEFORE INSTALLATION AND PROTECT AGAINST DAMPNESS. MOLDS AND FACES SHALL BE CLEAN CUT AND TRUE PATTERN. ALL WORK SHALL BE THOROUGHLY CLEANED AND SANDED TO RECEIVE THE FINISH. SHARP CORNERS OF SMALL MEMBERS OF FINISH WOODWORK SHALL BE SLIGHTLY ROUNDED.
3. ALL FRAMING SHALL BE INSTALLED CLOSELY FITTED, ACCURATELY SET IN PLACE TO THE REQUIRED LINES AND LEVELS, AND SHALL BE OF THE DIMENSIONS SHOWN ON DRAWINGS. DO NOT IMPAIR STRUCTURAL MEMBERS BY CUTTING OR DRILLING - CONSULT ARCHITECT.
4. ALL PROPRIETARY PRODUCTS NOTED ON THE DRAWINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND HAVE PRIOR APPROVAL FROM THE LOCAL GOVERNING AGENCIES.
5. THE ARCHITECT AND THE ENGINEER WILL MAKE PERIODIC VISITS TO THE JOB SITE TO OBSERVE THE PROGRESS OF THE WORK. THE ARCHITECT AND ENGINEER SHALL NOT HAVE CONTROL OR CHARGE OF, AND SHALL NOT BE RESPONSIBLE FOR, CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES, FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, FOR ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS OR ANY PERSONS PERFORMING ANY OF THE WORK OR FOR FAILURE OF ANY OF THOSE PARTIES TO CARRY OUT THE WORK IN CONFORMANCE WITH CONTRACT DOCUMENTS.
6. CUTTING & PATCHING: AVOID DAMAGING ADJACENT EXISTING WORK. REPAIR OR REPLACE AT NO COST TO OWNER ANY DAMAGE CAUSED BY CONSTRUCTION.
7. TEMPORARY SHORING: STRUCTURALLY BRACE AND SUPPORT ALL MATERIALS REQUIRING THE SAME FOR THE WORK TO OCCUR SAFELY AND IN COMPLIANCE WITH JURISDICTIONAL REGULATIONS.

CHANGES TO WORK & SUBMITTALS

1. CHANGES OR MODIFICATIONS TO THE WORK DURING CONSTRUCTION SHALL BE RECORDED WITH THE APPROPRIATE REGULATORY AGENCIES, AND APPROVALS FROM SUCH AGENCIES SHALL BE OBTAINED PRIOR TO MAKING SUCH CHANGES. REGULATORY AGENCIES SHALL BE NOTIFIED BY THE CONTRACTOR OF ALL SUCH CONSTRUCTION CONTRACT CHANGES AFTER PERMITS ARE ISSUED.
2. THE ARCHITECT SHALL BE INFORMED, IN WRITING, OF ALL CHANGES OR SUBSTITUTIONS MADE TO THESE PLANS AND SPECIFICATIONS. THE ARCHITECT SHALL HAVE NO IMPLIED OR ASSUMED RESPONSIBILITY FOR CHANGES IMPLEMENTED WITHOUT THE ARCHITECT'S PRIOR APPROVAL.
3. SHOP DRAWINGS: SHOP DRAWINGS ARE AN AID FOR FIELD PLACEMENT AND ARE SUPERSEDED BY THE ARCHITECTURAL DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO MAKE CERTAIN THAT ALL CONSTRUCTION IS IN FULL AGREEMENT WITH THE LATEST ARCHITECTURAL DRAWINGS. THE CONTRACTOR SHALL SUPPLY THE ARCHITECT/ENGINEER WITH A MINIMUM OF TWO (2) COPIES OF CHECKED SHOP DRAWINGS BEARING THE CONTRACTOR'S STAMP OF APPROVAL AND SIGNATURE, A MINIMUM OF THREE (3) WEEKS PRIOR TO FABRICATION. THE REVIEW OF SHOP DRAWINGS AND SPECIFICATIONS BY THE ARCHITECT/ENGINEER IS ONLY FOR GENERAL COMPLIANCE WITH THE ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS AND SPECIFICATIONS. THIS REVIEW DOES NOT GUARANTEE IN ANY WAY THAT THE SHOP DRAWINGS ARE CORRECT, COMPLETE, NOR DOES IT INFER THAT THEY SUPERSEDE THE ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS.
4. SUBSTITUTIONS: PROPRIETARY ARTICLES MAY BE SUBSTITUTED IF, IN THE OPINION OF THE ARCHITECT AND OWNER, THE MATERIAL OR ARTICLE IS EQUAL TO THAT SPECIFIED. REQUEST FOR SUBSTITUTIONS SHALL NOT DELAY WORK.CONTRACTOR SHALL COORDINATE ACCEPTED SUBSTITUTIONS WITHOUT ADDITIONAL COST TO OWNER. ALL SUBSTITUTIONS MUST HAVE WRITTEN PERMISSION. COLOR SAMPLES OF ALL MATERIALS THAT AFFECT THE AESTHETICS OF THE DESIGN MUST BE SUBMITTED. WHEN A MANUFACTURED PRODUCT IS NOT SPECIFIED, CONTRACTOR WILL UTILIZE THE HIGHEST QUALITY PRODUCT AVAILABLE ON THE MARKET IN THE MIDDLE PRICE RANGE. CONTRACTOR SHALL ON NO ACCOUNT USE LOWER-END PRODUCTS AT THE BOTTOM PRICE RANGE WHEN BETTER QUALITY PRODUCT IN THE MIDDLE PRICE RANGE EXISTS.
5. ONLY DRAWINGS, SPECIFICATIONS, ADDENDA AND CHANGE ORDERS BEARING APPROVAL OF OWNER SHALL BE USED IN THE EXECUTION OF WORK PERMITTED ON JOB SITE.
6. ADDENDA WILL BE ISSUED DURING BIDDING TO CLARIFY DRAWINGS (AND SPECIFICATIONS) AS REQUIRED. THESE WILL BECOME A PART OF THE CONTRACT - CONSULT ARCHITECT.
7. THERE SHALL BE NO DEVIATIONS WHATSOEVER FROM THE CONTRACT DOCUMENTS WITHOUT THE ARCHITECT'S WRITTEN APPROVAL THEREOF. THE CONTRACTOR AGREES TO DEFEND, INDEMNIFY AND HOLD THE ARCHITECT HARMLESS FROM ANY CLAIMS ARISING AS A RESULT OF UNAPPROVED CHANGES.

COMPLETION

1. ALL WORK SHALL BE CLEAN AND READY FOR USE UPON COMPLETION. EXPOSED AND SEMI-EXPOSED SURFACES BE DUSTED, MOPPED, WASHED, WIPED AND BUFFED AS NECESSARY TO LEAVE WORK IN A NEW, CLEAN, IMMACULATE CONDITION.
2. CONTRACTOR IS RESPONSIBLE FOR PROVIDING OWNER(S) WITH RECORD CONSTRUCTION/AS-BUILT SET OF DRAWINGS AND ALL WARRANTIES FOR PRODUCTS USED AFTER COMPLETION OF PROJECT.

SPECIAL NOTES

NON-COMPLIANT PLUMBING FIXTURES

AS OF JANUARY 1, 2014, SB 407 (2009) REQUIRES NON-COMPLIANT FIXTURES TO BE REPLACED BY WATER-CONSERVING PLUMBING FIXTURES WHEN A PROPERTY IS UNDERGOING ALTERATIONS OR IMPROVEMENTS. THE PROJECT SHALL COMPLY TO THIS REQUIREMENT.

HIDDEN CONDITIONS

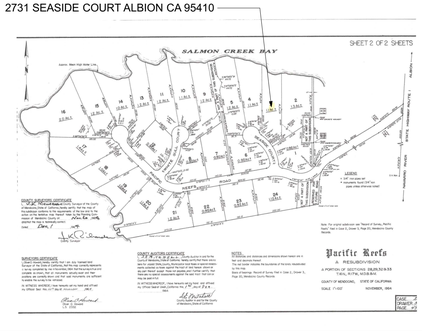
ANY HIDDEN CONDITIONS THAT REQUIRE WORK TO BE PERFORMED BEYOND THE SCOPE OF THE BUILDING PERMIT ISSUED FOR THESE PLANS MAY REQUIRE FURTHER CITY APPROVALS INCLUDING REVIEW BY THE PLANNING COMISSION.

MAINTENANCE MANUAL

BEFORE FINAL INSPECTION, A COMPLETE OPERATION AND MAINTENANCE MANUAL SHALL BE PLACED IN THE BUILDING.

ASSESSORS PARCEL MAP

2731 SEASIDE COURT ALBION CA 95410



SYMBOLS AND ABBREVIATIONS

ABBREVIATION TERM:

&	AND
L	ANGLE
@	AT
A.B.	ANCHOR BOLTS
ABV.	ABOVE
A.C.	AIR CONDITIONING
A.C.T.	ACOUSTICAL CEILING TILE
ACOUS.	ACOUSTIC
ADJ.	ADJUSTABLE OR ADJACENT
A.F.FL.	ABOVE FINISHED FLOOR
AL.	ALUMINUM
ALT.	ALTERNATE
A.P.	ACCESS PANEL
APPL.	APPLIANCE
APPROX.	APPROXIMATELY
ARCH.	ARCHITECT
BD.	BOARD
BLDG.	BUILDING
BLKG.	BLOCKING
BM.	BEAM
B.N.	BOUNDARY NAILING
BOT.	BOTTOM
C.G.	CORNER GUARD
C.J.	CONTROL JOINT
C.L.	CENTER LINE
CLG.	CEILING
CLO.	CLOSET
CLR.	CLEAR
C.M.U.	CONCRETE MASONRY UNIT
CNTR.	COUNTER
COL.	COLUMN
CONC.	CONCRETE
CONST.	CONSTRUCTION
CONT.	CONTINUOUS
CPT.	CARPET
CTR.	CENTER
CTSK.	COUNTERSINK
DBL.	DOUBLE
DK.F.	DRINKING FOUNTAIN
DIA.	DIAMETER
DIM.	DIMENSION
DISP.	DISPENSER
DIST.	DISTANCE
DN.	DOWN
D.F.	DOUGLAS FIR
DR.	DOOR
DS	DOWNSPOUT
DTL.	DETAIL
DWG.	DRAWING
(E)	EXISTING
EA.	EACH
ELEC.	ELECTRICAL
ELEV.	ELEVATION
EMRGY	EMERGENCY
ENG.	ENGINEERED
E.P.	ELECTRICAL PANELBOARD
EQ.	EQUAL
EQUIP.	EQUIPMENT
EXC.	EXCEPT
EXT.	EXTERIOR
F.B.O.	FURNISHED BY OTHERS
F.D.	FLOOR DRAIN
FDN.	FOUNDATION
F.F.	FINISH TO FINISH
F.FL.	FINISH FLOOR
FIN.	FINISH
FLR.	FLOOR
FLOUR.	FLUORESCENT
F.O.	FACE OF
F.O.F.	FACE OF FINISH
F.O.S.	FACE OF STUD
F.R.P.	FIBERGLASS REINFORCED PANEL
F.S.E.C.	FOOD SERVICE EQUIPMENT CONTRACTOR
FTG.	FOOTING
FT.	FOOT OR FEET
GA.	GAUGE
GALV	GALVANIZED
G.F.R.C.	GLASS FIBER REINFORCED CONCRETE
G.B.	GRAB BAR
G.C.	GENERAL CONTRACTOR
GL.	GLASS
GND.	GROUND
G.S.M.	GALVANIZED SHEET METAL
G.W.B.	GYPSUM WALL BOARD
GYP.	GYPSUM
H.B.	HOSE BIBB
HDWD.	HARDWOOD
HDWR	HARDWARE
HGT.	HEIGHT
HORIZ.	HORIZONTAL
HR.	HOUR, HOURS
INSUL.	INSULATION
INT.	INTERIOR
JAN.	JANITOR
JT.	JOINT
K.E.C.	KITCHEN EQUIPMENT CONTRACTOR
KIT.	KITCHEN
LAV.	LAVATORY
MAX.	MAXIMUM
MECH.	MECHANICAL
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MTD.	MOUNTED
MTL.	METAL
MTRL.	MATERIAL
(N)	NEW
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
NOM.	NOMINAL
N.T.S.	NOT TO SCALE
O/	OVER
O.C.	ON CENTER
O.DR.	OVERFLOW DRAIN
OH.	OVERHEAD
O.S.C.I.	OWNER SUPPLIED, CONTRACTOR INSTALLED
P.B.O.	PROVIDED BY OWNER
PEN	PERIMETER EDGE NAILING
PERP.	PERPENDICULAR
PL.	PLATE
PLAS.	PLASTER
PLYWD.	PLYWOOD
P.L.	PROPERTY LINE
P.LAM.	PLASTIC LAMINATE
P.S.F.	POUNDS PER SQUARE FOOT
P.S.I.	POUNDS PER SQUARE INCH
P.T.	PRESSURE TREATED
PTD.	PAINTED
PTN.	PARTITION
R.	RISER
R.D.	ROOF DRAIN
REF.	REFRIGERATOR
REG.	REGISTER
REQ.	REQUIRED
RM.	ROOM
R.O.	ROUGH OPENING
R.S.	ROUGH SAWN
RWD.	REDWOOD
R.W.L.	RAIN WATER LEADER
SCH.	SCHEDULE
SECT.	SECTION
S.F.	SQUARE FEET
SH.	SHELF
SHR.	SHOWER
SHTG.	SHEATHING
SHT.	SHEET
SIM.	SIMILAR
SPEC.	SPECIFICATION
SQ.	SQUARE
STD.	STANDARD
STL.	STEEL
S.S.	STAINLESS STEEL
S.S.D.	SEE STRUCTURAL DRAWINGS
STOR.	STORAGE
STR.	STRUCTURE
SUSP.	SUSPENDED
S.W.	SHEAR WALL
T	TREAD
T.B.	TOWEL BAR
T.B.D.	TO BE DETERMINED
TEMP.	TEMPERED
T.O.C.	TOP OF CURB
T&G	TONGUE AND GROOVE
THK.	THICK
T.N.	TOE NAIL
T.O.B.	TOP OF BEAM
T.O.CONC.	TOP OF CONCRETE
T.O.P.	TOP OF PAVEMENT
T.O.PL.	TOP OF PLATE
T.O.W.	TOP OF WALL
TYP.	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
V.I.F.	VERIFY IN FIELD
WT.	WEIGHT
W/	WITH
W.C.	WATER CLOSET
WD.	WOOD
WDW.	WINDOW
W.H.	WATER HEATER
W/I	WITHIN
W/O	WITHOUT
W.P.	WATER PROOF
W.R.	WATER RESISTANT
WSCT.	WAINSCOT

XX — DOOR No.

XX — WINDOW No.

XX — GENERAL CONSTRUCTION SHEET NOTES

XX — WALL TYPE

XX — KEY NOTE

DATUM REFERENCE: ELEVATION, WORK OR CONTROL

F-1 — FINISH NOTE REFERENCE

DIMENSIONS

F.O.S. OR MASONRY

CENTERLINE

FACE OF FINISH (CLR./MINIMUM CLR.)

ALIGN

EXISTING CONSTRUCTION TO REMAIN ALIGN FINISH SURFACES

EXISTING TO BE REMOVED

(E) CONSTRUCTION

(N) CONSTRUCTION

FF1 FF2

SIGNAGE DETAIL NO.

X Y — SIGNAGE KEYNOTE / SHEET NO.

SIGNAGE SYMBOL

HOLDOWN

X — SHEAR WALL NUMBER / SHEAR WALL REFERENCE

XX / YYY — DETAIL NO. / DETAIL REFERENCE SHEET NO.

X / YYY — DRAWING NO. / ELEVATION REFERENCE SHEET NO.

X / YYY — DRAWING NO. / SECTION REFERENCE SHEET NO.

A / D X B / C YYY — INTERIOR ELEV. NO. / INT. ELEV. REFERENCE SHEET NO.

+/- — ELEVATION

NORTH

XX — EQUIPMENT No.

XXX / YYY — ROOM IDENTIFICATION / ROOM NO.

1 — REVISION NO.

REVISION CLOUD

DRAWING INDEX

PROJECT TEAM

ARCHITECT
RUFF + ASSOCIATES INC.
RICHARD P. RUFF ARCHITECT C-11736
ARCHITECTURE & PLANNING

100 WEST STANDLEY ST.,
UKIAH, CA.95482

415-515-2227
MAIL@BREUERDESIGNSF.COM

CIVIL ENGINEERING

CORNERSTONE CIVIL DESIGN
TYLE PEARSON
1491 GAMAY PLACE
UKIAH, CA. 95482
707-972-7147
CORNERSTONECIVILDESIGN@GMAIL.COM

SEPTIC DESIGN

CARL RITTIMAN
ANDY KAWCZAK
PO BOX 590
MENDOCINO, CA 95460
ANDY.CARLRITTIMAN@GMAIL.COM

PROPOSED PARCEL DATA

LOCATION:	2731 SEASIDE COURT ALBION CA 95410	
APN:	123-340-27	
LOT SIZE:	+/- 1.1 AC	
# OF BUILDINGS/ UNITS		
EXISTING	0	
PROPOSED	2	
OCCUPANCY TYPE:	R3	
CONSTRUCTION TYPE:	V B	
FIRE SPRINKLERS:	DEFERRED SUBMITTAL	
BUILDING AREA	+/- 1,850 SQ FT (HOUSE)	
	+/- 267 SQ FT (GARAGE)	
	+/- 416 SQ FT (DECK)	
	+/- 458 SQ FT (COURTYARD)	
	+/- 2,991 SQ FT TOTAL	
SITE SUPPORT DATA:		
	SEWER : SEPTIC	
	WATER: PUBLIC	
	GAS: NONE	
	ELECTRIC: PG&E	

SCOPE OF WORK

(N) SINGLE FAMILY HOME W/ DETACHED GARAGE, DECK & COURTYARD

DEFERRED SUBMITTALS

FIRE SPRINKLERS

DATE

REVISIONS

#

RUFF + ASSOCIATES

RUFF + ASSOCIATES
Architecture Planning Development

100 West Standley Street, Ukiah, CA 95482
Phone: 707-472-0525 Fax: 707-472-0527
e-mail: richard@ruffarchitect.com

LICENSED ARCHITECT
RICHARD RUFF
NO. C11736
REN. 11-30-24
STATE OF CALIFORNIA

ANDREW KING & JAE EUN MYUNG
NEW HOUSE
2731 SEASIDE COURT ALBION CA 95410

SHEET TITLE

TITLE SHEET

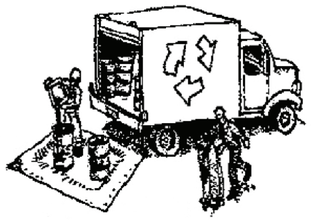
DRAWN BY	MB
CHECKED BY	RPR
DATE CREATED	9-12-2024
DATE ISSUED	9-12-2024
SCALE	AS NOTED
STATUS	INFORMATION ONLY
PAGE	T1.01

SHEET 1 OF 26

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

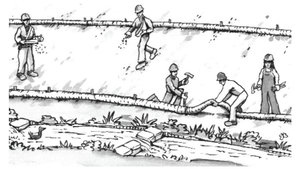
Maintenance and Parking

- ❑ 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.

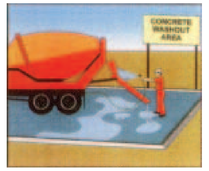
Paving/Asphalt Work

- ❑ 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

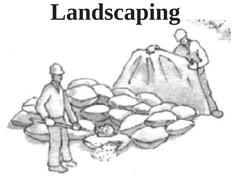
- ❑ Protect nearby storm drain inlets when saw cutting. Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system.
- ❑ Shovel, abosorb, or vacuum saw-cut slurry and dispose of all waste as soon as you are finished in one location or at the end of each work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

Concrete, Grout & Mortar Application



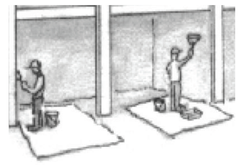
- ❑ Store concrete, grout, and mortar away from storm drains or waterways, and on pallets under cover to protect them from rain, runoff, and wind.
- ❑ Wash out concrete equipment/trucks offsite or in a designated washout area, where the water will flow into a temporary waste pit, and in a manner that 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.

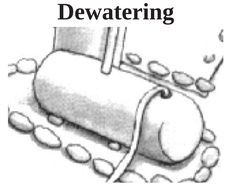
Painting & Paint Removal



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!

RUFF + ASSOCIATES
Architecture Planning Development
100 West Standley Street, Ukiah, CA 95482
Phone: 707-472-0525 Fax: 707-472-0527
e-mail: richard@ruffarchitect.com

LICENSED ARCHITECT RICHARD RUFF NO. C11786 REN. 11-30-24 STATE OF CALIFORNIA

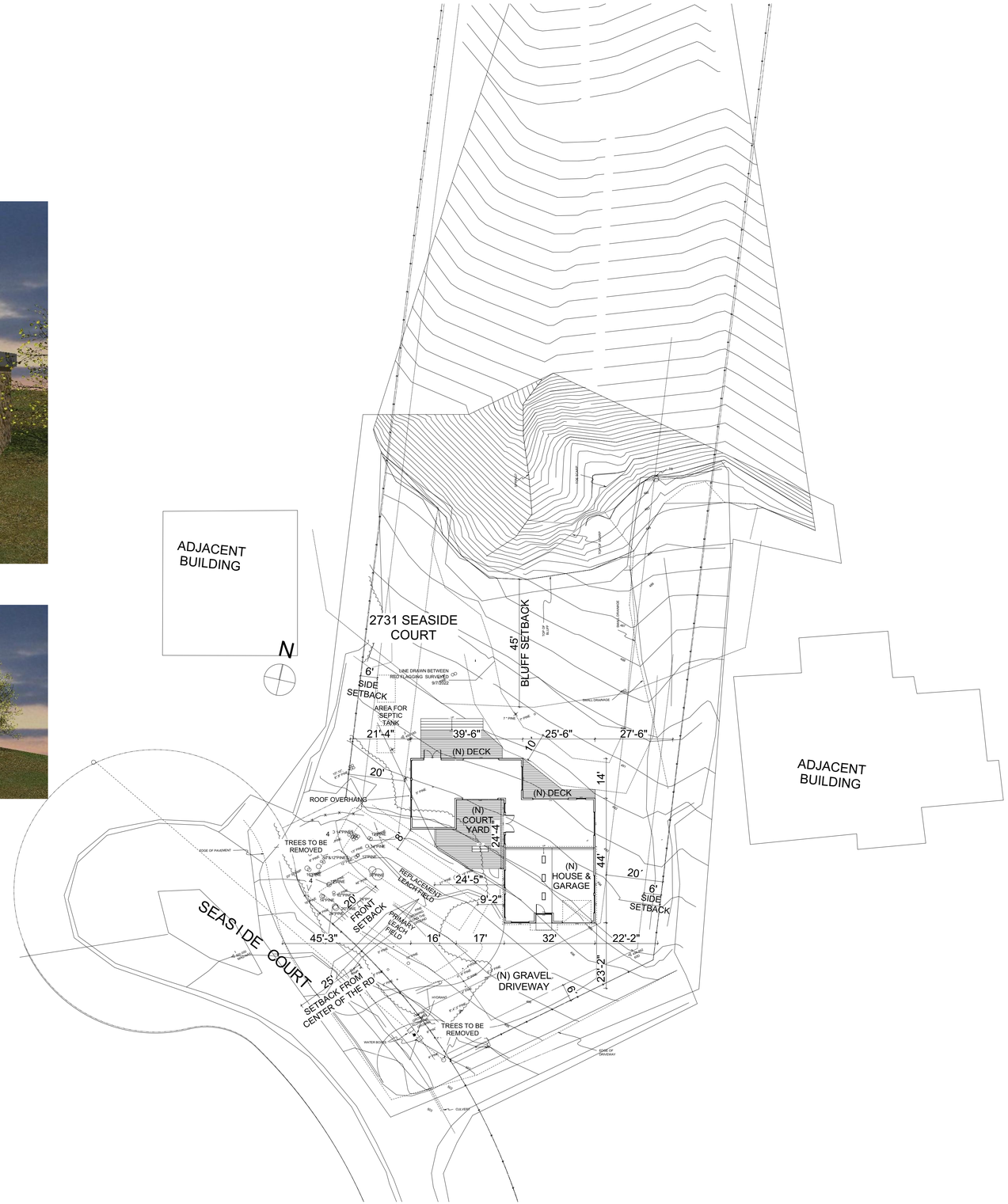
ANDREW KING & JAE EUN MYUNG
NEW HOUSE
2731 SEASIDE COURT ALBION CA 95410

#	REVISIONS	DATE

SHEET TITLE: BMP

DRAWN BY	MB
CHECKED BY	RPR
DATE CREATED	9-12-2024
DATE ISSUED	9-12-2024
SCALE	AS NOTED
STATUS	INFORMATION ONLY
PAGE	T1.02

SHEET 2 OF 26



SITEPLAN 1" = 20'

#	REVISIONS	DATE

RUFF + ASSOCIATES
Architecture Planning Development
100 West Standley Street, Ukiah, CA 95482
Phone: 707-472-0525 Fax: 707-472-0527
e-mail: richard@ruffarchitect.com

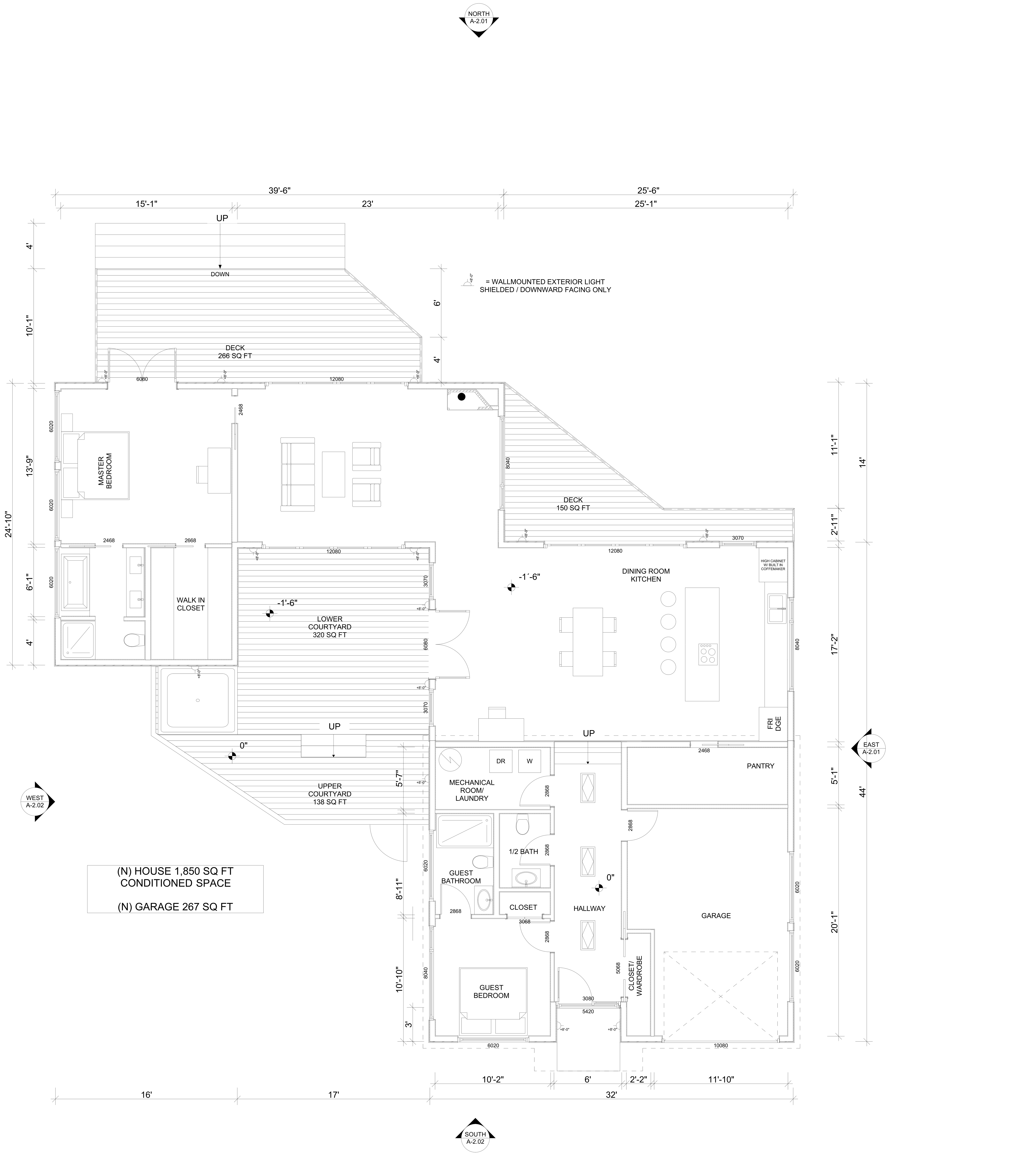
LICENSED ARCHITECT
RICHARD RUFF
NO. C11736
REN. 11-30-24
STATE OF CALIFORNIA

ANDREW KING & JAE EUN MYUNG
NEW HOUSE
2731 SEASIDE COURT ALBION CA
95410

SHEET TITLE
SITEPLAN

DRAWN BY	MB
CHECKED BY	RPR
DATE CREATED	9-12-2024
DATE ISSUED	9-12-2024
SCALE	AS NOTED
STATUS	INFORMATION ONLY
PAGE	A-1.01

SHEET 3 OF 26



1st FLOOR PLAN

1/4" = 1'-0"

#	REVISIONS	DATE

RUFF + ASSOCIATES

RUFF + ASSOCIATES
Architecture Planning Development
100 West Standley Street, Ukiah, CA 95482
Phone: 707-472-0525 Fax: 707-472-0527
e-mail: richard@ruffarchitect.com

LICENSED ARCHITECT RICHARD RUFF NO. C11736 REN. 11-30-24 STATE OF CALIFORNIA

ANDREW KING & JAE EUN MYUNG

NEW HOUSE

2731 SEASIDE COURT ALBION CA 95410

SHEET TITLE: 1st FLOOR PLAN

DRAWN BY	MB
CHECKED BY	RPR
DATE CREATED	9-12-2024
DATE ISSUED	9-12-2024
SCALE	AS NOTED
STATUS	INFORMATION ONLY
PAGE	A-1.02
SHEET	4 OF 26

ROOF PLAN

1/4" = 1'-0"

#	REVISIONS	DATE

RUFF + ASSOCIATES

RUFF + ASSOCIATES

Architecture Planning Development

100 West Standley Street, Ukiah, CA 95482
Phone: 707-472-0525 Fax: 707-472-0527
e-mail: richard@ruffarchitect.com

LICENSED ARCHITECT
RICHARD RUFF
NO. C11786
REN.11-30-24
STATE OF CALIFORNIA

ANDREW KING & JAE EUN MYUNG
NEW HOUSE
2731 SEASIDE COURT ALBION CA
95410

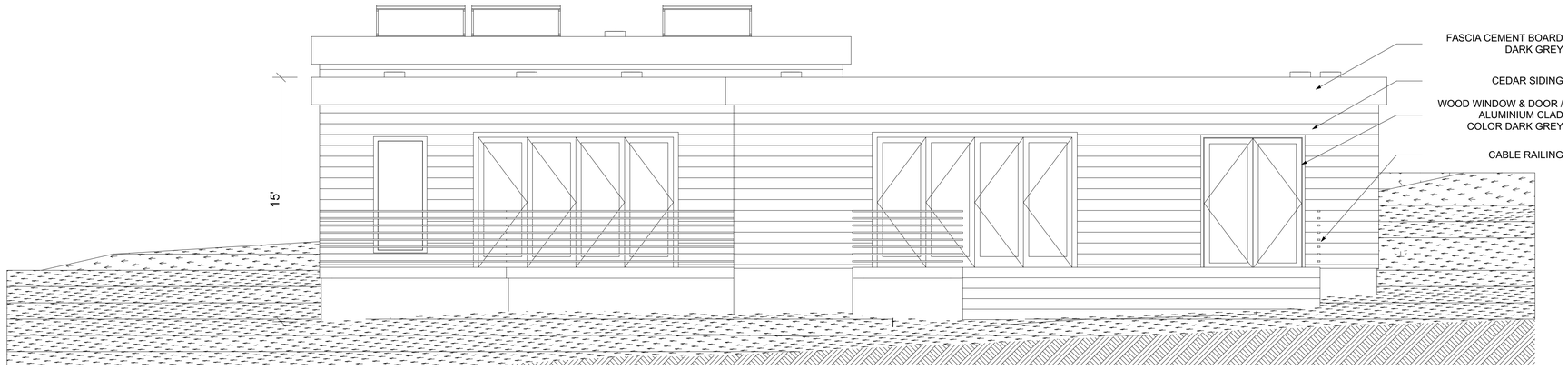
SHEET TITLE

2nd FLOOR PLAN

DRAWN BY	MB
CHECKED BY	RPR
DATE CREATED	9-12-2024
DATE ISSUED	9-12-2024
SCALE	AS NOTED
STATUS	INFORMATION ONLY
PAGE	A-1.03

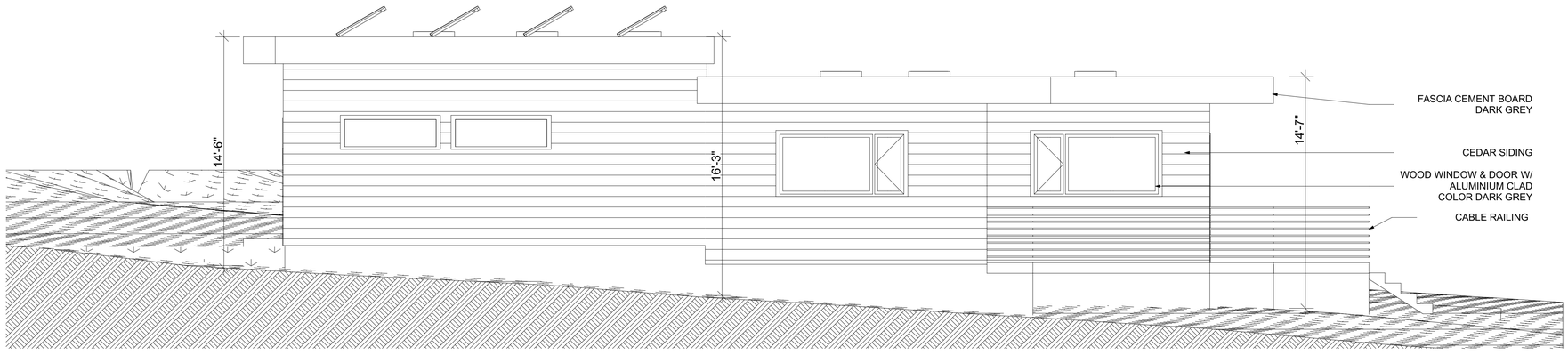
SHEET 5 OF 26

DIMENSIONS TO EXISTING GRADE



NORTH ELEVATION 1/4" = 1'-0"

DIMENSIONS TO EXISTING GRADE



EAST ELEVATION 1/4" = 1'-0"

#	REVISIONS	DATE

RUFF + ASSOCIATES

RUFF + ASSOCIATES
Architecture Planning Development
100 West Standley Street, Ukiah, CA 95482
Phone: 707-472-0525 Fax: 707-472-0527
e-mail: richard@ruffarchitect.com

LICENSED ARCHITECT
RICHARD RUFF
NO. C11736
REN. 11-30-24
STATE OF CALIFORNIA

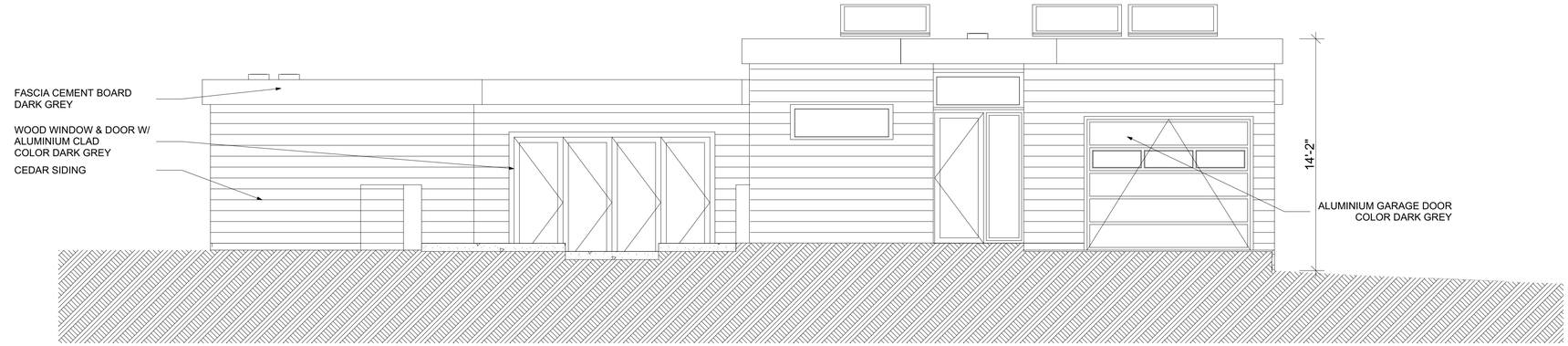
ANDREW KING & JAE EUN MYUNG
NEW HOUSE
2731 SEASIDE COURT ALBION CA
95410

SHEET TITLE
ELEVATIONS

DRAWN BY	MB
CHECKED BY	RPR
DATE CREATED	9-12-2024
DATE ISSUED	9-12-2024
SCALE	AS NOTED
STATUS	INFORMATION ONLY
PAGE	A-2.01

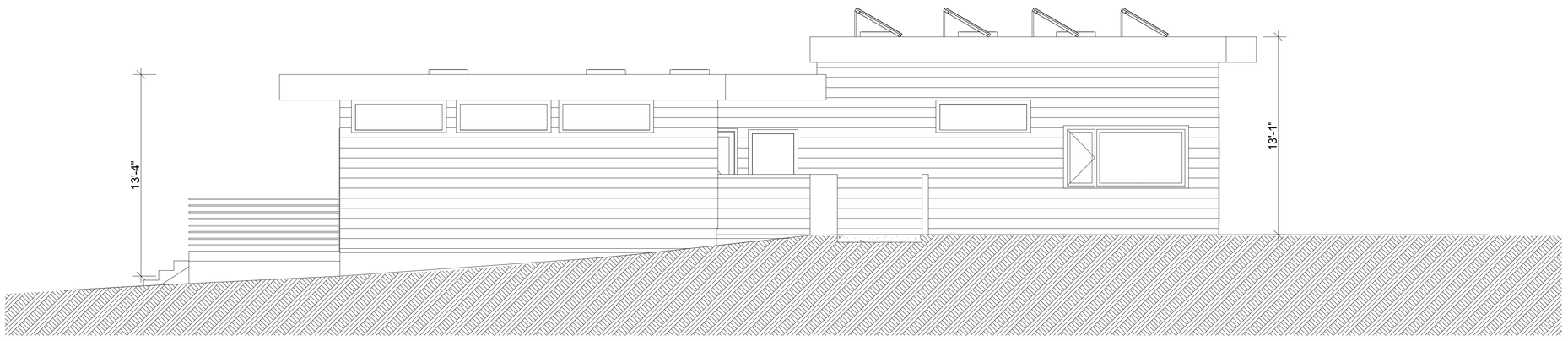
SHEET 6 OF 26

DIMENSIONS TO EXISTING GRADE



SOUTH ELEVATION 1/4" = 1'-0"

DIMENSIONS TO EXISTING GRADE



WEST ELEVATION 1/4" = 1'-0"

DATE
REVISIONS
#

RUFF + ASSOCIATES

RUFF + ASSOCIATES
Architecture Planning Development
100 West Standley Street, Ukiah, CA 95482
Phone: 707-472-0525 Fax: 707-472-0527
e-mail: richard@ruffarchitect.com

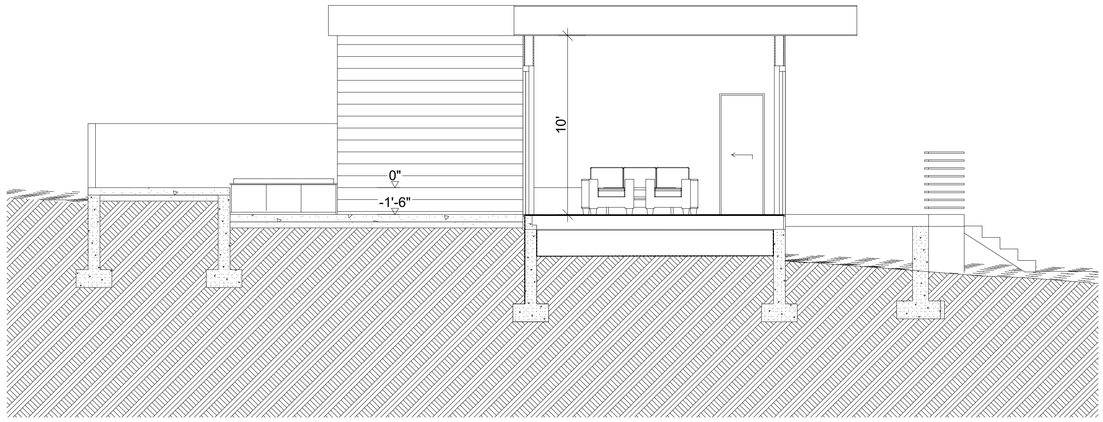
LICENSED ARCHITECT
RICHARD RUFF
NO. C11786
REN.11-30-24
STATE OF CALIFORNIA

ANDREW KING & JAE EUN MYUNG
NEW HOUSE
2731 SEASIDE COURT ALBION CA
95410

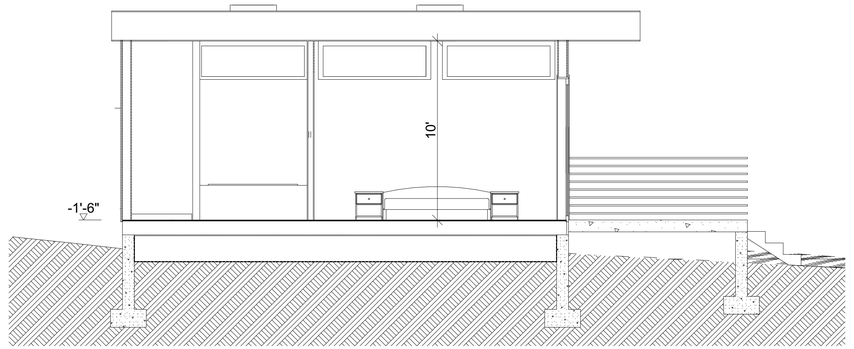
SHEET TITLE
ELEVATIONS

DRAWN BY	MB
CHECKED BY	RPR
DATE CREATED	9-12-2024
DATE ISSUED	9-12-2024
SCALE	AS NOTED
STATUS	INFORMATION ONLY
PAGE	A-2.02

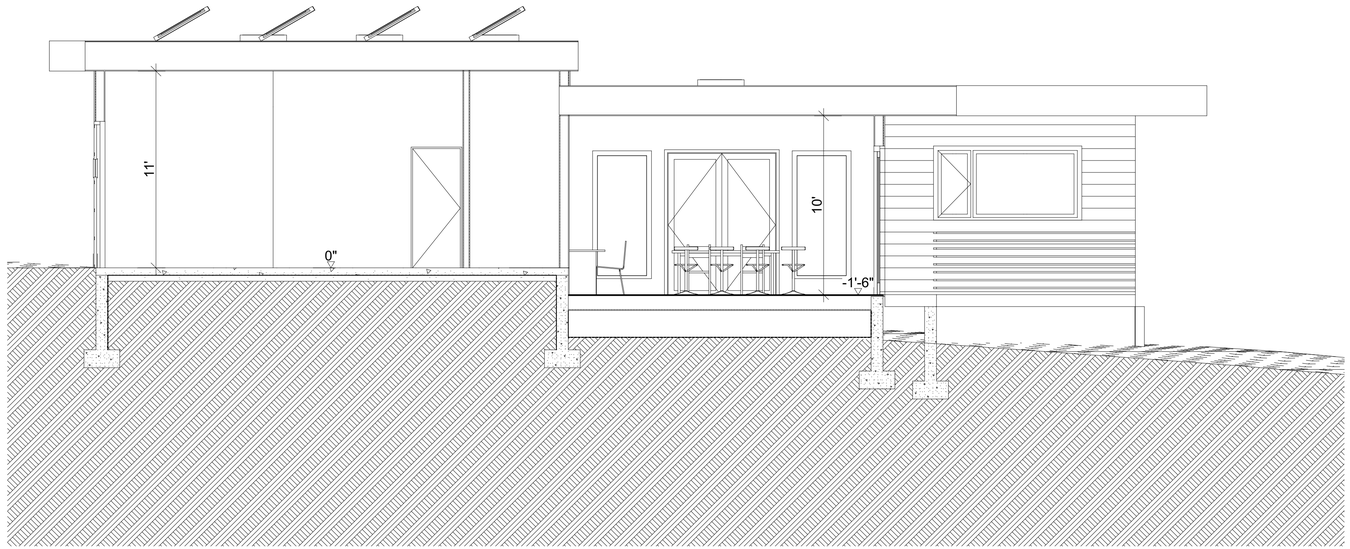
SHEET 7 OF 26



SECTION AA 1/4" = 1'-0"



SECTION BB 1/4" = 1'-0"



SECTION CC 1/4" = 1'-0"

DATE

REVISIONS

#

RUFF + ASSOCIATES

RUFF + ASSOCIATES
Architecture Planning Development

100 West Standley Street, Ukiah, CA 95482
Phone: 707-472-0525 Fax: 707-472-0527
e-mail: richard@ruffarchitect.com

LICENSED ARCHITECT
RICHARD RUFF
NO. C11786
REN.11-30-24
STATE OF CALIFORNIA

ANDREW KING & JAE EUN MYUNG
NEW HOUSE
2731 SEASIDE COURT ALBION CA
95410

SHEET TITLE

SECTIONS

DRAWN BY	MB
CHECKED BY	RPR
DATE CREATED	9-12-2024
DATE ISSUED	9-12-2024
SCALE	AS NOTED
STATUS	INFORMATION ONLY
PAGE	A-2.03

SHEET 8 OF 26

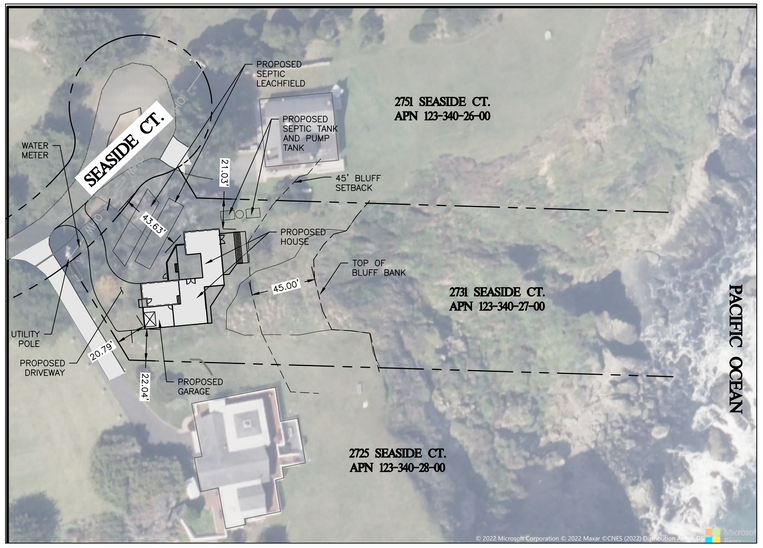
SHEET INDEX		
PAGE	SHEET	TITLE
1	C1	COVER SHEET AND NOTES
2	C2	GRADING AND DRAINAGE PLAN
3	C3	UTILITY PLAN
4	C4	EROSION CONTROL PLAN AND DETAILS
5	C5	SECTIONS AND DETAILS

PROJECT TEAM DIRECTORY			
PROJECT ROLE	REPRESENTATIVE	PHONE	EMAIL
PROPERTY OWNER	ANDREW KING		BLUEANDREWKING@GMAIL.COM
PROJECT CIVIL ENGINEER	TYLER PEARSON CORNERSTONE CIVIL DESIGN	707-972-7147	CORNERSTONECIVILDESIGN@GMAIL.COM
PROJECT SOILS ENGINEER	BRUNSING ASSOCIATES, INC.	707-528-6108	EOLSBORG@BRUNSING.COM
PROJECT ARCHITECT	MARTIN BREUER RUFF AND ASSOCIATES		MAIL@BREUERDESIGNSF.COM
PROJECT STRUCTURAL ENGINEER	MKM AND ASSOCIATES		ERIC@MKMASSOCIATES.COM

SITE IMPROVEMENT PLANS FOR KING RESIDENCE 2731 SEASIDE COURT ALBION, CA 95410

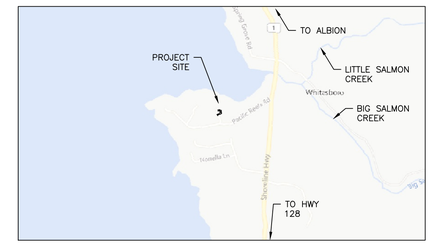
PROJECT DESCRIPTION

GRADING, DRAINAGE, AND EROSION CONTROL IMPROVEMENTS FOR A NEW SINGLE-FAMILY RESIDENCE AND DRIVEWAY



SITE PLAN

SCALE: 1" = 50'



VICINITY MAP

NOT TO SCALE

EROSION AND SEDIMENT CONTROL NOTES

1. PERFORM EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH CHAPTER 16.30 OF THE MENDOCINO COUNTY CODE (MCC).
2. THE APPROVED PLANS SHALL CONFORM TO THE MENDOCINO COUNTY PLANNING AND BUILDING SERVICES (PBS) EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMP'S) GUIDE AS POSTED ON THE MENDOCINO COUNTY WEBSITE.
3. THE PROPERTY OWNER IS RESPONSIBLE FOR PREVENTING STORM WATER POLLUTION GENERATED FROM THE CONSTRUCTION SITE YEAR ROUND. WORK SITES WITH INADEQUATE EROSION PREVENTION AND/OR SEDIMENT CONTROL MAY BE SUBJECT TO A STOP WORK ORDER AND/OR ADDITIONAL INSPECTION FEES TO VERIFY COMPLIANCE WITH MCC.
4. IF DISCREPANCIES OCCUR BETWEEN THESE NOTES, MATERIAL REFERENCED ON THE APPROVED PLANS OR MANUFACTURER'S RECOMMENDATIONS, THEN THE MOST PROTECTIVE SHALL APPLY.
5. AT ALL TIMES THE PROPERTY OWNER IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH THE STATE OF CALIFORNIA NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION AND LAND DISTURBING ACTIVITIES SUCH AS CLEARING, GRADING, EXCAVATION, STOCKPILING, AND RECONSTRUCTION OF EXISTING FACILITIES INVOLVING REMOVAL AND REPLACEMENT.
6. THE PROPERTY OWNER MUST IMPLEMENT AN EFFECTIVE COMBINATION OF EPSC ON ALL DISTURBED AREAS DURING THE RAINY SEASON (OCTOBER 1 – APRIL 30). GRADING AND DRAINAGE IMPROVEMENT SHALL BE PERMITTED DURING THE RAINY SEASON ONLY WHEN ON-SITE SOIL CONDITIONS PERMIT THE WORK TO BE PERFORMED IN COMPLIANCE WITH MCC.
7. DURING THE RAINY SEASON, STORM WATER BMP'S REFERENCED OR DETAILED IN CALTRANS CONSTRUCTION SITE BEST MANAGEMENT PRACTICES MANUAL SHALL BE IMPLEMENTED AND FUNCTIONAL ON THE SITE AT ALL TIMES AND THE AREA OF ERODIBLE LAND EXPOSED AT ANY ONE TIME DURING THE WORK SHALL NOT EXCEED ONE ACRE OR 20 PERCENT OF THE PERMITTED WORK AREA, WHICHEVER IS GREATER, AND THE TIME OF EXPOSURE SHALL BE MINIMIZED TO THE MAXIMUM EXTENT PRACTICABLE.
8. DURING THE NON-RAINY SEASON, ON ANY DAY WHEN THE NATIONAL WEATHER SERVICE FORECAST IS A CHANCE OF RAIN OF 30 PERCENT OR GREATER WITHIN THE NEXT 24 HOURS, STORM WATER BMP'S AS SHOWN ON THE EROSION CONTROL PLAN SHEET OF THIS PLAN SET SHALL BE FUNCTIONAL ON THE SITE TO PREVENT SOIL AND OTHER POLLUTANT DISCHARGES. AT ALL OTHER TIMES, BMP'S SHOULD BE STORED ON SITE IN PREPARATION FOR INSTALLATION PRIOR TO RAIN EVENTS.
9. EPSC BMP'S SHALL BE INSPECTED BY THE PROPERTY OWNER BEFORE FORECASTED STORM EVENTS AND AFTER STORM EVENTS TO ENSURE BMP'S ARE FUNCTIONING PROPERLY. EPSC BMP'S THAT HAVE FAILED OR ARE NO LONGER EFFECTIVE SHALL BE PROMPTLY REPLACED. EPSC BMP'S SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED.
10. THE LIMITS OF GRADING SHALL BE DEFINED AND MARKED ON SITE TO PREVENT DAMAGE TO SURROUNDING TREES AND OTHER VEGETATION. PRESERVATION OF EXISTING VEGETATION SHALL OCCUR TO THE MAXIMUM EXTENT PRACTICABLE. ANY EXISTING VEGETATION WITHIN THE LIMITS OF GRADING THAT IS TO REMAIN UNDISTURBED BY THE WORK SHALL BE IDENTIFIED AND PROTECTED FROM DAMAGE BY MARKING, FENCING, OR OTHER MEASURES.
11. CHANGES TO THE EPSC PLAN MAY BE MADE TO RESPOND TO FIELD CONDITIONS IF THE ALTERNATIVE BMP'S ARE EQUIVALENT OR MORE PROTECTIVE THAN THE BMP'S SHOWN ON THE APPROVED PLANS. ALTERNATIVE BMP'S ARE SUBJECT TO REVIEW AND APPROVAL BY PBS STAFF.
12. DISCHARGES OF POTENTIAL POLLUTANTS FROM CONSTRUCTION SITES SHALL BE PREVENTED USING SOURCE CONTROLS TO THE MAXIMUM EXTENT PRACTICABLE. POTENTIAL POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO: SEDIMENT, TRASH, NUTRIENTS, PATHOGENS, PETROLEUM HYDROCARBONS, METALS, CONCRETE, CEMENT, ASPHALT, LIME, PAINT, STAINS, GLUES, WOOD PRODUCTS, PESTICIDES, HERBICIDES, CHEMICALS, HAZARDOUS WASTE, SANITARY WASTE, VEHICLE OR EQUIPMENT WASH WATER, AND CHLORINATED WATER.
13. ENTRANCE(S) TO THE CONSTRUCTION SITE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF POTENTIAL POLLUTANTS OFFSITE. POTENTIAL POLLUTANTS DEPOSITED ON PAVED AREAS WITHIN THE COUNTY RIGHT-OF- WAY, SUCH AS ROADWAYS AND SIDEWALKS, SHALL BE PROPERLY DISPOSED OF AT THE END OF EACH WORKING DAY OR MORE FREQUENTLY AS NECESSARY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING CONSTRUCTION VEHICLES LEAVING THE CONSTRUCTION SITE ON A DAILY BASIS TO PREVENT DUST, SILT, AND DIRT FROM BEING RELEASED OR TRACKED OFFSITE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AT THE END OF EACH WORKING DAY OR MORE OFTEN, AS NECESSARY.
14. ALL DISTURBED AREAS SHALL BE PROTECTED FROM EROSION PREVENTION BMP'S TO THE MAXIMUM EXTENT PRACTICABLE, SUCH AS ESTABLISHING VEGETATION COVERAGE, HYDROSEEDING, STRAW MULCH, GEOTEXTILES, PLASTIC COVERS, BLANKETS, OR MATS. TEMPORARY REVEGETATION SHALL BE INSTALLED AS SOON AS PRACTICAL AFTER VEGETATION REMOVAL, BUT IN ALL CASES PRIOR TO OCTOBER 1. PERMANENT REVEGATATION OR LANDSCAPING SHALL BE INSTALLED PRIOR TO FINAL INSPECTION.
15. WHENEVER IT IS NOT POSSIBLE TO USE EROSION PREVENTION BMP'S ON EXPOSED SLOPES, SEDIMENT CONTROL BMP'S SUCH AS FIBER ROLLS AND SILT FENCES SHALL BE INSTALLED TO PREVENT SEDIMENT MIGRATION. FIBER ROLLS AND SILT FENCES SHALL BE TRENCHED AND KEYED INTO THE SOIL AND INSTALLED ON CONTOUR. SILT FENCES SHALL BE INSTALLED APPROXIMATELY 2 TO 5 FEET FROM TOE OF SLOPE.
16. HYDROSEEDING SHALL BE CONDUCTED IN A THREE STEP PROCESS. FIRST, EVENLY APPLY SEED MIX AND FERTILIZER TO THE EXPOSED SLOPE. SECOND, EVENLY APPLY MULCH OVER THE SEED AND FERTILIZER. THIRD, STABILIZE THE MULCH IN PLACE. AN EQUIVALENT SINGLE STEP PROCESS, WITH SEED, FERTILIZER, WATER, AND BONDED FIBERS IS ACCEPTABLE.
17. APPLICATIONS SHALL BE BROADCASTED MECHANICALLY OR MANUALLY AT THE RATES SPECIFIED SEED MIX AND FERTILIZER SHALL BE WORKED INTO THE SOIL BY ROLLING OR TAMPING. IF STRAW IS USED AS MULCH, STRAW SHALL BE DERIVED FROM WHEAT, RICE, OR BARLEY AND BE APPROXIMATELY SIX TO EIGHT INCHES IN LENGTH. STABILIZATION OF MULCH SHALL BE DONE HYDRAULICALLY BY APPLYING AN EMULSION OR MECHANICALLY BY CRIMPING OR PUNCHING THE MULCH INTO THE SOIL. EQUIVALENT METHODS AND MATERIALS MAY BE USED ONLY IF THEY ADEQUATELY PROMOTE VEGETATION GROWTH AND PROTECT EXPOSED SLOPES.

MATERIALS	APPLICATION RATE (POUNDS PER ACRE)
SEED MIX	
BROMUS MOLLIS (BLANDO BROME)	40
TRIFOLIUM HIRTUM (HYKON ROSE CLOVER)	20
FERTILIZER	
6-20-0 AND 15% SULPHUR	500
MULCH	
STRAW	4000
HYDRAULIC STABILIZING'	
M-BINDER OR SENTINEL	75-100
EQUIVALENT MATERIAL NON-ASPHALTIC, DERIVED FROM PLANTS	PER MANUFACTURER

18. DUST CONTROL SHALL BE PROVIDED BY CONTRACTOR DURING ALL PHASES OF CONSTRUCTION.
19. STORM DRAIN INLETS SHALL BE PROTECTED FROM POTENTIAL POLLUTANTS UNTIL DRAINAGE CONVEYANCE SYSTEMS ARE FUNCTIONAL AND CONSTRUCTION IS COMPLETE.
20. ENERGY DISSIPATERS SHALL BE INSTALLED AT STORM DRAIN OUTLETS WHICH MAY CONVEY EROSIVE STORM WATER FLOW.
21. SOIL, MATERIAL STOCKPILES, AND FERTILIZING MATERIAL SHALL BE PROPERLY PROTECTED WITH PLASTIC COVERS OR EQUIVALENT BMP'S TO MINIMIZE SEDIMENT AND POLLUTANT TRANSPORT FROM THE CONSTRUCTION SITE.
22. SOLID WASTE, SUCH AS TRASH, DISCARDED BUILDING MATERIALS AND DEBRIS, SHALL BE PLACED IN DESIGNATED COLLECTION AREAS OR CONTAINERS. THE CONSTRUCTION SITE SHALL BE CLEARED OF SOLID WASTE DAILY OR AS NECESSARY. REGULAR REMOVAL AND PROPER DISPOSAL SHALL BE COORDINATED BY THE CONTRACTOR.
23. A CONCRETE WASHOUT AREA SHALL BE DESIGNATED TO CLEAN CONCRETE TRUCKS AND TOOLS. AT NO TIME SHALL CONCRETE PRODUCTS AND WASTE BE ALLOWED TO ENTER COUNTY WATERWAYS SUCH AS CREEKS OR STORM DRAINS. NO WASHOUT OF CONCRETE, MORTAR MIXERS, OR TRUCKS SHALL BE ALLOWED ON SOIL. CONCRETE WASTE SHALL BE PROPERLY DISPOSED.
24. PROPER APPLICATION, CLEANING, AND STORAGE OF POTENTIALLY HAZARDOUS MATERIALS, SUCH AS PAINTS AND CHEMICALS, SHALL BE CONDUCTED TO PREVENT THE DISCHARGE OF POLLUTANTS.
25. TEMPORARY RESTROOMS AND SANITARY FACILITIES SHALL BE LOCATED AND MAINTAINED DURING CONSTRUCTION ACTIVITIES TO PREVENT THE DISCHARGE OF POLLUTANTS.
26. APPROPRIATE VEHICLE STORAGE, FUELING, MAINTENANCE, AND CLEANING AREAS SHALL BE DESIGNATED AND MAINTAINED TO PREVENT DISCHARGE OF POLLUTANTS. NECESSARY.

CONSTRUCTION GENERAL PERMIT NOTES

1. THE PROJECT WILL DISTURB 0.25 ACRES. THEREFORE, A CONSTRUCTION GENERAL PERMIT THROUGH THE STATE WATER QUALITY CONTROL BOARD WILL NOT BE REQUIRED.

SURVEY NOTES

1. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED ON A FIELD SURVEY PERFORMED ON 9/27/2022 BY CORNERSTONE CIVIL DESIGN.
2. BOUNDARY LINES SHOWN ARE APPROXIMATE BASED ON FIELD TIES AND A PREVIOUS SURVEY BY I.L. WELTY AND ASSOCIATES. A LICENSED SURVEYOR SHOULD BE CONTRACTED IF THE EXACT LOCATION OF THE BOUNDARY LINE LOCATION IN RELATIONSHIP TO THIS TOPOGRAPHIC SURVEY IS NECESSARY.
3. BENCHMARK: THE BASIS OF ELEVATION FOR THE TOPOGRAPHY MAP IS BASED ON AN ASSUMED DATUM. OF CONTROL POINT #1 WITH AN ELEVATION OF 500.00'
4. BASIS OF BEARINGS: THE BASIS OF BEARINGS IS ASSUMED APPROXIMATION USING AERIAL IMAGERY.
5. CONTOUR INTERVAL IS: 1 FOOT
6. UTILITIES SHOWN HEREON ARE BASED UPON PHYSICAL FEATURES OBSERVED AT THE TIME OF THE SURVEY. CORNERSTONE CIVIL DESIGN ACCEPTS NO LIABILITY FOR THE LOCATION, EXISTENCE OR NON-EXISTENCE OF THOSE UNDERGROUND STRUCTURES, UTILITY LINES AND RELATED APPURTENANCES. LOCATION OF UNDERGROUND UTILITIES SHALL BE PERFORMED BY A SUBSURFACE UTILITY LOCATING COMPANY (IF DESIRED).
7. TREE TRUNK DIAMETERS ARE APPROXIMATE AND WERE MEASURED AT CHEST HEIGHT (4'+/-) CONSULT A CERTIFIED TREE ARBORIST WHEN IT IS NECESSARY TO ACCURATELY DETERMINE PERTINENT TREE INFORMATION.
8. ALL TREES SMALLER THAN 4" WERE NOT SURVEYED AND ARE NOT SHOWN ON THIS MAP.
9. THE CONTENT OF THIS MAP WAS DEFINED BY CONTRACT AT THE SPECIFIC REQUEST OF THE CLIENT(S) AND/OR THEIR CONSULTANT(S). CORNERSTONE CIVIL DESIGN ACCEPTS NO LIABILITY FOR USE OF THIS MAP BY ANY ONE OTHER THAN THE CLIENT(S) AND/OR CONSULTANTS FOR WHOM IT WAS PREPARED.
10. ANY EASEMENTS SHOWN ON THIS MAP ARE APPROXIMATE. ONLY EASEMENT SHOWN ON THE RECORD MAPS ARE SHOWN AND THERE MAY BE OTHER EASEMENTS ON THE PROPERTY. IF THE CLIENT WOULD LIKE ALL EASEMENTS SHOWN, A LICENSED SURVEYOR SHOULD BE CONTRACTED.

EARTHWORK QUANTITIES

CUT: 81 CY
FILL: 60 CY
NET: 21 CY EXPORT

1. THE QUANTITIES LISTED ARE THE ENGINEER'S ESTIMATE OF SURFACE GRADING ONLY. THE EARTHWORK QUANTITIES ABOVE HAVE NOT BEEN ADJUSTED TO ACCOUNT FOR:
   - 1.1. HOUSE FOOTINGS
   - 1.2. TOPSOIL STRIPPING
   - 1.3. CLEARING AND GRUBBING INCLUDING REMOVAL OF EXISTING PAVEMENT SECTIONS OR UNACCEPTABLE SOILS.
   - 1.4. KEYING, BENCHING, OVER-EXCAVATION AND RECOMPACTION
   - 1.5. TRENCH SPOILS
2. CONTRACTOR IS RESPONSIBLE FOR HIS/HER OWN EARTHWORK QUANTITIES.
3. NO CONTRACTION FACTOR HAS BEEN APPLIED TO THE EARTHWORK NUMBERS. ACTUAL EXPANSION/CONTRACTION AMOUNT MAY BE DIFFERENT DUE TO FIELD CONDITIONS.

FLOOD ZONE NOTES

1. THE SUBJECT PROPERTY IS LOCATED OUTSIDE OF A FEMA FLOOD HAZARD ZONES AS INDICATED BY THE LATEST FEMA FLOOD HAZARD DATA.

BMP INSPECTION NOTE

THERE IS TO BE A BMP INSPECTION PRIOR TO ANY GRADING TAKING PLACE SHOULD THE START OF THE DISTURBANCE TAKE PLACE DURING THE WET SEASON (OCTOBER 15TH TO APRIL 15TH) TO VERIFY THAT THE BMP'S ARE IN PLACE AND THERE ARE BMP MATERIALS ON SITE.

GRADING AND DRAINAGE NOTES

1. PERFORM GRADING AND DRAINAGE IMPROVEMENTS IN ACCORDANCE WITH CHAPTER 18.70 OF THE MENDOCINO COUNTY CODE (MCC) APPLICABLE COUNTY OF MENDOCINO REGULATIONS AND THE GEOTECHNICAL INVESTIGATION BY BRUNSING ASSOCIATES, INC., DATED SEPTEMBER 28, 2022.
2. ALL WORK SHALL BE DONE IN COMPLIANCE WITH THE APPROVED PLANS AND SPECIFICATIONS. THE APPROVED PLANS AND SPECIFICATIONS SHALL NOT BE CHANGED WITHOUT THE WRITTEN APPROVAL OF THE COUNTY OF MENDOCINO PLANNING AND BUILDING SERVICES DEPARTMENT (PBS). PROPOSED MODIFICATIONS TO THE APPROVED PLANS AND SPECIFICATIONS SHALL BE SUBMITTED TO PBS IN WRITING, TOGETHER WITH ALL NECESSARY TECHNICAL INFORMATION AND DESIGN DETAILS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROPERTY OWNER AND ENGINEER OF RECORD. IF APPLICABLE, UPON DISCOVERING DISCREPANCIES, ERRORS, OR OMISSIONS IN THE APPROVED PLANS. PRIOR TO PROCEEDING, THE PROPERTY OWNER SHALL HAVE THE APPROVED PLANS REVISED TO CLARIFY IDENTIFIED DISCREPANCIES, ERRORS, OR OMISSIONS. PBS MAY REQUIRE UNAUTHORIZED WORK TO BE REDONE OR REMOVED TO VERIFY COMPLIANCE WITH THE MCC. PBS MAY INITIATE ENFORCEMENT ACTION AND SEEK THE IMPOSITION OF CIVIL PENALTIES FOR VIOLATIONS OF MCC.
3. THE GRADING OR DRAINAGE PERMIT AND A COPY OF THE APPROVED PLANS SHALL BE MAINTAINED ON THE PROJECT SITE THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.
4. PBS MAY ORDER THAT ANY WORK STOP IMMEDIATELY IF IT IS PERFORMED CONTRARY TO CHAPTER 18.70 OF THE MCC, THE APPROVED PLANS AND SPECIFICATIONS, PERMIT CONDITIONS, OR ANY WORK THAT HAS BECOME HAZARDOUS TO PROPERTY OR THE PUBLIC. A GRADING OR DRAINAGE PERMIT MAY BE SUSPENDED, REVOKED, OR MODIFIED BY PBS IN ACCORDANCE WITH MCC 18.70.140.
5. ISSUANCE OF A GRADING OR DRAINAGE PERMIT BY PBS DOES NOT ELIMINATE THE RESPONSIBILITY OF THE PROPERTY OWNER TO SECURE PERMITS FROM OTHER AGENCIES WITH REGULATORY RESPONSIBILITIES FOR THE USES AND CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE WORK SHOWN ON THE APPROVED PLANS. FAILURE TO OBTAIN ALL REQUIRED PERMITS MAY RESULT IN FINES FROM OTHER AGENCIES.
6. EXISTING DRAINAGE COURSES RECEIVING WATERS FROM THE PROJECT SITE AND LOCATED THROUGHOUT THE PROJECT SITE SHALL REMAIN OPEN AND CLEAR OF DEBRIS TO PROPERLY CONVEY STORM WATER. IF EXISTING DRAINAGE COURSES RECEIVING WATERS FROM THE PROJECT SITE ARE LOCATED IN THE COUNTY RIGHT-OF-WAY AND NEED MAINTENANCE, CONTACT THE MENDOCINO COUNTY DEPARTMENT OF TRANSPORTATION FOR FURTHER ASSISTANCE. IN ANY EVENT, THE PROPERTY OWNER AND/OR CONTRACTOR SHALL BE HELD LIABLE FOR ANY DAMAGE DUE TO OBSTRUCTING NATURAL DRAINAGE PATTERNS.
7. THE CONTRACTOR SHALL CONTACT THE UNDERGROUND SERVICE ALERT (USA), AT 811, AT LEAST TWO WORKING DAYS, BUT NOT MORE THAN 14 CALENDAR DAYS, PRIOR TO EXCAVATION. THE CONTRACTOR SHALL UNCOVER RELEVANT UTILITIES TO VERIFY THEIR LOCATION AND ELEVATION. IF UNEXPECTED OR CONFLICTING UTILITIES ARE ENCOUNTERED DURING EXCAVATION, NOTIFY USA, THE UTILITY OWNER, AND/OR CORNERSTONE CIVIL DESIGN, IF APPLICABLE, IMMEDIATELY. UTILITIES INCLUDE BUT ARE NOT LIMITED TO WATER, SEWER, ELECTRICAL, GAS, TELEPHONE, AND CABLE/TV. THE EXCAVATOR SHALL DELINEATE WITH PAINT OR OTHER SUITABLE MARKINGS THE AREA TO BE EXCAVATED.
8. IN THE EVENT CULTURAL RESOURCES (SUCH AS HISTORICAL, ARCHAEOLOGICAL, AND PALEONTOLOGICAL RESOURCES, AND HUMAN REMAINS) ARE DISCOVERED DURING GRADING OR OTHER CONSTRUCTION ACTIVITIES, WORK SHALL IMMEDIATELY BE HALTED WITHIN THE VICINITY OF TIHE FIND. THE NORTHWEST INFORMATION CENTER SHALL BE NOTIFIED AT 588-8455. A QUALIFIED ARCHEOLOGIST SHALL BE CONSULTED FOR AN ON-SITE EVALUATION. ADDITIONAL MITIGATION MAY BE REQUIRED BY THE COUNTY PER THE ARCHEOLOGIST'S RECOMMENDATIONS. IF HUMAN BURIALS OR HUMAN REMAINS ARE ENCOUNTERED, THE CONTRACTOR SHALL ALSO NOTIFY THE COUNTY CORONER.
9. SHOULD GRADING OPERATIONS ENCOUNTER HAZARDOUS MATERIALS, OR WHAT APPEAR TO BE HAZARDOUS MATERIALS, STOP WORK IMMEDIATELY IN THE CONTAMINATED AREA AND CONTACT 911 OR THE APPROPRIATE AGENCY FOR FURTHER INSTRUCTION.
10. GRADING AND DRAINAGE IMPROVEMENTS SHALL BE SET BACK FROM SITE BOUNDARIES IN COMPLIANCE WITH REQUIREMENTS OF MCC 18.70.110.
11. EXCESS SOIL SHALL BE REMOVED FROM THE PROJECT SITE UNLESS DEPICTED TO REMAIN ONSITE PER THE APPROVED PLAN. THE SITE RECEIVING SOIL MAY REQUIRE A GRADING PERMIT UNLESS EXEMPTED BY MCC 18.70.030.
12. CONTOURS, ELEVATIONS, AND SHAPES OF FINISHED SURFACES SHALL BE BLENDED WITH ADJACENT NATURAL TERRAIN TO ACHIEVE A CONSISTENT GRADE AND NATURAL APPEARANCE. BORDERS OF CUT SLOPES AND FILLS SHALL BE ROUNDED OFF TO A MINIMUM RADIUS OF FIVE FEET TO BLEND WITH THE NATURAL TERRAIN.
13. FILL MATERIAL SHALL NOT INCLUDE ORGANIC, FROZEN, OR OTHER DELETERIOUS MATERIALS. NO ROCK OR SIMILAR IRREDUCIBLE MATERIAL GREATER THAN SIX INCHES IN ANY DIMENSION SHALL BE INCLUDED IN FILLS EXCEPT WHERE APPROVED BY THE SOILS ENGINEER. FILLS SHALL BE CONSTRUCTED IN LIFTS NOT EXCEEDING EIGHT INCHES UNLESS OTHERWISE APPROVED BY THE SOILS ENGINEER. COMPLETED FILLS SHALL BE STABLE, WELL-INTEGRATED, AND BONDED TO ADJACENT MATERIALS AND THE MATERIALS ON WHICH THEY REST. FILLS SHALL BE COMPETENT TO SUPPORT ANTICIPATED LOADS AND BE STABLE AT THE DESIGN SLOPES SHOWN ON THE APPROVED PLANS AND SPECIFICATIONS OR AS DIRECTED BY THE SOILS ENGINEER.
14. GROUND SURFACES SHALL BE PREPARED TO RECEIVE FILL BY REMOVING VEGETATION, TOPSOIL, AND OTHER UNSUITABLE MATERIALS, AND SCARIFYING THE GROUND TO PROVIDE A BOND WITH THE FILL MATERIAL.
15. FILL SHALL NOT BE PLACED ON NATURAL SLOPES STEEPER THAN 2H:1V (50 PERCENT), UNLESS DIRECTED BY THE PROJECT SOILS ENGINEER.
16. FILLS INTENDED TO SUPPORT STRUCTURES OR SURCHARGES SHALL BE COMPACTED TO A MINIMUM OF 90 PERCENT OF MAXIMUM DRY DENSITY, AS DETERMINED BY ASTM D 1557, MODIFIED PROCTOR. A HIGHER COMPACTION PERCENTAGE MAY BE REQUIRED BY THE SOILS ENGINEER.
17. FILLS NOT INTENDED TO SUPPORT STRUCTURES OR SURCHARGES SHALL BE COMPACTED AS FOLLOWS:
    - 17.1. FILL GREATER THAN THREE FEET IN DEPTH SHALL BE COMPACTED TO THE DENSITY SPECIFIED BY THE SOILS ENGINEER.
    - 17.2. FILLS NO GREATER THAN THREE FEET IN DEPTH SHALL BE COMPACTED TO THE DENSITY NECESSARY FOR THE INTENDED USE OR AS DIRECTED BY THE SOILS ENGINEER.
18. CORNERSTONE CIVIL DESIGN IS NOT RESPONSIBLE FOR DETERMINING STREAM AND/OR HABIT CLASSIFICATION OR LOCATION. OWNER IS RESPONSIBLE FOR HIRING A QUALIFIED CONSULTANT TO DELINEATE JURISDICTIONAL STREAMS OR HABITATS ON HIS/HER PROPERTY.

GENERAL UTILITY NOTES

1. EXISTING UNDERGROUND FACILITIES SHOWN ON THESE PLANS ARE APPROXIMATE AND HAVE BEEN LOCATED BASED ON TOPOGRAPHIC FEATURES AND AVAILABLE INFORMATION. CORNERSTONE CIVIL DESIGN, THE OWNER, AND THE CITY/COUNTY ASSUME NO RESPONSIBILITY FOR THE ACCURACY OF THESE FACILITIES OR FOR THE INADVERTENT OMISSION OF RELATED INFORMATION
2. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (USA) TWO DAYS WORKING DAYS PRIOR TO EXCAVATION. THEY CAN BE REACHED AT 1-800-642-2444
3. EXPOSE EXISTING UTILITIES PRIOR TO TRENCHING TO VERIFY THE ALIGNMENT AND ELEVATIONS OF THE UTILITIES AND TO VERIFY DESIGN ASSUMPTIONS. EXISTING UTILITIES MAY REQUIRE RELOCATION AND/OR PROPOSED IMPROVEMENTS MAY REQUIRE GRADE OR ALIGNMENT REVISION DUE TO FIELD CONDITIONS. IF THE EXPOSED UTILITY IS DETERMINED TO BE IN A LOCATION WHICH IS NOT REFLECTED BY THE CONSTRUCTION DOCUMENTS, NOTIFY CORNERSTONE CIVIL DESIGN IN WRITING SO THAT APPROPRIATE ADJUSTMENTS CAN BE MADE.
4. THE CONTRACTOR IS CAUTIONED NOT TO ORDER ITEMS OR INSTALL IMPROVEMENTS UNTIL CONFLICTS ARE RESOLVED. IMPROVEMENTS INSTALLED OR ORDERED PRIOR TO CONFLICT RESOLUTION SHALL BE DONE SOLELY AT THE CONTRACTOR'S RISK AND AT NO EXPENSE TO THE OWNER OR CORNERSTONE CIVIL DESIGN.
5. UTILITY CONFLICTS MAY OCCUR IN THOSE INSTANCES WHERE TWO GRAVITY UTILITIES CROSS AND LACK THE REQUIRED SEPARATION, OR IN THOSE INSTANCE WHERE AN EXISTING UTILITY HAS NOT BEEN IDENTIFIED IN THE CONSTRUCTION DOCUMENTS. REPORT UTILITY CONFLICTS TO THE OWNER'S REPRESENTATIVE IN WRITING AS THEY ARE ENCOUNTERED SO THAT THE OWNER AND OWNER'S REPRESENTATIVE CAN MAKE A DECISION AS TO HOW THE CONTRACTOR SHOULD PROCEED WITH THE WORK.
6. CROSSING UTILITIES WHICH HAVE BEEN IDENTIFIED IN THE CONSTRUCTION DOCUMENTS MAY NOT BE CONSTRUED AS UTILITY CONFLICTS. INSTALL GRAVITY UTILITIES TO THE LINES AND ELEVATIONS IDENTIFIED IN THE CONSTRUCTION DOCUMENTS. INSTALL OTHER UTILITIES ABOVE OR BELOW GRAVITY UTILITIES WHILE COMPLYING WITH THE MINIMUM COVER REQUIREMENTS FOR EACH UTILITY INSTALLED.

REGISTERED PROFESSIONAL ENGINEER
TYLER J. PEARSON
No. 85194
CIVIL
STATE OF CALIFORNIA
Tyler J Pearson

REVISIONS

REV.	DATE	DESCRIPTION	BY

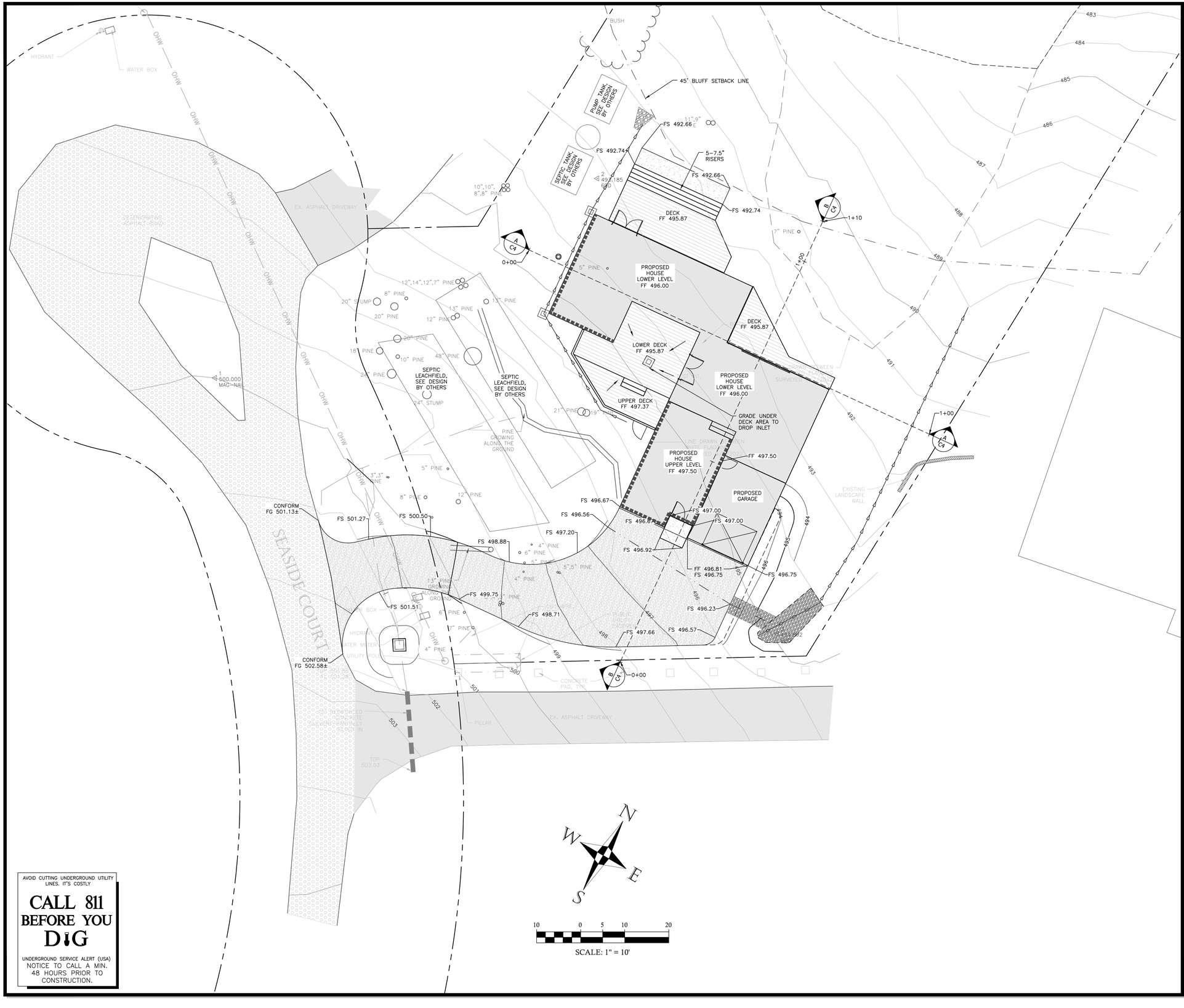
CORNERSTONE CIVIL DESIGN
CIVIL ENGINEERING LAND PLANNING PROJECT MANAGEMENT
149 GAMAY PLACE UKIAH, CA 95482
(707) 972-7147 CORNERSTONECIVILDESIGN@GMAIL.COM

KING RESIDENCE
COVER SHEET AND NOTES
2731 SEASIDE COURT ALBION, CA
APN 123-340-27

PRELIMINARY-NOT FOR CONSTRUCTION

DATE: 9/27/2024
JOB #: 2255

SHEET
C1
OF 5 SHEETS



N

W E

S

10 0 5 10 20

SCALE: 1" = 10'

AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY

CALL 811 BEFORE YOU DIG

UNDERGROUND SERVICE ALERT (USA)
NOTICE TO CALL A MIN. 48 HOURS PRIOR TO CONSTRUCTION.

LEGEND

- 5" PORTLAND CEMENT CONCRETE WITH #3 BARS AT 18" O.C. EACH WAY OVER 4" CLASS 2 AGGREGATE BASE COMPACTED TO 95%
- 4" PORTLAND CEMENT CONCRETE WITH #3 BARS AT 18" O.C. EACH WAY OVER 4" CLASS 2 AGGREGATE BASE COMPACTED TO 95%
- PROPOSED BUILDING
- PROPOSED WOODEN DECK–SEE ARCHITECT PLANS
- RIPRAP ENERGY DISSIPATER PER DETAIL D4 ON SHEET C5
- 90 EXISTING MAJOR CONTOUR
- 89 EXISTING MINOR CONTOUR
- 90 PROPOSED MAJOR CONTOUR
- 89 PROPOSED MINOR CONTOUR
- APPROXIMATE ASSESSOR'S PARCEL LINE
- EARTHEN V-DITCH PER DETAIL ON SHEET C5
- FLOWLINE
- GRADE BREAK
- CURTAIN WALL FOUNDATION, FF TO FG ELEV DIFFERENCE IS 0.83'± MIN.

ABBREVIATIONS

BW	BOTTOM OF WALL ELEVATION AT FINISH GRADE (NOT FOOTING ELEV.)
EP	EDGE OF PAVEMENT ELEVATION
FF	FINISH FLOOR OF BUILDING ELEVATION
FG	FINISH GRADE (LANDSCAPE OR DIRT) ELEVATION
FL	FLOWLINE OF SURFACE, GUTTER OR DITCH ELEVATION
FS	FINISH SURFACE (HARDSCAPE) ELEVATION
HP	HIGH POINT ELEVATION
RIM	TOP OF MANHOLE, DRAINAGE INLET, OR UTILITY BOX ELEVATION
INV	PIPE INVERT ELEVATION
TC	TOP OF CURB ELEVATION
TSL	TOP OF BIORETENTION SOIL LAYER ELEVATION
TW	TOP OF WALL ELEVATION

KEYNOTES

1. INSTALL CONCRETE CURB

REGISTERED PROFESSIONAL ENGINEER
TYLER J. PEARSON
No. 85194
CIVIL
STATE OF CALIFORNIA

Tyler J Pearson

REVISIONS

REV.	DATE	DESCRIPTION	BY

CORNERSTONE CIVIL DESIGN
CIVIL ENGINEERING LAND PLANNING PROJECT MANAGEMENT
149 GAMAY PLACE UKIAH, CA 95482
(707) 972-7447 CORNERSTONECIVILDESIGN@GMAIL.COM

PRELIMINARY-NOT FOR CONSTRUCTION

KING RESIDENCE

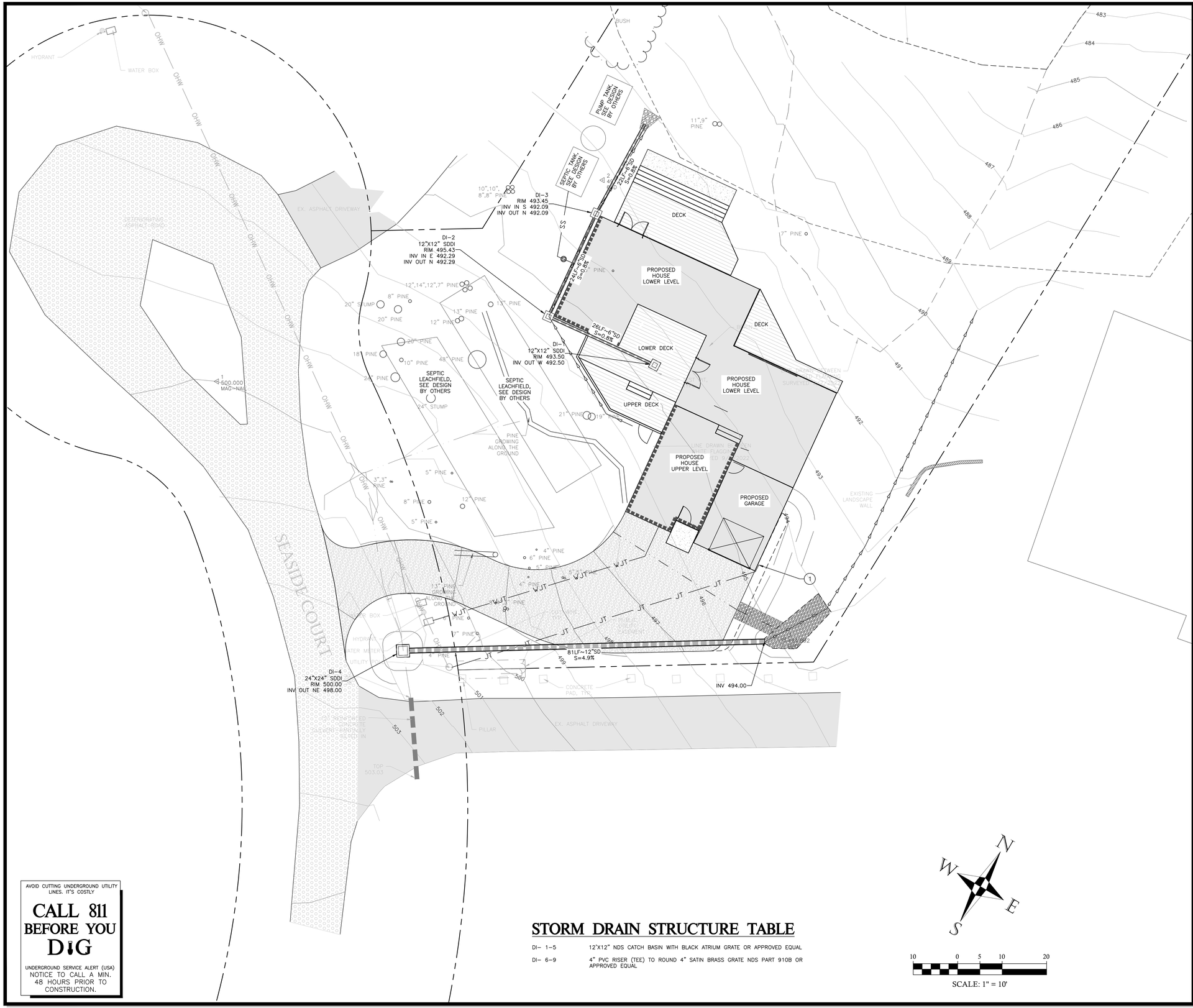
GRADING AND DRAINAGE PLAN

2731 SEASIDE COURT ALBION, CA
APN 123-340-27

DATE: 9/27/2024

JOB #: 2255

SHEET
C2
OF 5 SHEETS



LEGEND

- PROPOSED STORM DRAIN PIPE INSTALLED IN TRENCH PER DETAIL ON SHEET C5
- W — W — DOMESTIC WATER LINE
- FW — FIRE SPRINKLER WATER SUPPLY LINE
- WJT — WATER JOINT TRENCH (FIRE SPRINKLER SUPPLY AND DOMESTIC WATER LINES) SIZE TBD BY OTHERS
- JT — DRY UTILITIES JOINT TRENCH, SEE DETAILS BY OTHERS
- SS — SANITARY SEWER LINE 4" PVC SDR-35
- RL — SOLID 4" PVC SDR-35 SLOPED AT 1% MIN. CONNECTIONS TO STORM DRAIN SHALL BE MADE WITH 6"X6"X4" WYE FITTING

- ROOF DOWNSPOUT
- FIRE HYDRANT
- WATER VALVE
- WATER METER
- SANITARY SEWER CLEANOUT
- SANITARY SEWER MANHOLE (SSMH)
- STORM DRAIN MANHOLE (SDMH)
- STORM DRAIN DROP INLET (SDDI)
- STORM DRAIN CURB INLET (SDCI)
- JOINT UTILITY POLE
- LIGHT POLE

KEYNOTES

1. GAS AND ELECTRIC METER, COORDINATE LOCATION WITH ARCHITECTURE PLANS

UTILITY GENERAL NOTES

1. CONTRACT SHALL POTHOLE ALL EXISTING UTILITIES TO VERIFY EXACT LOCATION PRIOR TO CONSTRUCTION.
2. PIPE CHASES FOR LANDSCAPE IRRIGATION AND LIGHTING ARE NOT SHOWN ON THESE PLANS AND SHALL BE INSTALLED PRIOR TO PLACING CONCRETE FLATWORK.
3. ALL STORM DRAIN PIPES SHOWN ARE TO BE HDPE DUAL WALL WATER-TIGHT PIPE OR SDR-35, UNLESS NOTED OTHERWISE.
4. FIRE SPRINKLER SUPPLY PIPES SHALL HAVE A MINIMUM OF 36" COVER IN DRIVEWAYS AND 30" COVER IN LANSCAPE AREAS.
5. ALL ONSITE WATER LINES SMALLER THAN 4"ø SHALLBE PVC SCHEDULE 40 UNLESS OTHERWISE NOTED IN A STANDARD OR NOTE.
6. ALL ONSITE WATER LINES 4"ø OR LARGER SHALL BE PVC C900 CL150 UNLESS OTHERWISE NOTED IN A STANDARD OR NOTE.
7. THRUST BLOCKS FOR WATER MAINS SHALL BE SIZED IN ACCORDANCE WITH NFPA 24.
8. ALL FIRE SPRINKLER SERVICE PIPES SHALL BE INSTALLED AND TESTED PER NFPA 24, PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES.
9. THE UNDERGROUND CONTRACTOR SHALL SUBMIT TO THE FIRE INSPECTOR A RECORD-OF-COMPLETION FORM IN ACCORDANCE WITH NFPA 24, AFTER THE ENTIRE FIRE SPRINKLER SERVICE PIPES SYSTEM HAS BEEN INSPECTED AND TESTED TO MEET THE MINIMUM SITE REQUIREMENTS.
10. ALL SEWER LINES SHALL BE BE PVC SDR-35 OR APPROVED EQUIVALENT.

DRAINAGE NOTES

1. ALL STORM DRAIN PIPE SHALL BE SDR-35 OR CORRUGATED DUAL-WALL HDPE PIPE INSTALLED IN TRENCH PER DETAIL U1 ON SHEET C5.
2. PERIMETER FOUNDATION DRAINS, CRAWL SPACE DRAINS AND SLAB UNDERDRAINS ARE NOT SHOWN AND SHALL BE INSTALLED PER THE SOILS REPORT AND AS DIRECTED IN THE FIELD BY A REPRESENTATIVE OF THE SOILS ENGINEER.

STORM DRAIN STRUCTURE TABLE

DI- 1-5	12"X12" NDS CATCH BASIN WITH BLACK ATRIUM GRATE OR APPROVED EQUAL
DI- 6-9	4" PVC RISER (TEE) TO ROUND 4" SATIN BRASS GRATE NDS PART 910B OR APPROVED EQUAL

N W E S

10 0 5 10 20

SCALE: 1" = 10'

AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY

CALL 811 BEFORE YOU DIG

UNDERGROUND SERVICE ALERT (USA)
NOTICE TO CALL A MIN. 48 HOURS PRIOR TO CONSTRUCTION.

REGISTERED PROFESSIONAL ENGINEER
TYLER J. PEARSON
No. 85194
CIVIL
STATE OF CALIFORNIA

Tyler J Pearson

REVISIONS

REV.	DATE	DESCRIPTION	BY

CORNERSTONE CIVIL DESIGN
CIVIL ENGINEERING LAND PLANNING PROJECT MANAGEMENT
149 GAMAY PLACE UKIAH, CA 95482
(707) 972-7147 CORNERSTONECIVILDESIGN@GMAIL.COM

PRELIMINARY-NOT FOR CONSTRUCTION

KING RESIDENCE

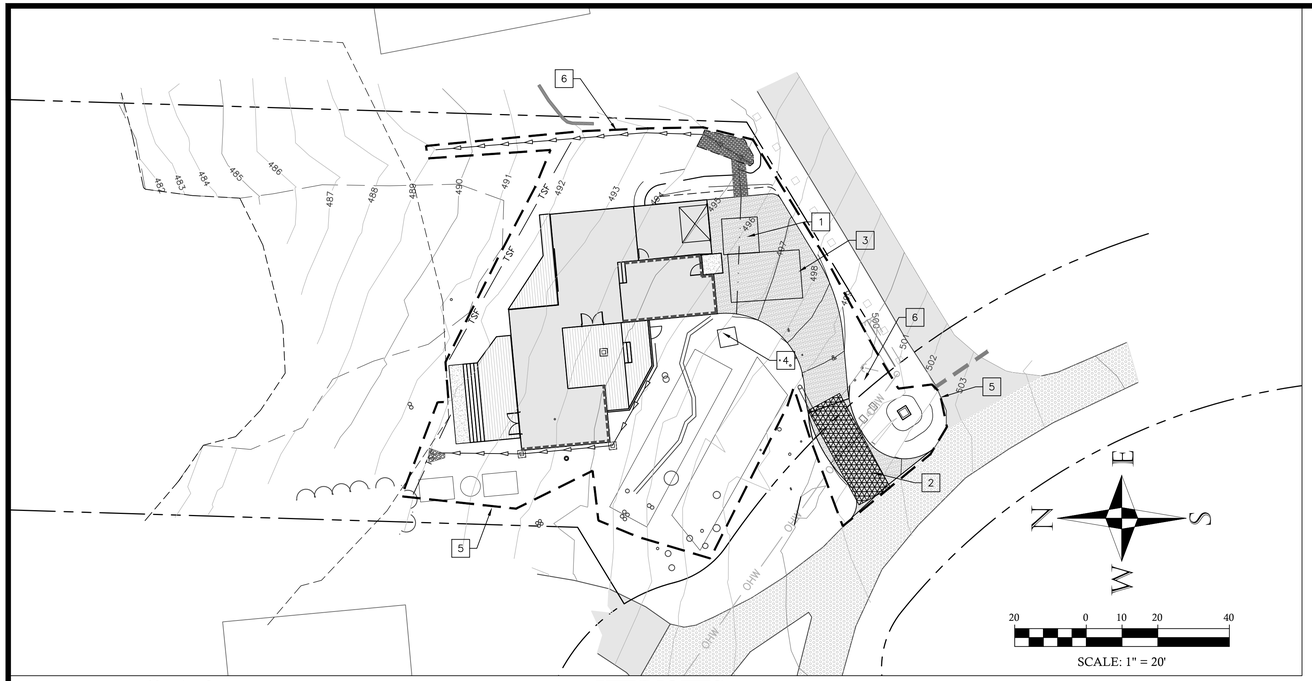
UTILITY PLAN

2731 SEASIDE COURT ALBION, CA
APN 122-340-27

DATE: 9/27/2024

JOB #: 2255

SHEET
C3
OF 5 SHEETS



LEGEND

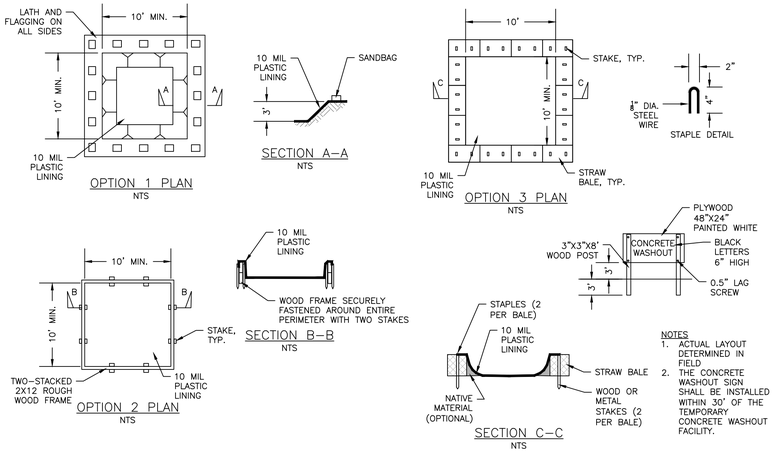
	INSTALL TEMPORARY CONSTRUCTION ENTRANCE PER DETAIL E3 ON THIS SHEET
—— TSF ——	TEMPORARY SILT FENCE PER DETAIL E6 ON THIS SHEET
—— TFR ——	TEMPORARY FIBER ROLL PER DETAIL E1 ON THIS SHEET

KEYNOTES

1. CONCRETE WASHOUT PER DETAIL E5 ON THIS SHEET
2. INSTALL TEMPORARY CONSTRUCTION ENTRANCE PER DETAIL E3 ON THIS SHEET
3. TEMPORARY STAGING AREA AND REFUELING AREA
4. PORTABLE TOILET
5. LIMITS OF DISTURBED AREA
6. INSTALL TEMPORARY CHECK DAM PER DETAIL E2 ON THIS SHEET AT 15' INCREMENTS ALONG SWALE FLOWLINE

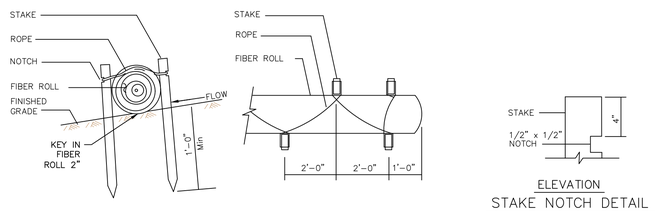
NOTES

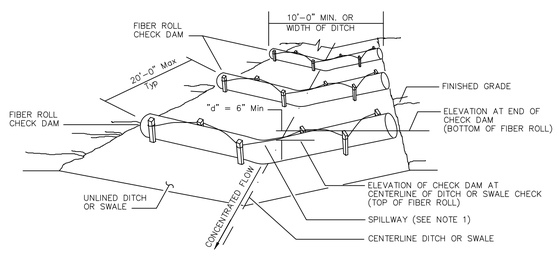
1. ALL EXPOSED SOIL THAT IS NOT COVERED BY HARDSCAPE SHALL BE HYDROSEEDED PER EROSION CONTROL NOTES ON SHEET C1
2. MATERIAL STORAGE AND DELIVERY SHALL FOLLOW RECOMMENDATIONS OF CASQA BMP FACT SHEET WM-1.
3. MATERIAL USE SHALL FOLLOW CASQA BMP FACT SHEET WM-2.
4. STOCKPILES SHALL BE MANAGED CASQA BMP FACT SHEET WM-3.
5. SPILLS SHALL BE PREVENTED AND CONTROLLED FOLLOWING GUIDELINES OF CASQA BMP FACT SHEET WM-4.



E5 TEMPORARY CONCRETE WASHOUT

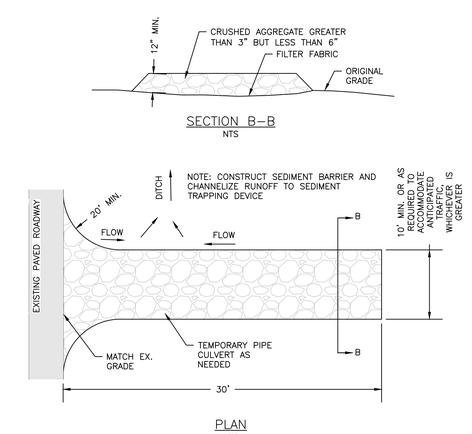
NOT TO SCALE





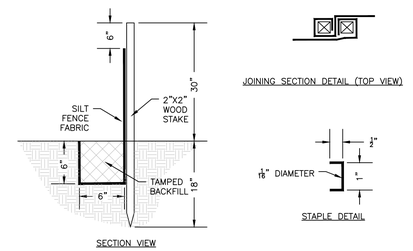
E2 TEMPORARY FIBER ROLL CHECK DAM

NOT TO SCALE



E3 TEMPORARY CONSTRUCTION ENTRANCE

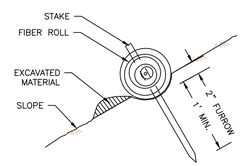
NOT TO SCALE



NOTES
1. CONSTRUCT THE SILT FENCE ROUGHLY LEVEL. THE CHANGE IN BASE ELEVATION ALONG EACH REACH OF SILT FENCE SHALL NOT EXCEED ¼ THE HEIGHT OF THE LINEAR BARRIER
2. THE LAST 8' OF SILT FENC SHALL BE TURNED UP SLOPE
3. STAKE DIMENSIONS ARE NOMINAL.
4. DIMENSIONS MAY VARY TO FIT FIELD CONDITION.
5. STAKES SHALL BE SPACED AT 8' MAXIMUM AND SHALL BE POSITIONED ON THE DOWNSTREAM SIDE OF THE SILT FENCE.
6. STAKES TO OVERLAP AND FENCE FABRIC TO FOLD AROUND EACH STAKE ONE FULL TURN. SECURE FABRIC TO STAKE WITH 4 STAPLES.
7. STAKES SHALL BE DRIVEN TIGHTLY TOGETHER TO PRVENT POTENTIAL FLOW–THROUGH OF SEDIMENT AT JOINT. THE TOPS OF THE STAKES SHALL BE SECURED WITH WIRE.
8. FOR THE END STAKE, FENCE FABRIC SHALL BE FOLDED AROUND TWO STAKES ONE FULL TURN AND SECURED WITH 4 STAPLES.
9. MINIMUM OF 4 STAPLES PER STAKE. DIMENSIONS SHOWN ARE TYPICAL.
10. JOINING SECTIONS SHALL NOT BE PLACED AT SUMP LOCATIONS.

E6 TEMPORARY SILT FENCE

NOT TO SCALE



NOTES:
1. FIBER ROLLS SHALL BE INSTALLED LEVEL USING A LASER OR EQUIVALENT METHOD TO ENSURE CORRECT INSTALLATION.
2. OVERLAP FIBER ROLL ENDS 2' MINIMUM AT JOINTS.
3. STAGGER JOINTS 5' MIN. FOR EACH FIBER ROLL ROW.

E1 TEMPORARY FIBER ROLL

NOT TO SCALE

PRELIMINARY-NOT FOR CONSTRUCTION

REVISIONS

REV.	DATE	DESCRIPTION	BY

CORNERSTONE CIVIL DESIGN
CIVIL ENGINEERING LAND PLANNING PROJECT MANAGEMENT
149 GAMAY PLACE UKIAH, CA 95482
(707) 972-7647 CORNERSTONECIVILDESIGN@GMAIL.COM

KING RESIDENCE

EROSION CONTROL PLAN

2731 SEASIDE COURT ALBION, CA
APN 123-340-27

DATE: 9/27/2024

JOB #: 2255

SHEET C4 OF 5 SHEETS

LEGEND

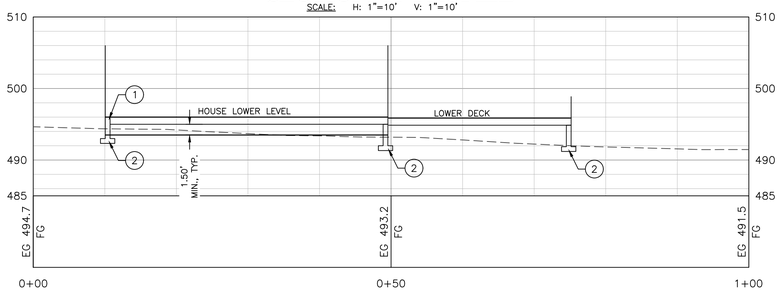
- EXISTING GRADE PROFILE
- FINISH GRADE PROFILE
- APPROXIMATE ASSESSOR'S PARCEL LINE
- FLOWLINE
- GRADE BREAK

KEYNOTES

1. CURTAIN WALL FOUNDATION
2. BUILDING FOOTINGS, SHOWN FOR REFERENCE ONLY. REFER TO STRUCTURAL PLANS FOR FOOTING DEPTHS, DIMENSIONS, AND DETAILS. INSTALL PERIMETER DRAINS AS REQUIRED BY THE SOILS REPORT, TYP.
3. FRONT ENTRANCE

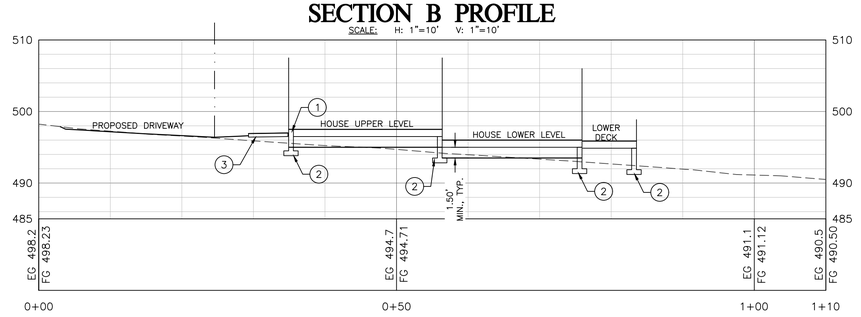
SECTION A PROFILE

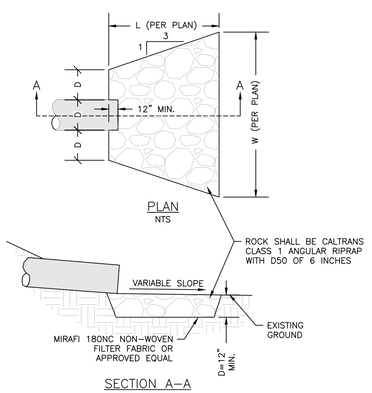
SCALE: H: 1"=10' V: 1"=10'



SECTION B PROFILE

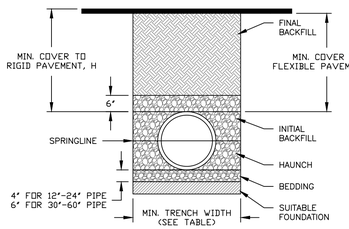
SCALE: H: 1"=10' V: 1"=10'





D4 RIPRAP ENERGY DISSIPATOR

NOT TO SCALE



RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4" (100mm)	21" (533mm)
6" (150mm)	23" (584mm)
8" (200mm)	26" (660mm)
10" (250mm)	28" (711mm)
12" (300mm)	30" (762mm)
15" (375mm)	34" (864mm)
18" (450mm)	39" (991mm)
24" (600mm)	48" (1219mm)
30" (750mm)	56" (1422mm)
36" (900mm)	64" (1626mm)
42" (1050mm)	72" (1829mm)
48" (1200mm)	80" (2032mm)
60" (1500mm)	96" (2438mm)

MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS**

PIPE DIAM.	SURFACE LIVE LOADING CONDITION H-25	SURFACE LIVE LOADING CONDITION HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48" (300mm - 1200mm)	12" (305mm)	48" (1219mm)
60" (1500mm)	24" (610mm)	60" (1524mm)

* VERIFY IF EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER
**SEE BACKFILL REQUIREMENTS IN NOTE 6.

MAXIMUM RECOMMENDED COVER BASED ON VECHICLE LOADING CONDITIONS

PIPE DIAM.	CLASS I		CLASS II		CLASS III
	COMPACTED	DUMPED	95%	90%	95%
4" (100mm)	34 (10.4m)	16 (4.9m)	23 (7.0m)	16 (4.9m)	17 (5.2m)
6" (150mm)	40 (12.2m)	19 (5.8m)	27 (8.2m)	19 (5.8m)	20 (6.1m)
8" (200mm)	30 (9.1m)	14 (4.3m)	21 (6.4m)	14 (4.3m)	15 (4.6m)
10" (250mm)	34 (10.4m)	16 (4.9m)	23 (7.0m)	16 (4.9m)	17 (5.2m)
12" (300mm)	35 (10.7m)	17 (5.2m)	24 (7.3m)	17 (5.2m)	18 (5.5m)
15" (375mm)	37 (11.3m)	18 (5.5m)	25 (7.6m)	18 (5.5m)	19 (5.8m)
18" (450mm)	32 (9.8m)	15 (4.6m)	22 (6.7m)	15 (4.6m)	16 (4.9m)
24" (600mm)	27 (8.2m)	13 (4.0m)	19 (5.8m)	13 (4.0m)	14 (4.3m)
30" (750mm)	22 (6.7m)	11 (3.4m)	16 (4.9m)	11 (3.4m)	11 (3.4m)
36" (900mm)	26 (7.9m)	12 (3.7m)	18 (5.5m)	12 (3.7m)	13 (4.0m)
42" (1050mm)	24 (7.3m)	11 (3.4m)	17 (5.2m)	11 (3.4m)	12 (3.7m)
48" (1200mm)	23 (7.0m)	11 (3.4m)	16 (4.9m)	11 (3.4m)	12 (3.7m)
60" (1500mm)	26 (7.9m)	12 (3.7m)	18 (5.5m)	12 (3.7m)	13 (4.0m)

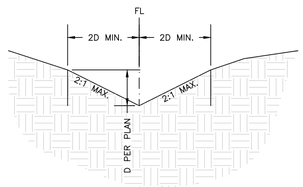
FILL HEIGHT TABLE GENERATED USING AASHTO SECTION 12, LOAD RESISTANCE FACTOR DESIGN (LRFD) PROCEDURE WITH THE FOLLOWING ASSUMPTIONS:
NO HYDROSTATIC PRESSURE,
UNIT WEIGHT OF SOIL (Ys) = 120 PCF

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-1500mm).
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. FOR TRAFFIC APPLICATIONS WITH LESS THAN FOUR FEET OF COVER, EMBEDMENT OF THE PIPE SHALL BE USING ONLY A CLASS I OR CLASS II BACKFILL.

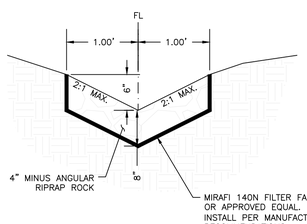
U1 CORRUGATED DUAL WALL HDPE STORM DRAIN TRENCH DETAIL

NOT TO SCALE



D2 EARTHEN SWALE

NOT TO SCALE



D1 ROCK-LINED SWALE

NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
TYLER J. PEARSON
No. 85194
CIVIL
STATE OF CALIFORNIA

Tyler J Pearson

REVISIONS

REV.	DATE	DESCRIPTION	BY

CORNERSTONE CIVIL DESIGN
CIVIL ENGINEERING LAND PLANNING PROJECT MANAGEMENT
149 GAMAY PLACE UKIAH, CA 95482
(707) 972-7647 CORNERSTONECIVILDESIGN@GMAIL.COM

PRELIMINARY-NOT FOR CONSTRUCTION

KING RESIDENCE

EROSION CONTROL PLAN

2731 SEASIDE COURT ALBION, CA
APN 123-340-27

DATE: 9/27/2024

JOB #: 2255

SHEET
C5
OF 5 SHEETS

Lands of King
Sections 28, 29, 32 & 33, Township 16 North,
Range 17 West, Mount Diablo Meridian
Mendocino County, CA

General Notes	
General Plan Designation:	RR5 (1)
Zoning District:	RR:5 / RR:1
Urban/Rural:	Rural
Highly Scenic Area:	No
Proposed Land Use:	SFR & Septic
Appealable to Coastal Commission:	Yes
Entitlement Permit Type:	CDP
Yard Setbacks:	20' front & rear, 6' sides
Pacific Reefs CC&Rs Setback:	20' all sides
CalFire Setbacks:	30'
Corridor Preservation Setback:	25' from ℄ Seaside Ct.
Height Limit - County:	28'
Environmental Constraints:	Yes
Potential Geologic Hazards:	Yes
Water Source:	Water district
Wastewater Disposal:	Proposed On-site septic
Tree Removal:	Yes, approx. 63 trees

Lot Coverage Tabulation Gross Site Area:	
Gross Site Area:	1.03 ac (45,069.97 sf)
Maximum allowable lot coverage:	20% (9,014 sf)

Lot Coverage:	
(P) Footprint Residence:	1,816 sf
(P) Footprint Attached Garage:	310 sf
(P) Footprint Decks:	990 sf
(P) Footprint Concrete:	121 sf
Total Building Footprint:	3,237 sf
(P) Concrete Driveway & Parking:	1,686 sf
Total Lot Coverage (Footprint):	4,923 sf (10.92%)

Sensitive Resources:

Legend	Type	Distance from Development
✳	Mendocino Paintbrush	91'±
	Salal - Berry Brambles	45'±
	Pacific Reedgrass Meadow	0'±

LEGEND:

- CF30 — CAL FIRE 30' YARD SETBACK
- x' Y — YARD SETBACK
- CCR20 — PACIFIC REEF CC&Rs SETBACK
- TOB — TOP OF BLUFF
- 45' G — 45' GEOTECHNICAL SETBACK
- 50' B — 50' BUFFER
- 100' B — 100' BUFFER
- FLOWLINE
- (P) GRAVEL
- (P) CONCRETE
- ⊗ TREE TO BE REMOVED, TYP.

10' FOOT PATH EASEMENT
PER 727-685

364.83'±

357.90'±

AP #123-340-27

5' DRAINAGE EASEMENT
PER 677-284

(P) 1200 GALLON CONCRETE
PUMP CHAMBER

WHITEWATER AEROBIC
TREATMENT UNIT

1200 GALLON CONCRETE
SEPTIC TANK

(P) PRESSURIZED AT-GRADE
LEACHFIELD

(P) FORCE
LINE

25.00'

SEASIDE COURT

80.00'

5' DRAINAGE EASEMENT
PER 677-284

(P) SFR
w/ ATTACHED GARAGE

(P) 100% REPLACEMENT AREA

(P) EXTENT
OF GRADING

EXTENT OF TOPSOIL COVER

(E) WATER BOX

(E) FIRE HYDRANT

(E) WATER METER

(P) EXTENT OF GRADING

PROPERTY LINE
& CORRIDOR PRESERVATION SETBACK

(E) UTILITY POLE
w/ GUY WIRE

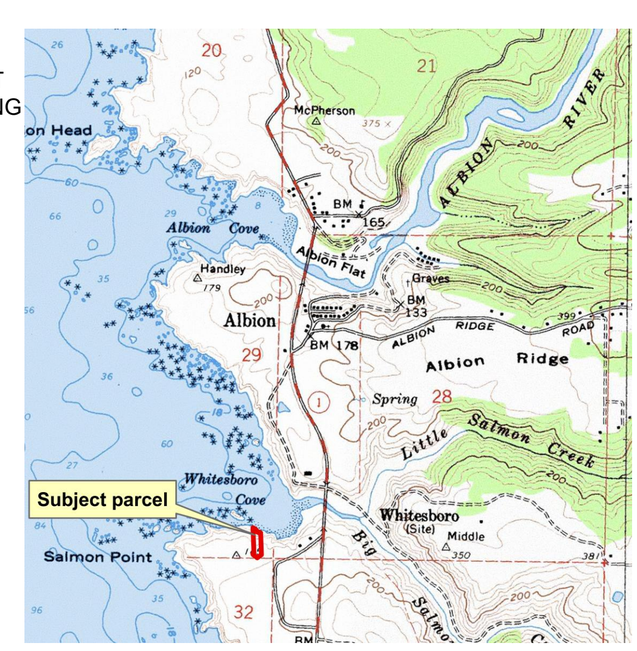
(E) GUY WIRE

2' x 15' P.U.E.

(E) CULVERT

N
W E
S

0' 20' 40' 60'



SITE PLAN | 1:20 | 1

SHEET 1 OF 1 SHEETS

REVISION	BY	DATE

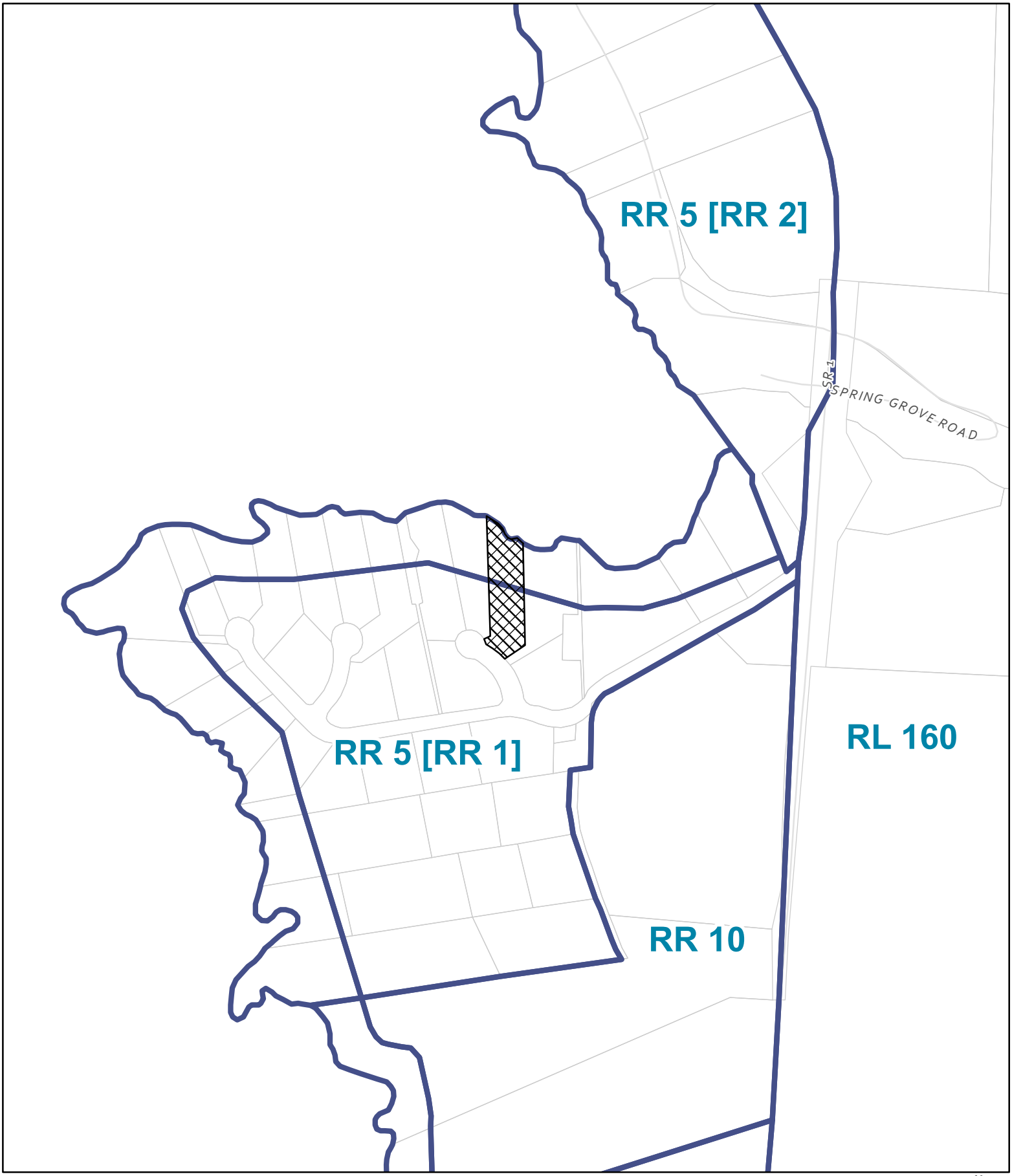
APN: 123-340-27-00
DRAWN BY: TH
DATE: 10/2/2024
SCALE: AS SHOWN
APPROVED BY: MD

KING

2731 Seaside Ct.
Albion, CA 95410

Wynn COASTAL PLANNING & BIOLOGY
703 North Main Street, Fort Bragg CA 95437
ph: 707-964-2537 fx: 707-964-2622 www.WCPlan.com

Design review, not meant for construction.



CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

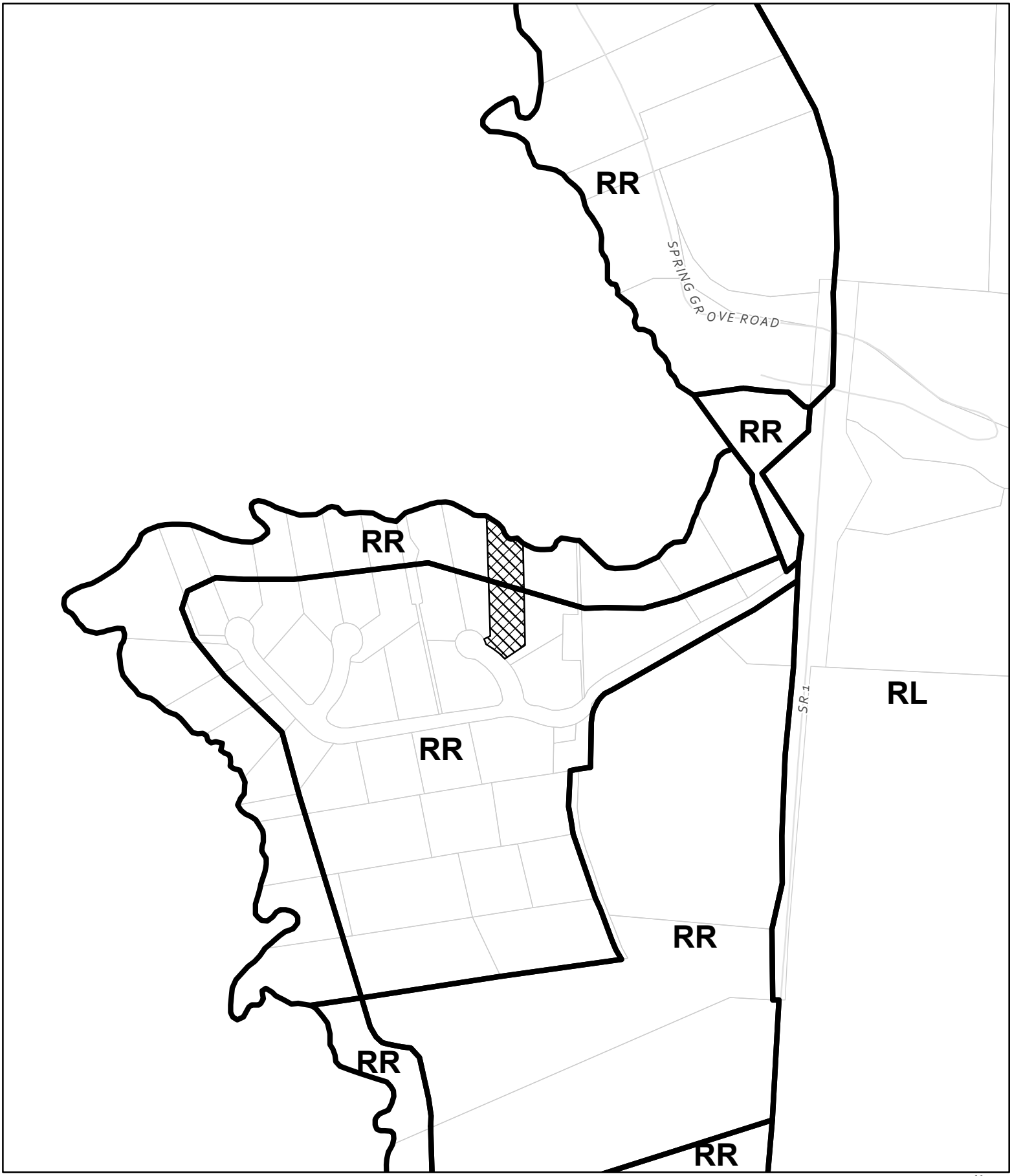
Public Roads
Assessors Parcels

0 225 450 Feet
0 0.04 0.08 Miles

N
W E
S

1:5,000

GENERAL PLAN



CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

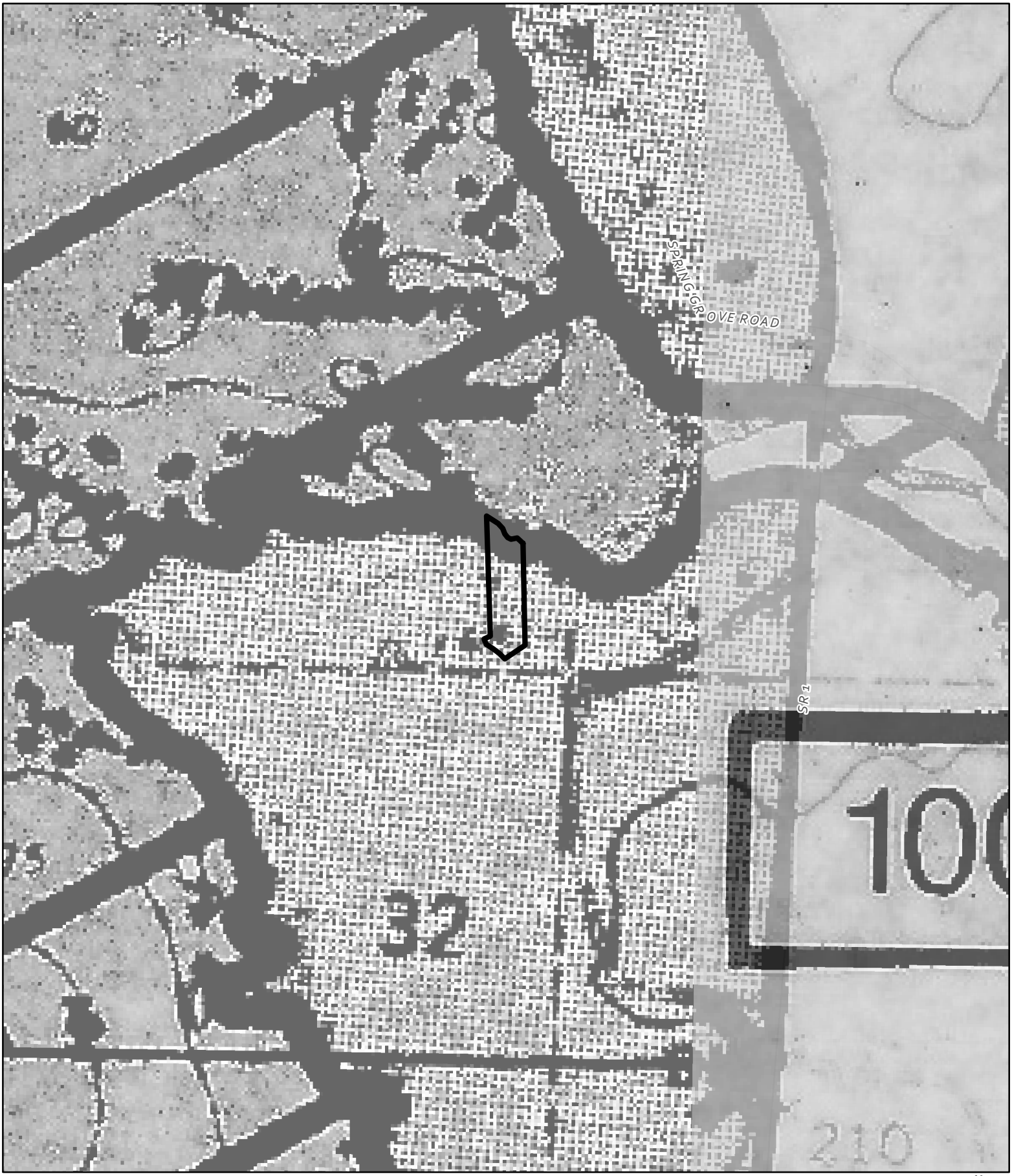
Zoning Districts
Public Roads
Assessors Parcels

0 225 450 Feet
0 0.04 0.08 Miles
1:5,000

N W E S

ZONING

THIS MAP AND DATA ARE PROVIDED WITHOUT WARRANTY OF ANY KIND.
DO NOT USE THIS MAP TO DETERMINE LEGAL PROPERTY BOUNDARIES



CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

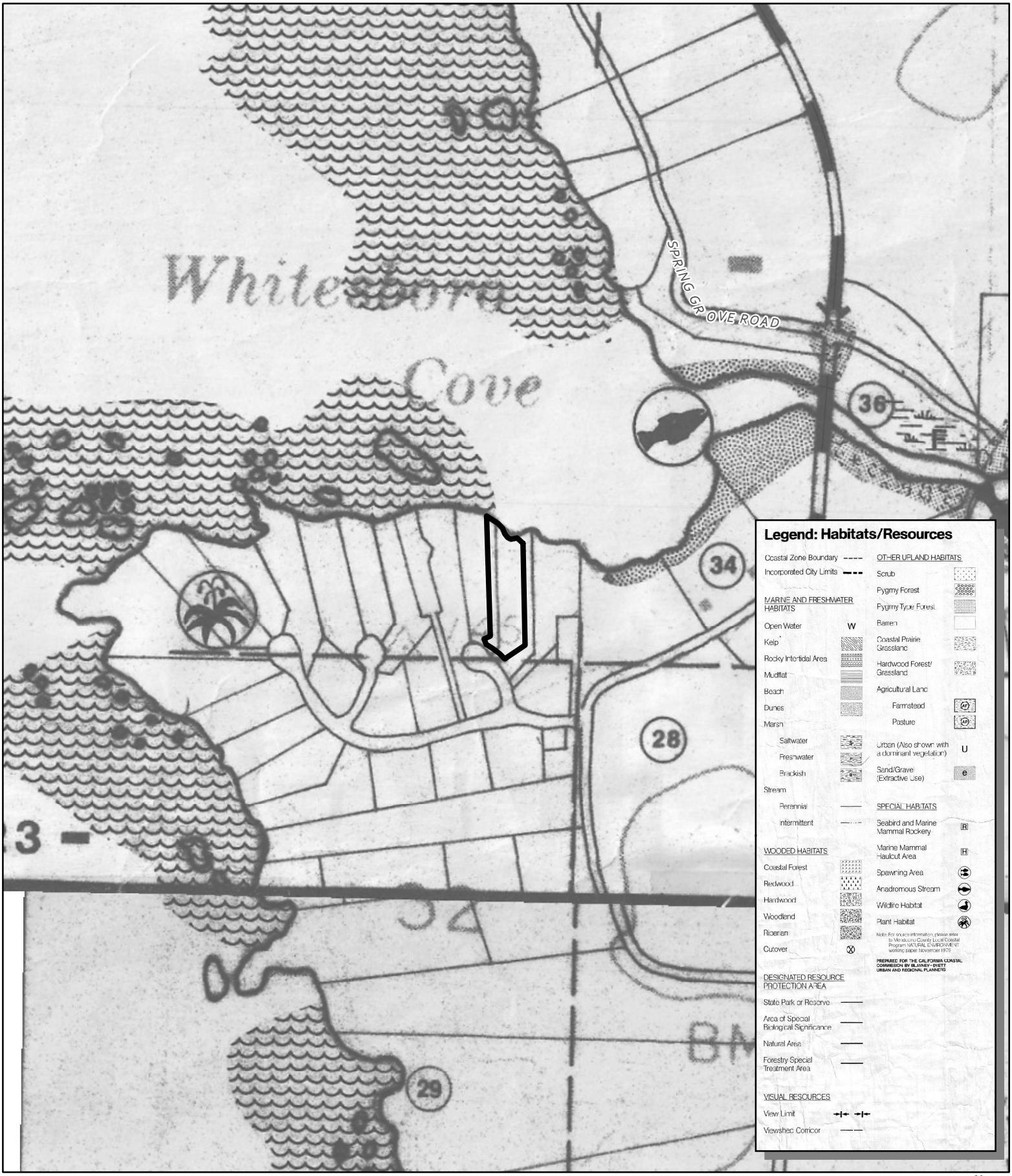
Public Roads

0 225 450 Feet
0 0.04 0.08 Miles

N W E S

1:5,000

POST LCP CERTIFICATION & APPEAL JURISDICTION



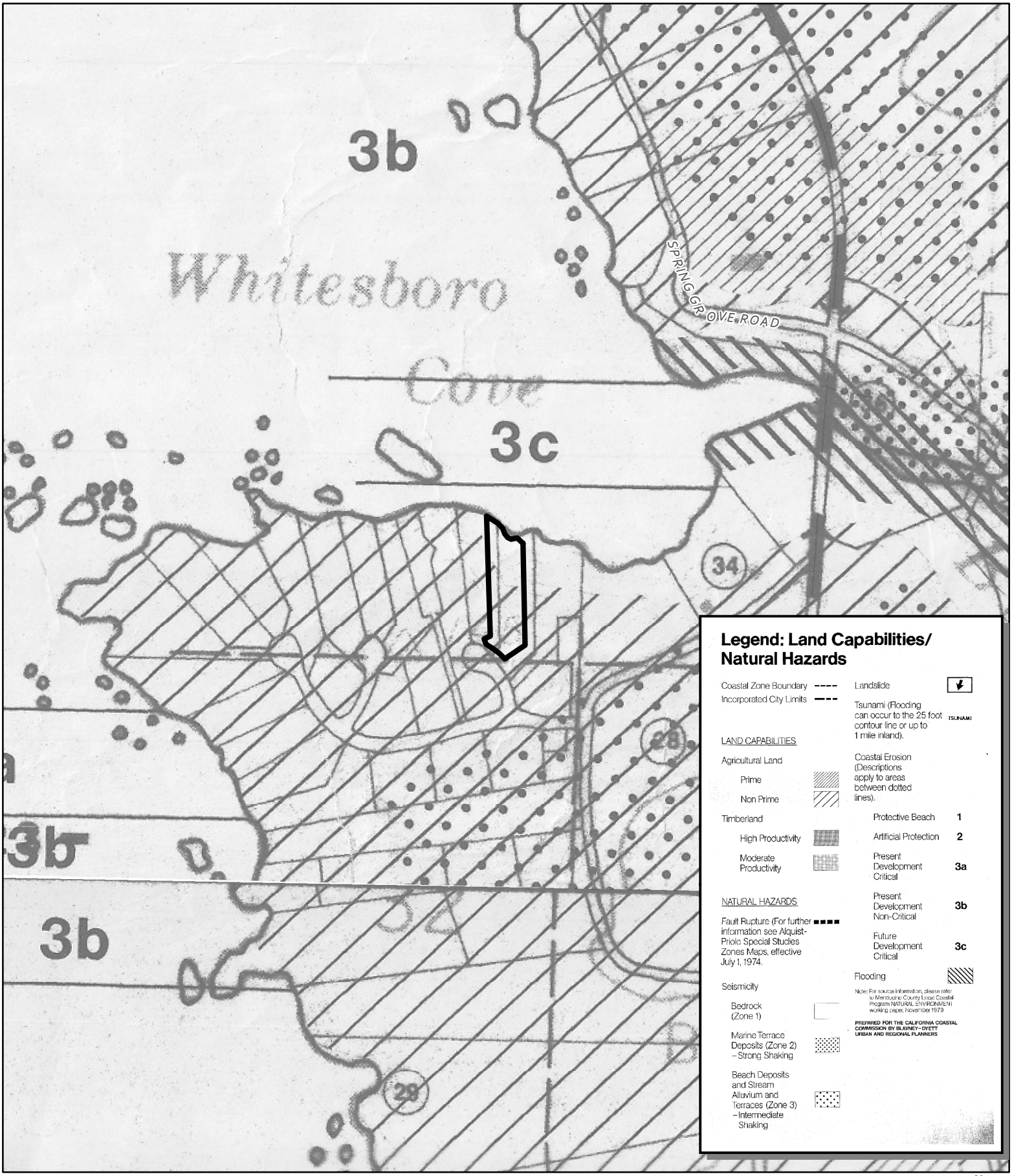
CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

Public Roads

0 225 450 Feet
0 0.04 0.08 Miles

1:5,000

LCP HABITATS & RESOURCES

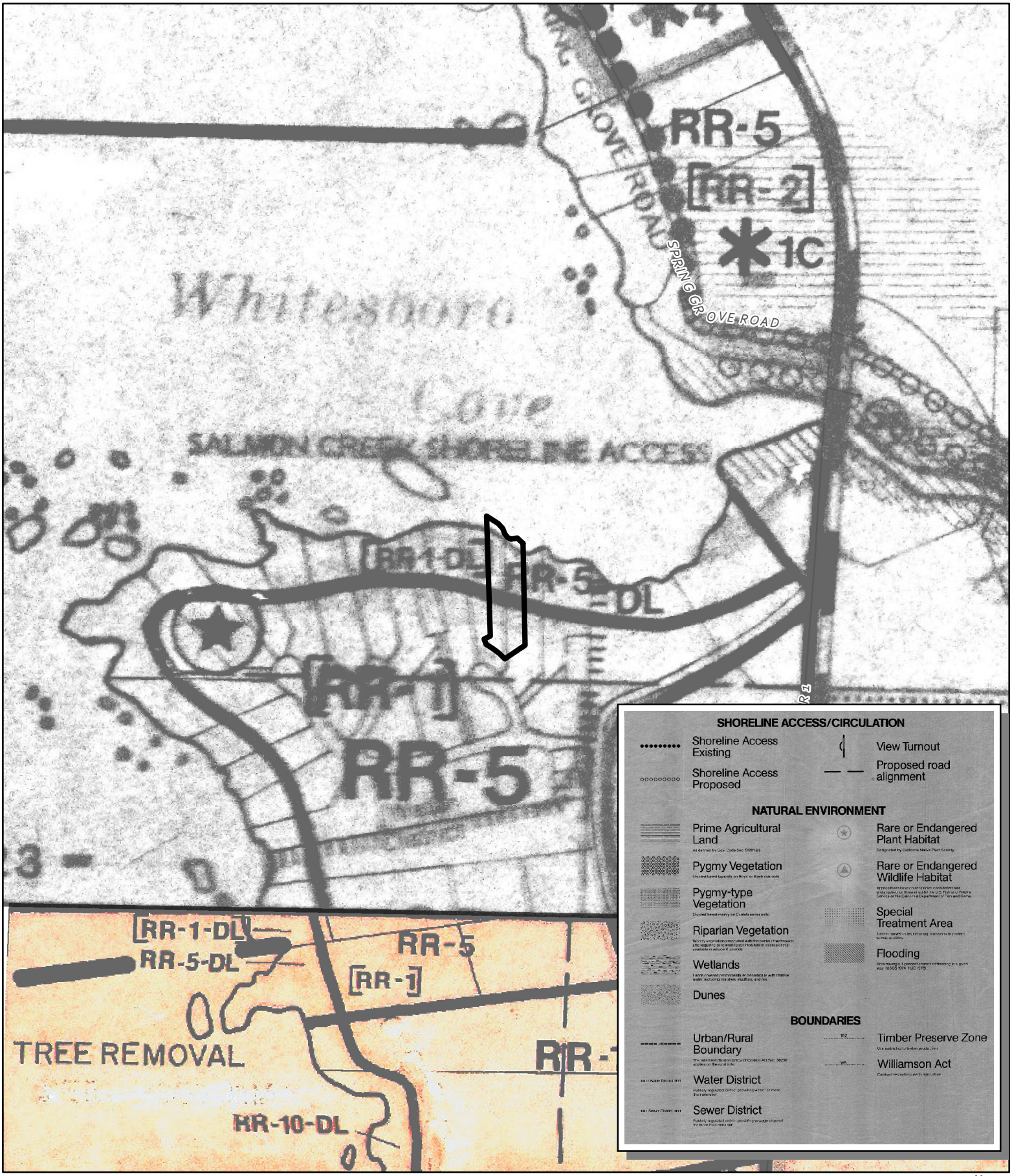


CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

Public Roads

0 225 450 Feet
0 0.04 0.08 Miles
N W E S
1:5,000

LCP LAND CAPABILITIES & NATURAL HAZARDS

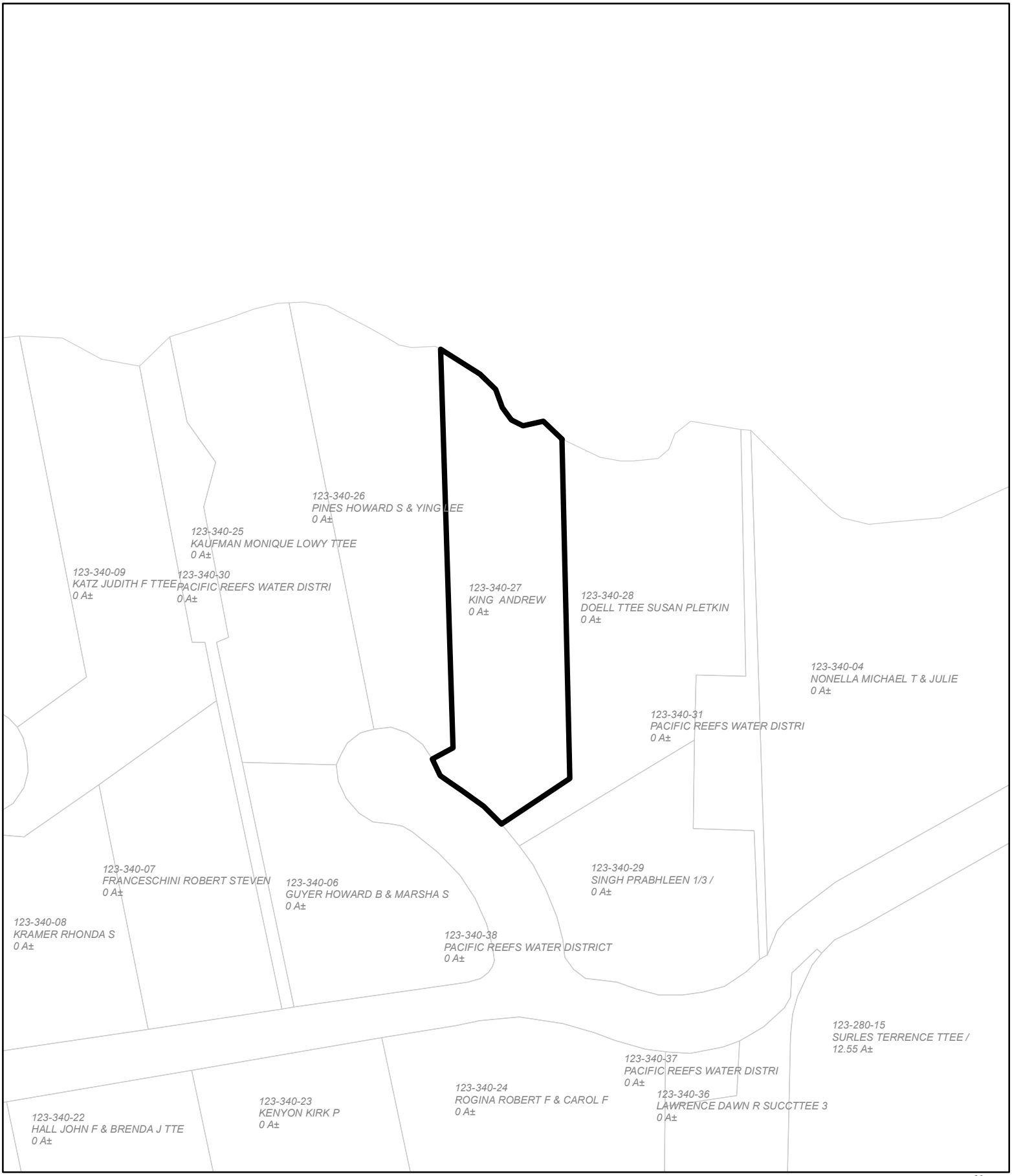


CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

Public Roads

0 225 450 Feet
0 0.04 0.08 Miles
N W E S
1:5,000

LCP LAND USE MAP 18: ALBION



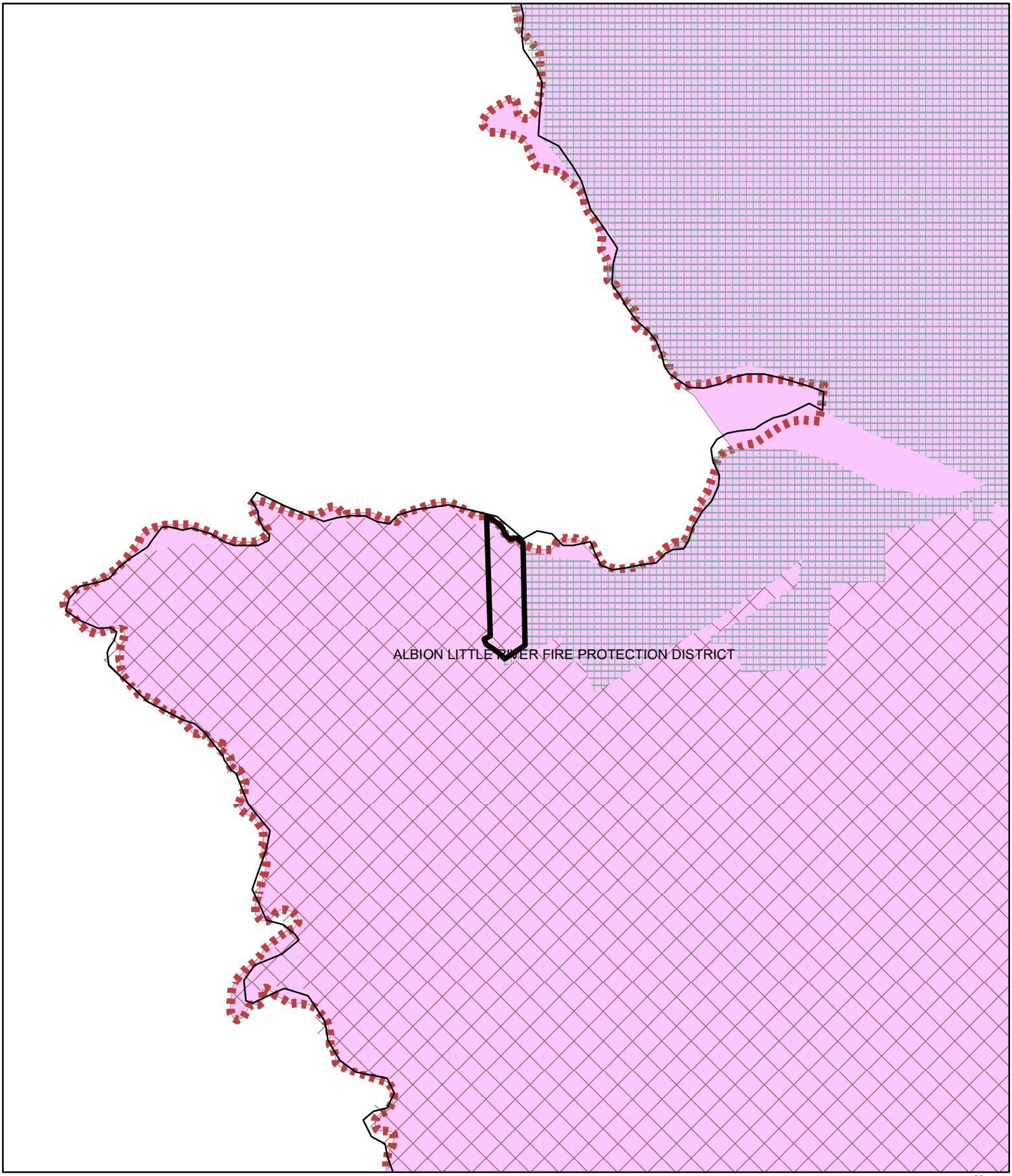
CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

Assessors Parcels

0 65 130 Feet
0 0.01 0.02 Miles
1:1,500

N W E S

ADJACENT PARCELS



CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

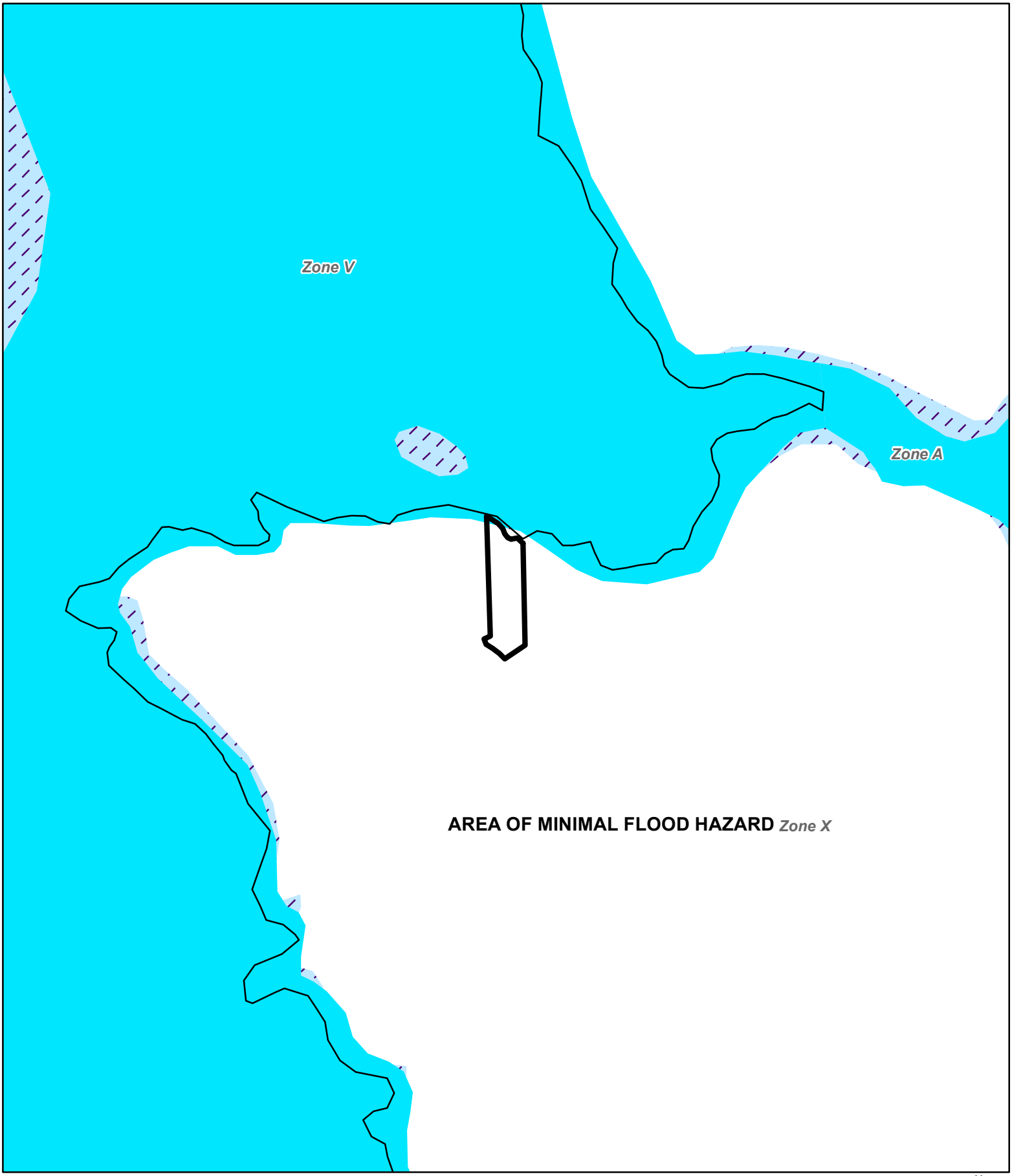
High Fire Hazard
Moderate Fire Hazard
County Fire Districts

0 225 450 Feet
0 0.04 0.08 Miles

N W E S

1:5,000

FIRE HAZARD ZONES & RESPONSIBILITY AREAS
STATE RESPONSIBILITY AREA



CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

1% Annual Chance Flood Hazard

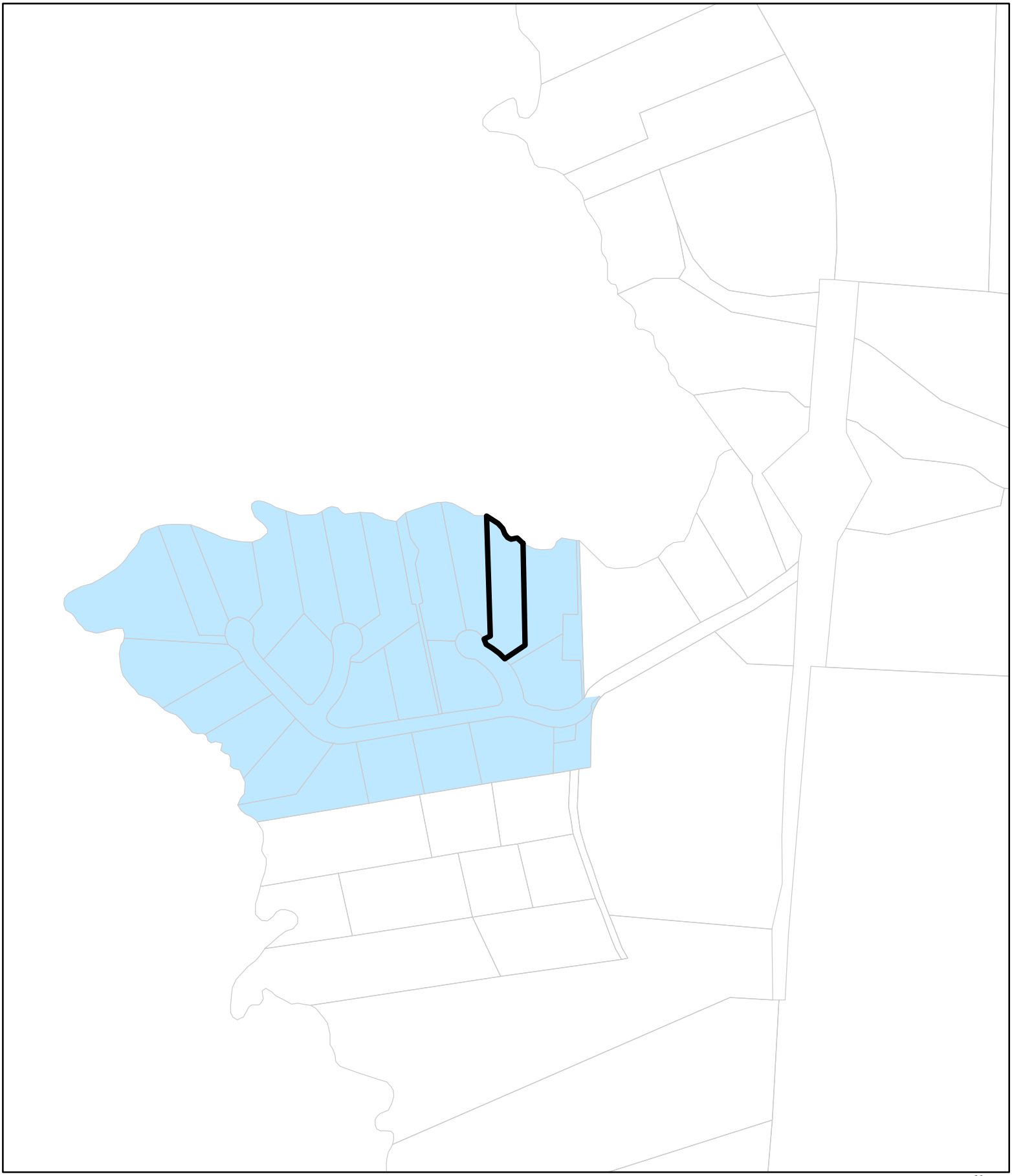
Tsunami Inundation Zones

0 225 450 Feet
0 0.04 0.08 Miles

N W E S

1:5,000

FLOOD & TSUNAMI INUNDATION ZONES



CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

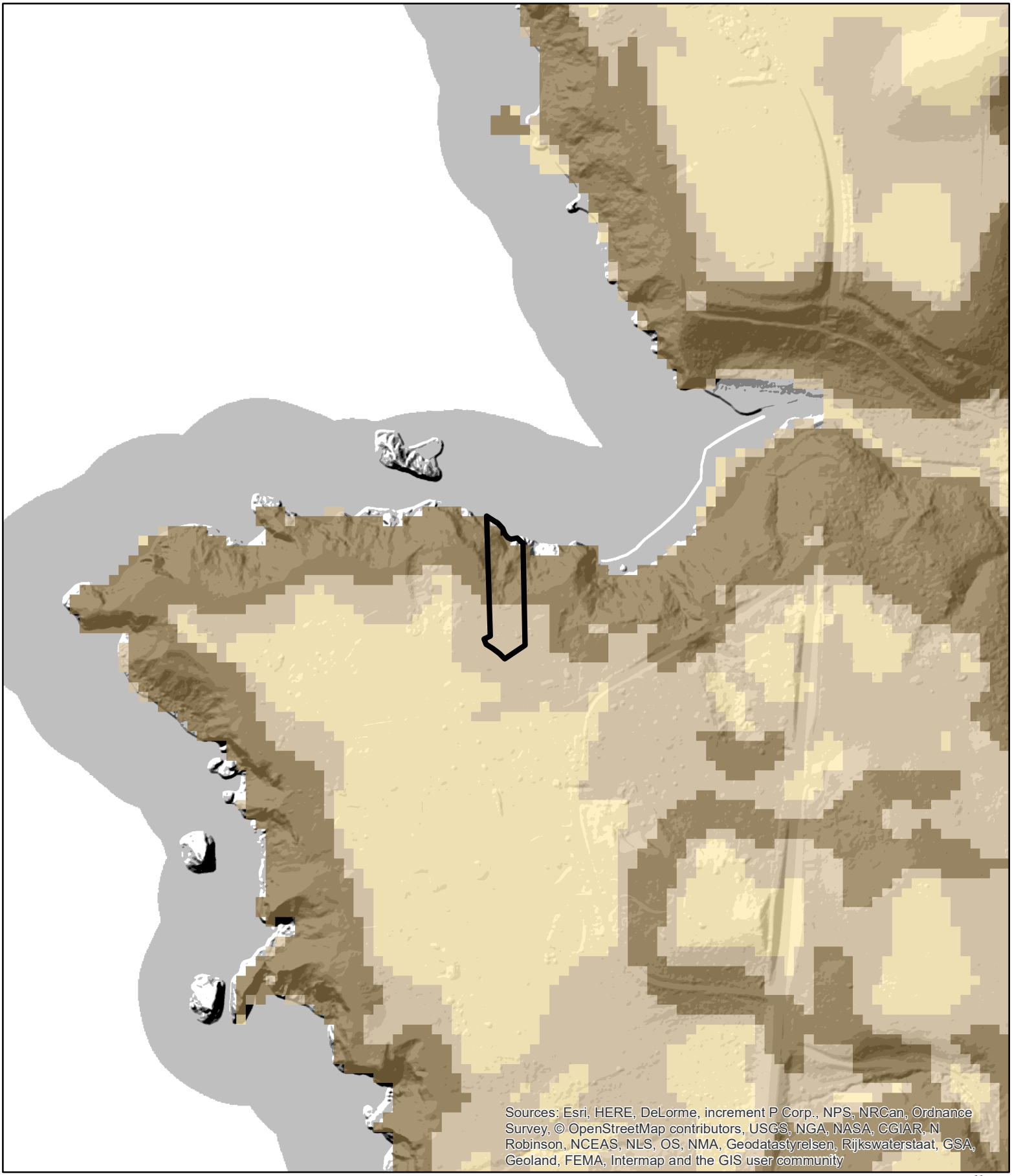
Assessors Parcels
County Water Districts

0 225 450 Feet
0 0.04 0.08 Miles

N
W E
S

1:5,000

WATER DISTRICT



CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

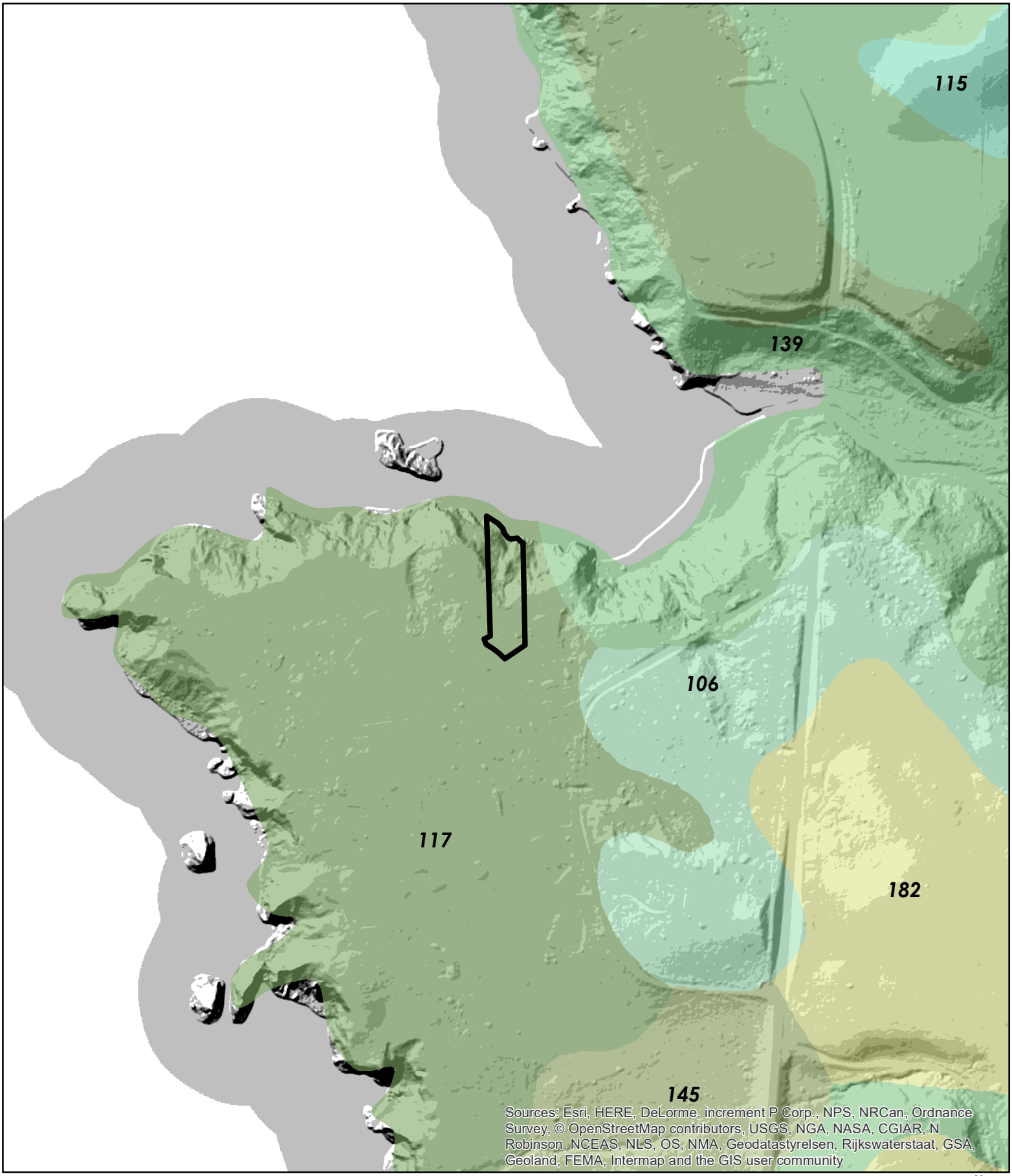
0° - 14°
15° - 32°
33° - 72°

0 225 450 Feet
0 0.04 0.08 Miles

N
W E
S

1:5,000

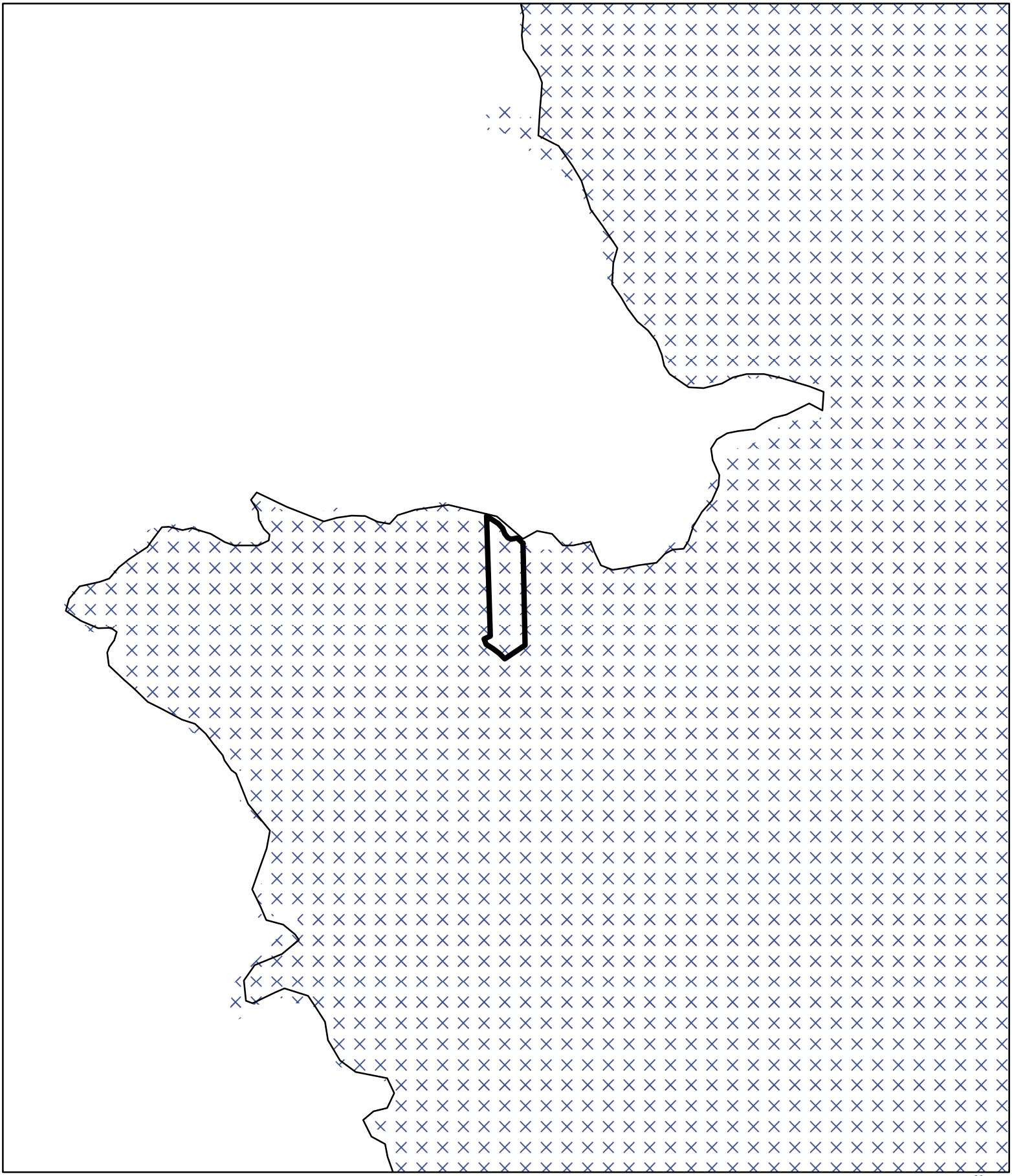
ESTIMATED SLOPE



CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

0 225 450 Feet
0 0.04 0.08 Miles
N W E S
1:5,000

WESTERN SOIL CLASSIFICATIONS



CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

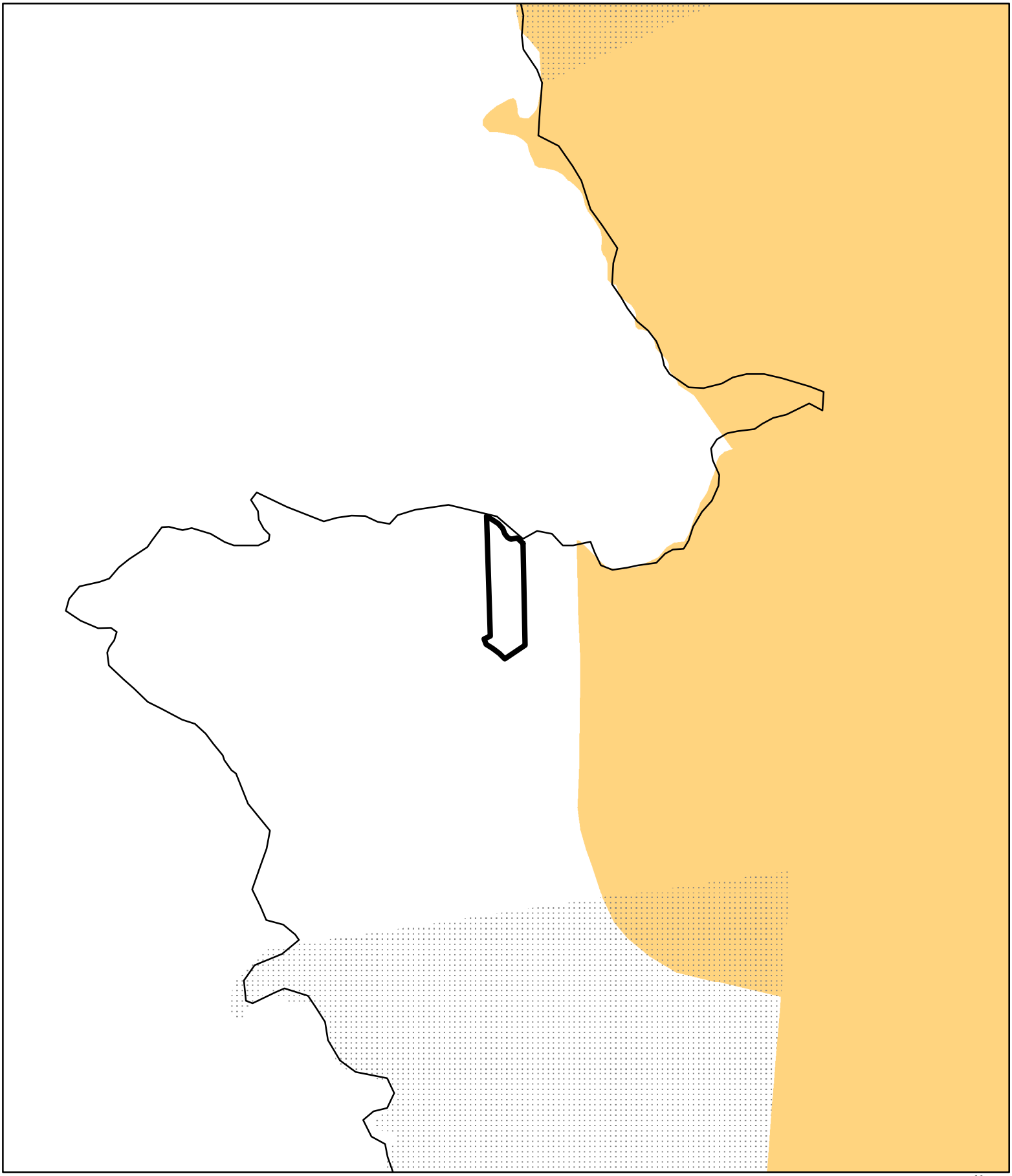
Critical Water Resources

0 225 450 Feet
0 0.04 0.08 Miles

N
W E
S

1:5,000

COASTAL GROUND WATER RESOURCES



CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

Tree Removal Area

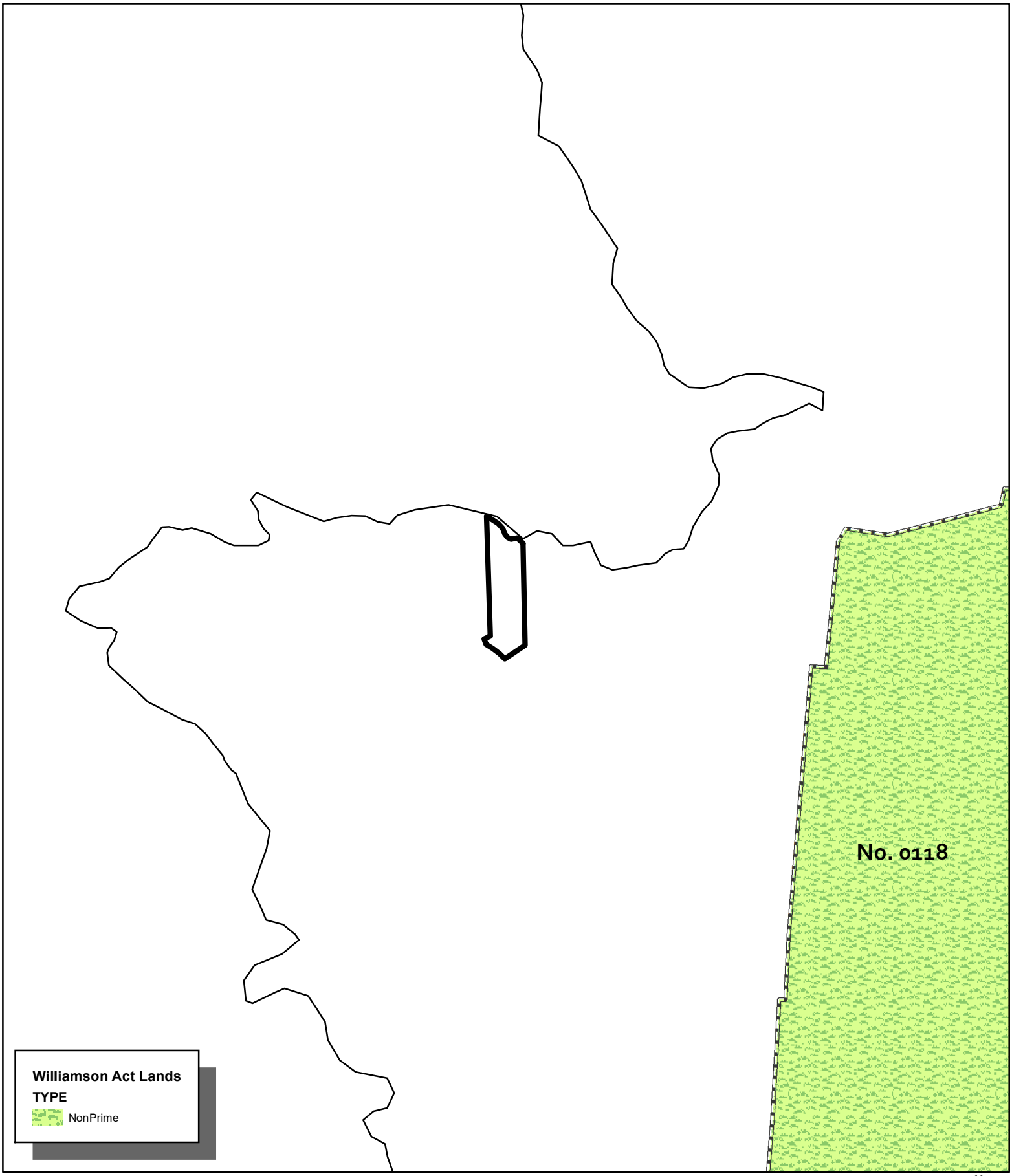
Highly Scenic Area

0 225 450 Feet
0 0.04 0.08 Miles

N
W E
S

1:5,000

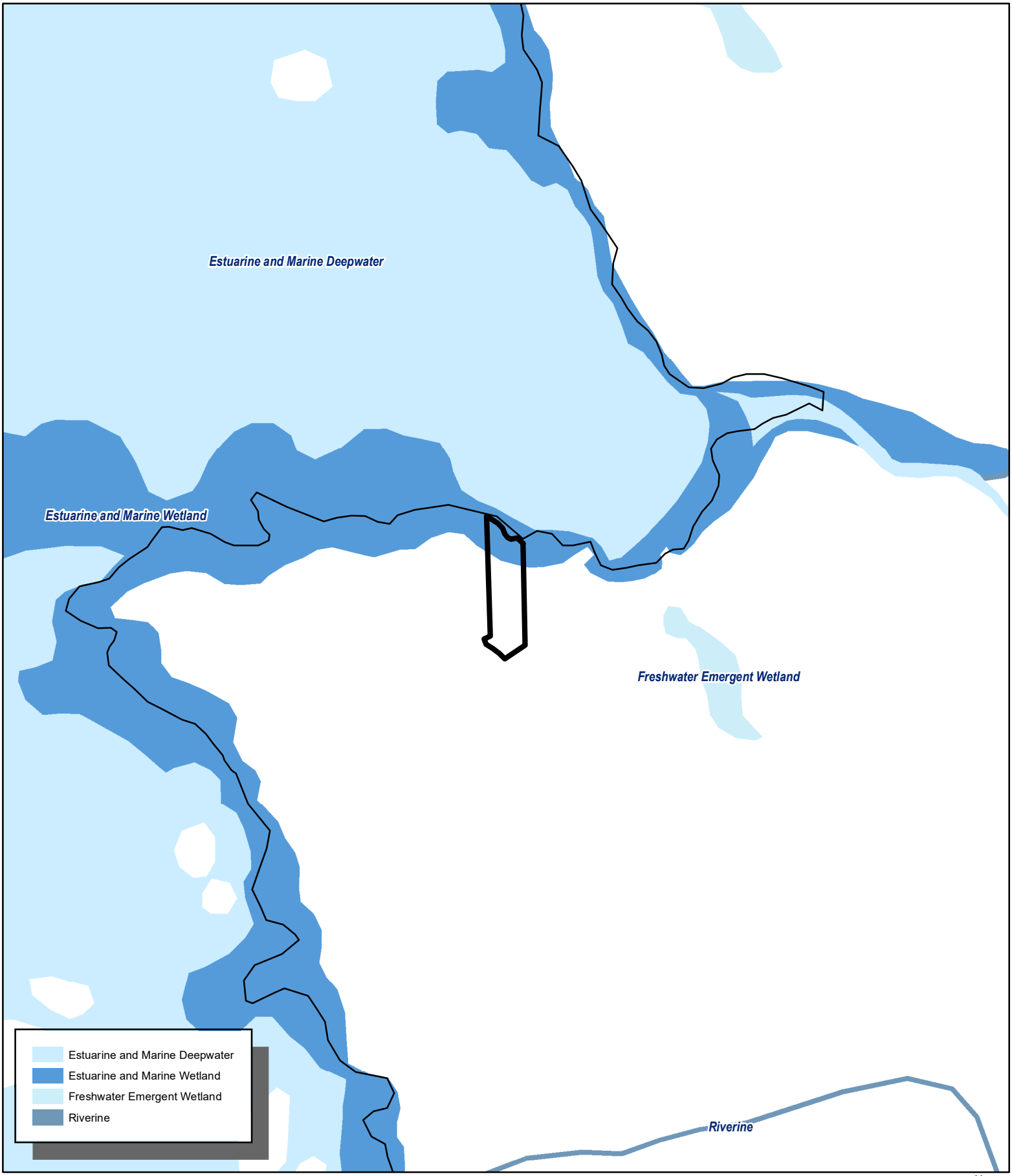
HIGHLY SCENIC & TREE REMOVAL AREAS



CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

0 225 450 Feet
0 0.04 0.08 Miles
N W E S
1:5,000

WILLIAMSON ACT



CASE: CDP 2023-0029
OWNER: KING, Andrew & MYUNG, JaeEun
APN: 123-340-27
APLCT: Andrew King & JaeEun Myung
AGENT: Meghan Durbin, Wynn Planning
ADDRESS: 2731 Seaside Ct., Albion

0 225 450 Feet
0 0.04 0.08 Miles
N W E S
1:5,000

WETLANDS

PRWD

Pacific Reefs Water District
PO Box 314
Albion, CA 95410

May 4, 2022

Re: 2731 Seaside Court, Albion, CA 95410

To whom it may concern:

Pacific Reefs property owners have a right to the PRWD water system for residential water supply, provided all fees associated with the hook up are paid to the District prior to hook up.

Currently the one-time fee for water hook up is $1500. There is also a road maintenance fee of $1000. Both must be paid prior to construction.

Sincerely,

Robert Cutler

Robert Cutler
Board President
Pacific Reefs Water District
PO Box 314
Albion, CA 95410

BIOLOGICAL SCOPING, WETLAND DELINEATION, BEHRENS' SILVERSPOT BUTTERFLY SURVEY & BOTANICAL SURVEY REPORT

for

2731 Seaside Ct
Albion, CA 95410
APN 123-340-27
Mendocino County

Property Owner:

Andy King
3235 Roswell Rd, NE #705
Atlanta, GA 30305

Report Prepared By:

Asa Spade, Senior Biologist
Nicole Bejar, Biologist

July 20, 2023

Wynn Coastal Planning & Biology
703 North Main Street, Fort Bragg CA 95437
ph: 707-964-2537 fx: 707-964-2622
www.WCPlan.com

Table of Contents

1. PROJECT SUMMARY

A biological survey, wetland delineation, and Behrens' silverspot butterfly survey was conducted on parcel APN 123-340-27-00 by Wynn Coastal Planning & Biology (WCPB) to locate potential Environmentally Sensitive Habitat Areas (ESHAs) - special status plants and communities, wetlands and riparian areas, and special status animals and/or their habitats and to determine if they would be directly or indirectly impacted by the proposed development. The proposed development consists of a single-family residence with decks, a courtyard and attached garage. Associated development includes installing and connecting to septic system and installing a gravel driveway.

The study area (**Figure 1**) is located one mile to the south of Albion and 8.2 miles south of Mendocino. Located on a bluff top, the 1.1 acre property is accessed from CA-1 by proceeding south one mile from the town of Albion, turning west onto Pacific Reefs Rd, and then north onto Seaside Ct. The property is located within the Pacific Reefs subdivision and is surrounded by residential development and the Pacific Ocean.

WRA, Inc. biologist, Rhiannon Korhummel, conducted a preliminary biological scoping survey on February 16, 2022. WCPB staff biologists conducted floristic and ESHA surveys on April 5, May 31, and August 5, 12, 19, & 26, 2022, for a total of approximately 12.5 person hours. Two types of presumed ESHA were identified within the study area according to the definitions by the California Coastal Act (CCA) and Mendocino County Local Coastal Plan (LCP) (**Figure 2**).

> **Special Status Plant ESHA -** One species of special status plants was identified in the study area - **Mendocino coast paintbrush** (*Castilleja mendocinensis* CRPR 1B.2).
>
> **Plant Community ESHA** – Two special status plant communities were identified on the property: **salal – berry brambles (G3?S3?)** and **pacific reedgrass meadow (G4S2).**

This analysis has been performed by WCPB, and is the culmination of our professional opinion, research, and data collection. The County of Mendocino (County), California Department of Fish and Wildlife (CDFW), and U.S. Fish and Wildlife Service (USFWS) should also be consulted regarding this project to obtain all necessary permits and obtain their concurrence with our findings and recommendations, and to make recommendations of their own, including concurrence of the boundaries of the sensitive areas and appropriate avoidance and protective measures.

CLIENT: King
APN: 123-340-27-00
ADDRESS: 2731 Seaside Ct.
Albion, CA

Location Map

Figure 1. Location of King parcel.

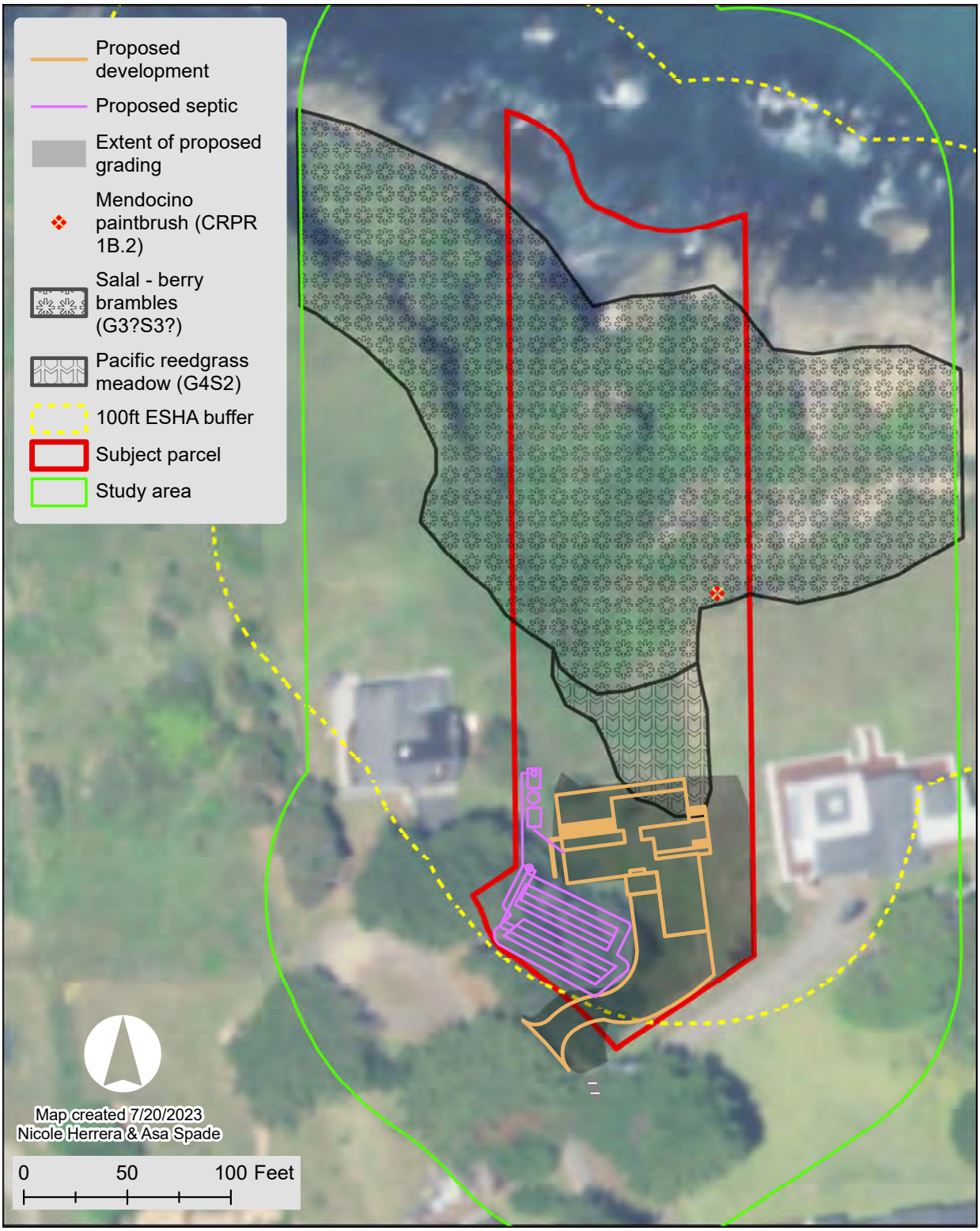


Figure 2. Presumed Environmentally Sensitive Habitat Areas (ESHAs) identified in the study area with 50ft and 100ft buffers , and the proposed development depicted.

2. PROJECT DESCRIPTION

Proposed development is to build a single-family residence with decks, a courtyard and attached garage. Associated development includes installing and connecting to septic system and installing a gravel driveway. **Figure 2** shows the footprint of the proposed development.

3. STUDY AREA DESCRIPTION

3.1. General Site Description

The parcel is 1.1 acres in size and is located on a bluff top southwest of Albion. The property is located within the Pacific Reefs subdivision and is surrounded by residential development and the Pacific Ocean. The elevation of the relatively flat terrace on the southern edge of the parcel is approximately 150ft above sea level and the property steeply slopes down to the Pacific Ocean midway through the parcel.

3.2. Land-Use History

A T-Sheet map produced in 1872 (**Figure 3**) shows that the parcel was an undeveloped grassland or shrubland during this time period. The mouth of Salmon Creek had a wharf installed which presumably was used to load timber onto ships. An aerial photo from 1998 (**Figure 4**) shows that the study area has stayed relatively the same over the last couple of decades. The tree canopy of the planted Monterey pine and Monterey cypress trees has grown overtime. The adjacent houses to the east and west were already built in 1998.

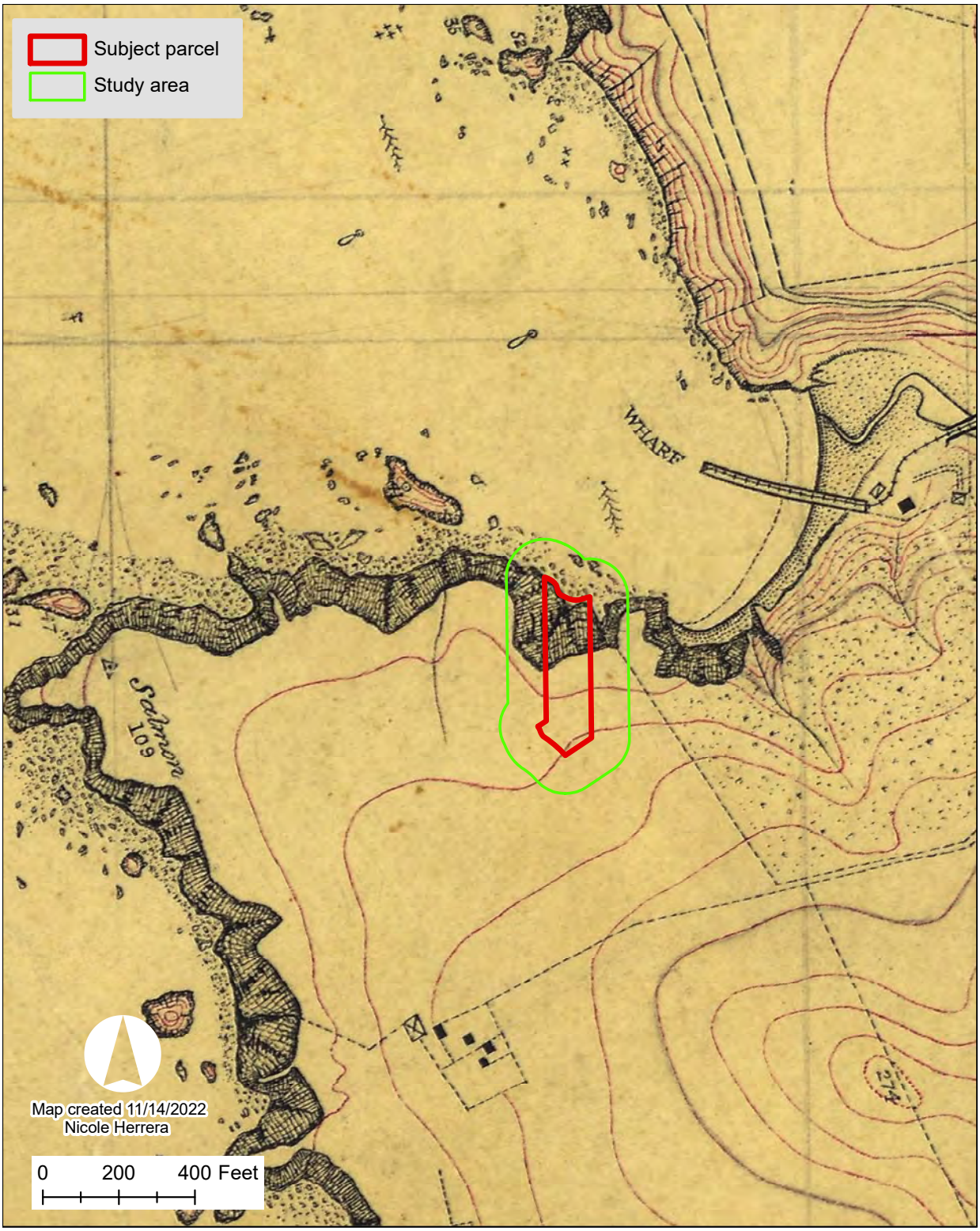


Figure 3. Historical T-sheet map dated 1872 with subject parcel and study area roughly overlaid.

Figure 4. 1998 aerial imagery with subject parcel and study area roughly overlaid.

3.3. Topography and Soils

The elevation of the study area ranges from approximately 0-150 feet above sea level. One type of soil has been mapped by the Natural Resource Conservation Service in the study area - Cabrillo-Heeser complex, 0 to 5% slopes. The Cabrillo-Heeser complex 0 to 5% slopes soil map unit occurs on marine terraces. According to Soil Survey of Mendocino County, Wester Part: “The vegetation is mainly perennial grasses and forbs.” “This unit is about 50 percent Cabrillo sandy loam and 30 percent Heeser sandy loam. The Cabrillo and Heeser soils occur as areas so intricately intermingled that it was not practical to map them separately at the scale used.” “The Cabrillo soil is very deep and is somewhat poorly drained. It formed in marine sediments.” “The effective rooting depth is limited by saturation for brief or long periods following episodes of heavy rain from December through April.” (Rittiman 2006) This soil complex has slow permeability and is listed on the hydric soils list due to the inclusion of Tropaquepts soils, which make up 3% of the complex (USDA Natural Resource Conservation Service, 2001; **Appendix A**). It should be noted that when a given soil is listed on the National Hydric Soils List as a hydric soil, that does not necessarily mean a wetland is present. Soil complexes are mapped at a coarse resolution and contain a number of components, any one of which may or may not be hydric, and may or may not be present in the particular mapped location.

3.4. Climate and Hydrology

The Mendocino Coast has a Mediterranean climate with average annual precipitation of 40.24 inches (WRCC, Station Fort Bragg 5N, average for years 1895-2016), with the majority of rain occurring in winter months (November through March).

The USFWS National Wetlands Inventory was consulted and shows an estuarine and marine wetland and estuarine and marine deepwater in the northern portion of the study area due to the proximity of the Pacific Ocean. No wetlands were mapped within the flat, buildable area of the property. Ground surveys and a wetland delineation confirmed that no wetlands are present on the property (**Appendix B**).

3.5. Vegetation and Natural Communities

The bluff top is vegetated by coyote brush scrub, **Pacific reedgrass meadow**, common velvet grass – sweet vernal grass meadows, and prostrate cape weed. At the break in slope down to the beach the vegetation is best classified as **salal – berry brambles**. Monterey pine and Monterey cypress trees are present along the southern edge of the study area (**Figure 5**). **Mendocino coast paintbrush** was observed on the bluff edge among the salal – berry brambles.

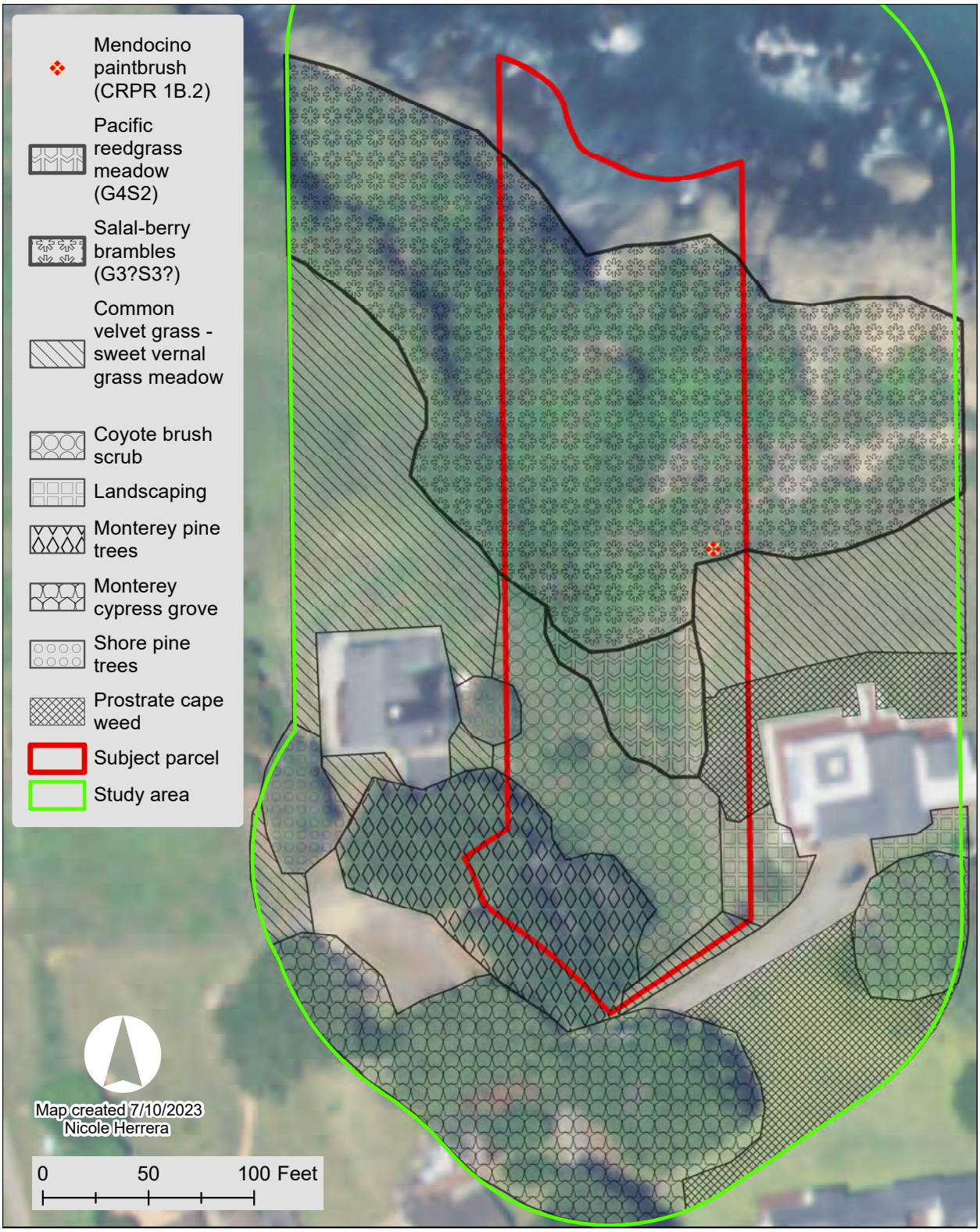


Figure 5. Plant communities and vegetation map.

3.6. Adjacent Lands
Lands surrounding the study area include rural residential development and the Pacific Ocean.

3.7. Existing Development
The parcel is currently undeveloped. It is presumed that the neighbor installed pillars along the south eastern property boundary to mark their driveway at some time in the past, but the pillars have since been removed.

4. SURVEY METHODOLOGY

4.1. Scoping Tables
Scoping tables were created for the special-status plant species and wildlife with the potential to occur in the study area by reviewing the most up-to-date species lists for the California Department of Fish and Wildlife (CDFW), California Natural Diversity Database (CNDDB) and the California Native Plant Society (CNPS).

For purposes of this evaluation, special-status plant species are vascular plants that are (1) designated as rare, threatened, or endangered by the state or federal governments; or (2) are proposed for rare, threatened, or endangered status; and/or (3) are state or federal candidate species, and/or (4) considered species of concern by the USFWS and/or (5) are included on the California Rare Plant Rank (CRPR) List 1A, 1B, & 2.

A list was created of rare flora and fauna species recorded in the California Natural Diversity Database (CNDDB) within a 1-mile radius of the study area (**Figure 6**). The CNDDB is a database consisting of historical observations of special-status plant species, wildlife species, and natural plant communities. CNDDB was used to help compile a list of special status plants and animals with potential to occur in the study area. This list was not limited to species presented in the maps, it includes all species indicated by a search of all quads with similar geology, habitats, and vegetation to those found in the project area. Because the CNDDB is limited to reported sightings, it is not a comprehensive list of plant species that may occur in a particular area. However, it is useful in refining the list of special-status plant species that have the potential to occur on a particular site.

Review of CNDDB maps should never be the exclusive method of determining if special status resources are or are not present. According to CNDDB's "key fact" page "it is a positive detection database. Records in the database exist only where species were detected. This means there is a bias in the database towards locations that have had more development pressures, and thus more survey work. Places that are empty or have limited information in the database often signify that little survey work has been done there. You cannot imply that there is less diversity in these places due to lack of information. There are no organized inventory or survey efforts designed specifically to populate the database."

A database search was performed using the CNPS *Electronic Inventory*, which allows users to query the *Inventory of Rare and Endangered Plants of California* using a set of search criteria (e.g., quad name, habitat type). A target list of special-status plant species with the potential to occur on the site was developed through interpretation of the CNDDB and CNPS query results. The biological scoping tables with special status resources potential occurrences in the study area are presented in **Appendix C: Tables 1, 2, and 3.** While directed by query results, surveys were not restricted only to those species indicated by this literature review. Field surveys and subsequent reporting were comprehensive and floristic in nature.

Additional information, (e.g. morphological characteristics, range, habitat and bloom period) was collected for each of the special-status plant species that had the potential to occur within the study area. WCPB staff botanists reviewed these characteristics for each of the plants on the target list prior to initiating fieldwork.

The botanical survey of the study area was conducted primarily adhering to the protocol described by

the California Department of Fish and Wildlife in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (2018).* Plant communities adjacent to the proposed development were further analyzed using the *CDFW-CNPS Protocol for the Combined Vegetation Rapid Assessment and Relevé Field Form (2019)(***Appendix D**).

Additional database review was conducted to assess the potential for wetlands to occur in the area prior to field work. Aerial photography was assessed for features with "wet" characteristics and the Inventory of National Wetlands database was viewed with the subject parcel boundaries to see if any predetermined wetlands occur in the study area.

4.2. Field Surveys

WRA, Inc. biologist, Rhiannon Korhummel, conducted a preliminary biological scoping survey on February 16, 2022. WCPB staff biologists conducted surveys on April 5, May 31, and August 5, 12, 19, & 26, 2022, for a total of approximately 12.5 person hours, to compile a full floristic list of plants occurring in the study area and to identify any rare resources having the potential to meet the LCP ESHA definitions. To ensure potential special status plants were evident and identifiable, offsite **reference plant populations** were visited prior to the project field surveys. Verified offsite reference site plants observed by WCPB staff during the 2022 floristic seasons included: pink sand verbena (*Abronia umbellata* var. *beviflora),* Blasdale's bent grass *(Agrostis blasdalei*), pygmy manzanita (*Arctostaphylos nummularia* ssp. *mendocinoensis*), Point Reyes blennosperma (*Blennosperma nanum* var*. robustum*), Bolander's reed grass (*Calamagrostis bolanderi*), coastal bluff morning glory (*Calystegia purpurata* ssp. *saxicola*), swamp harebell (*Campanula californica*), California sedge (*Carex californica*), Lyngbye's sedge (*C. lyngbyei*), deceiving sedge (*C. saliniformis*), Mendocino coast paintbrush (*Castilleja mendocinensis*), Point Reyes ceanothus (*Ceanothus gloriosus var. gloriosus*), Howell's spineflower (*Chorizanthe howellii*), pacific golden saxifrage (*Chrysosplenium glechomifolium*), round-headed Chinese-houses (*Collinsia corymbosa*), Oregon goldthread (*Coptis laciniata*), western bunchberry (*Cornus unalaschkensis*) supple daisy (*Erigeron supplex*), headland wallflower (*Erysimum concinnum*), Menzies' wallflower (*E. menziesii*), Pacific blue field gilia (*Gilia capitata* ssp. *pacifica*), hairy blue field gilia (*Gilia capitata* ssp. *tomentosa*) manyleaf gilia (*G. millefoliata*), short-leaved evax (*Hesperevax sparsiflora* var. *brevifolia*), Mendocino cypress (*Hesperocyparis pygmaea*), Point Reyes horkelia (*Horkelia marinensis*), thin-lobed horkelia (*H. tenuiloba*), harlequin lotus (*Hosackia gracilis*), hair leaved rush (*Juncus supiniformis*), perennial goldfields (*Lasthenia californica* ssp*. macrantha*), coast lily (*Lilium maritimum*), leafy Bishop's cap (*Mitellastra caulescens*), Bolander pine (*Pinus contorta* ssp. *bolanderi*), California pinefoot (*Pityopus californicus*), nodding-semaphore grass (*Pleuropogon refractus*), white beaked rush (*Rhynchospora alba*), great burnet (*Sanguisorba officinalis*), Point Reyes sidalcea (*Sidalcea calycosa* ssp. *rhizomata*), Maple-leaved checkerbloom (*S. malachroides*), purple stemmed checkerbloom (*S. malviflora ssp. purpurea*), corn lily *(Veratrum fimbriatum*), and western dog violet (*Viola adunca*).

All identifiable plant species located during the surveys were identified to the lowest taxonomic level necessary to determine the presence of special status plant species listed in **Table 1 (Appendix C**). *The Jepson Manual: Vascular Plants of California* (Baldwin 2012) was used to determine the taxonomic nomenclature. *A Manual of California Vegetation Second Edition* (Sawyer 2009), *Classification of the Vegetation Alliances and Associations of Sonoma County, CA, V. 2* (Klein 2015) and the *California Natural Community List* (CDFW 2021) were used to classify and describe representative plant communities present. A potential for false negative survey results exists. For example, a rare plant could be eaten by deer around the time when they would have been evident and identifiable and therefore not be detected during surveys. Some plants remain dormant and do not become evident and identifiable every year. Climatic conditions are different each year and may have unpredictable effects on the bloom windows of each species. Heavy rains, for example, may cause one species to bloom early and another species to bloom later than in normal years. Well timed site visits and frequent observations at known reference sites reduce the chance of error.

4.3. Wetland and Riparian Delineation

Wetland delineation field work began with examination of the topography and searching for surface hydrology and hydrophytic plants. Further analyses were performed at five sample points where

wetland soils, hydrophytic vegetation, and hydrology were inspected according to the US Army Corp of Engineers (ACOE) methodology for: Western Mountains, Valleys, and Coast Region (Version 2.0). Wetland data sheets for these sample points are presented in **Appendix D.** Sampling points are marked in the field with 24-inch wooden stakes with colored flagging and labeled in Sharpie marker. Locations of sampling points are depicted on the Wetland Delineation Map in **Figure 16**. The ACOE recognizes wetlands where hydrophytic vegetation, hydric soils, and hydrology are all present. In the California Coastal Zone, wetlands are recognized if any one of the three ACOE parameters (hydrophytic vegetation, hydric soils, or hydrology) is present. Wetlands reported and mapped in this report are Coastal Act wetlands and may or may not be Army Corps wetlands; a distinction is made where important.

4.4. Behren's Silverspot Butterfly Habitat Assessments and Surveys

The habitat assessment and surveys were based on the US Fish and Wildlife Service's (USFWS) Draft Guidelines for Habitat Assessments and Surveys for Behren's Silverspot Butterfly (*Speyeria zerene behrensii*), dated August 8, 2006, and Survey Protocol: Behrens Silverspot Butterfly (BSB), v1, July 2006. Habitat assessments are usually conducted between April 21 and June 14 but are dependent on weather conditions for the year western dog violet (*Viola adunca*) surveys are to be conducted. All areas within 100 meters of proposed activities, including ground or vegetation disturbance, or hydrologic disturbance, are surveyed for *Viola adunca*. All observed *Viola adunca* is counted and mapped (polygons with estimated populations for large patches), and the overall condition is noted (flowering, senescent, etc.). Any evidence of invertebrate foraging is noted.

Behren's silverspot butterfly surveys are conducted from July 20 to September 10 in any given year. Three complete surveys must be conducted in a single season, and each survey shall be separated by at least 6 days. At least two of the surveys must occur between August 5 and August 25. Wind conditions must be <10mph. Temperature must be at least 60 degrees F. Each survey must occur between 10am and 4pm, with no fog or rain. Percent cloud cover should be recorded. Time and environmental conditions at the start and end of each survey or transect are to be recorded. Name, observer, and qualifications, environmental conditions, survey method employed, and level of effort are recorded on data sheets for each survey. Depending on environmental conditions, the flight period for this butterfly is July through August and sometimes into early September. It can normally be observed in flight by late morning when temperatures are above 60˚F.

Surveys need to occur in potential habitat areas within 100 meters of any proposed project. Width of areas covered on transects should relate to the vegetation height and density. The exact numbers and locations of BSSBs observed are reported. Activities and behaviors are observed, such as foraging on any specific plants, direction of any movements, interactions with other species, etc. If Behren's Silverspot Butterfly is detected on first or second survey, remaining surveys may not be required per US Fish and Wildlife Service guidance. WCPB biologists Asa Spade and Nicole Herrera have attended Behren's silverspot butterfly identification and collection training with USFWS.

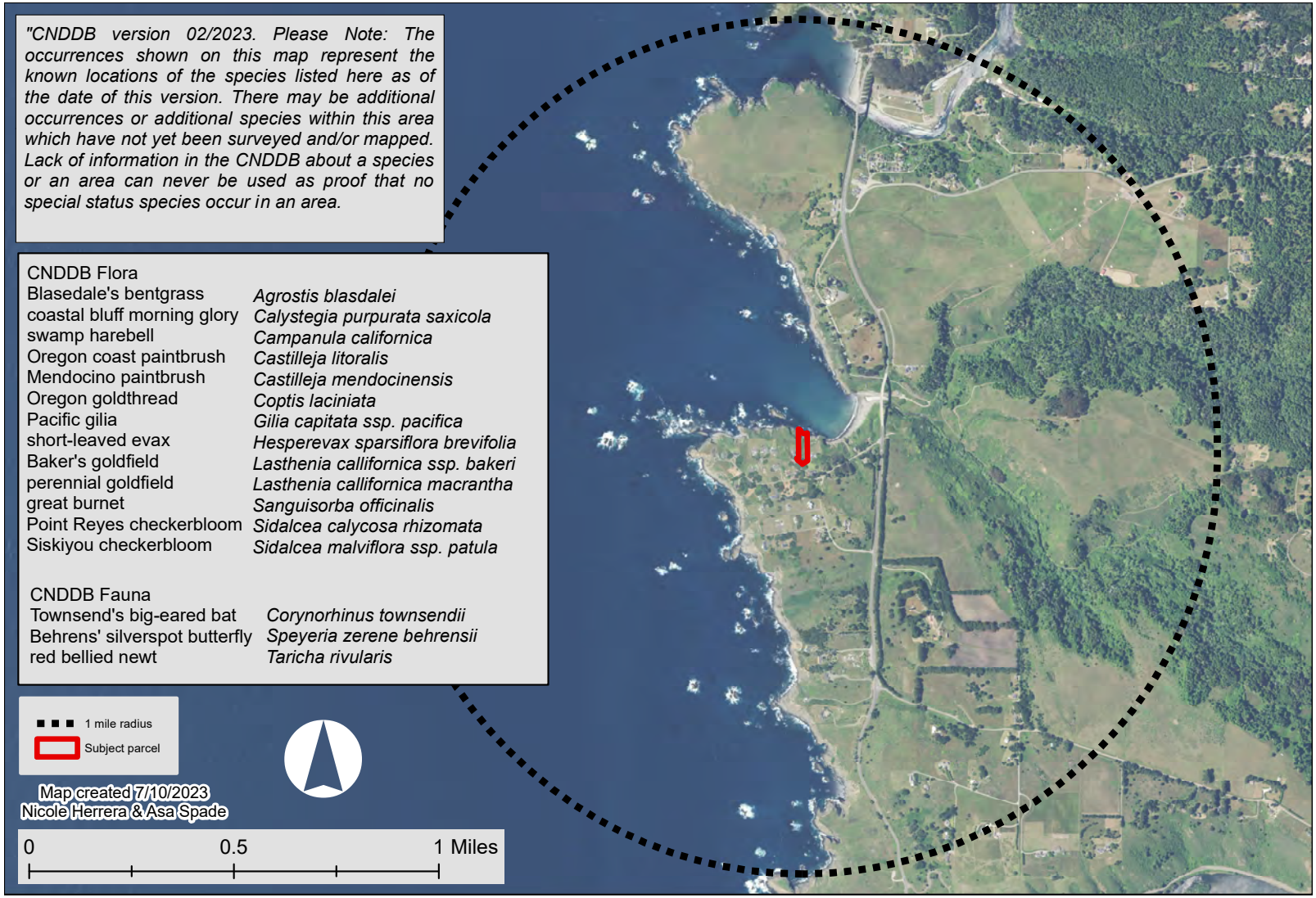


Figure 6. Rare flora and fauna reported to CDFW in the proximity of the study area and recorded in the CNDDB database.

5. SURVEY RESULTS

Biological field surveys were performed that identified the following: plants, plant communities, wetlands, special status animals and animal habitat in the study area.

5.1. Plants

The CDFW's California Native Diversity Database (CNDDB) BIOS, *Version 5* (2016), was used to inform the search on special status flora previously reported in the vicinity of the project area. Eighty-three species of herbs, grasses, sedges, rushes, ferns, shrubs, and trees were identified in the study area and are listed in **Appendix D**. One special status species, Mendocino coast paintbrush (*Castilleja mendocinensis*) was observed within the study area. Individual tree species such as Monterey cypress (*Hesperocyparis macrocarpa*) and shore pine (*Pinus contorta ssp. contorta*) were present around the study area. Ornamental landscaping was also observed on adjacent properties.

5.1.1. Mendocino coast paintbrush (*Castilleja mendocinensis CRPR 1B.2*)

Mendocino coast paintbrush (**Figure 7**) is a hemi-parasitic perennial herb in the broomrape family (Orobanchaceae) that generally occurs within coastal scrub and coastal bluff scrub habitat along the Mendocino County coast. At the project site it was observed in the northeastern portion of the study area on the north facing side of the bluff slope. It should be noted that another more common species (*Castilleja affinis* ssp. *affinis*) of coast paintbrush was also present on the subject parcel, within coyote brush scrubland habitat. The rare *C. mendocinensis* has more rounded semi-succulent leaves.

Figure 7. Mendocino coast paintbrush on the bluff face in the northeastern portion of the study area.

5.2. Plant Communities Observed

5.2.1. Salal – berry brambles (*Gaultheria shallon – Rubus sp.* Herbaceous Association) - presumed ESHA

Approximately halfway through the parcel there is a break in slope, and the northern half of the parcel slopes down to the Pacific Ocean. The vegetation along the bluff edge is thick brush with the absolute cover varying from 70-95%. The vegetation is this community is best classified as salal – berry brambles (**Figure 8**). This community is dominated by salal (*Gaultheria shallon*), California blackberry (*Rubus ursinus*), coast man-root (*Marah oregana*), and sword fern (*Polystichum munitum*). Other species present included wax myrtle (*Morella californica*), California wild rose (*Rosa californica*), western thimbleberry (*Rubus parviflorus*), coyote brush (*Baccharis pilularis*), poison oak (*Toxicodendron diversilobum*), seashore lupine (*Lupinus littoralis*), pacific reedgrass (*Calamagrostis nutkaensis*), stinging nettle (*Urtica dioica*), western bracken fern (*Pteridium aquilinum*), Douglas iris (*Iris douglasiana*), California mugwort (*Artemisia douglasiana*), Henderson's angelica (*Angelica hendersonii*), creeping bentgrass (*Agrostis stolonifera*), ripgut brome (*Bromus diandrus*), giant horsetail (*Equisetum telmateia*), cow parsnip (*Heracleum maximum*), California bee plant (*Scrophularia californica*), and common velvet grass (Holcus lanatus). Species present, but less abundant in this community included Mendocino coast paintbrush (*Castilleja mendocinensis*), bluff lettuce (*Dudleya farinosa*), yarrow (*Achillea millefolium*), alum root (*Heuchera macrantha*), licorice fern (*Polypodium glycyrrhiza*), and pacific stonecrop (*Sedum spathulifolium*). This association is listed as sensitive in CDFW's California Natural Community list and is therefore, is considered a presumed ESHA in this report

Figure 8. Salal – berry brambles along bluff edge.

5.2.2. Coyote brush scrub (*Baccharis pilularis* Shrubland Association G4)

Coyote brush scrub (**Figure 9**) was present in the center of the parcel. This plant community was characterized by the presence of coyote brush (*Baccharis pilularis*) at a density of from between 40% absolute cover to ~80% absolute cover. Other plant species observed in this community included ceanothus (*Ceanothus thyrsiflorus*), pacific reedgrass (*Calamagrostis nutkaensis*), daffodil (*Narcissus* spp.), English plantain (*Plantago lanceolata*), California blackberry (*Rubus ursinus*), sweet vernal grass (Anthoxanthum odoratum), coffeeberry (*Frangula californica*), iceplant (*Carpobrotus edulis*), yarrow (*Achillea millefolium*), rough hedgenettle (*Stachys rigida*), common sheep sorrel (*Rumex acetosella*), cutleaf geranium (*Geranium dissectum*), and western dog violet (*Viola adunca*). Approximately 50 western dog violet plants were observed throughout the coyote brush scrub.

Figure 9. Coyote brush scrub habitat.

5.2.3. Pacific reedgrass meadow (*Calamagrostis nutkaensis* Herbaceous Association) – Presumed ESHA

A patch dominated by pacific reedgrass (**Figure 10**) was present in between the coyote brush scrub and bluff edge. This patch was separated from the coyote brush scrub since coyote brush was <15% of the shrub cover in this area. Other species present included blueblossom (*Ceanothus thyrsiflorus*), California rose (*Rosa californica*), California blackberry (*Rubus ursinus*), common velvet grass (Holcus lanatus), sweet vernal grass (*Anthoxanthum odoratum*), rattlesnake grass (*Briza maxima*), maritime brome (*Bromus sitchensis* var. *carinatus*), coast manroot (*Marah oregana*), cow parsnip (*Heracleum maximum*), spring vetch (Vicia sativa), Henderson's angelica (*Angelica hendersonii*), western bracken fern (*Pteridium aquilinum*), bull thistle (*Cirsium vulgare*), English plantain (*Plantago lanceolata*), and cleavers (*Galium aparine*). This native grassland is listed as sensitive in CDFW's California Natural Community list and is therefore, is considered a presumed ESHA in this report.

Figure 10. Pacific reedgrass meadow.

5.2.4. Non-native Grassland (*Anthoxanthum odoratum – Holcus lanatus* Herbaceous Alliance, and *Briza maxima* Provisional Semi-Natural Association)

Non-native grassland was the mostly present along the edges of the subject parcel and on the neighboring parcels to the west and east. The non-native grassland is a mosaic of sweet vernal grass (*Anthoxanthum odoratum*) and common velvet grass (*Holcus lanatus*) (**Figure 11**). Other species present within the mosaic of non-native grassland habitat included: Douglas iris (*Iris douglasiana*), English plantain (*Plantago lanceolata*), tufted hairgrass (*Deschampsia cespitosa* spp*. holciformis*), maritime brome (*Bromus sitchensis* var*. maritimus*), prostrate capeweed (*Arctotheca prostrata*), yarrow (*Achillea millefolium*), daffodils (*Narcissus* spp.), petty spurge (*Euphorbia peplus*), spring vetch (*Vicia sativa*), western bracken fern (*Pteridium aquilinum*), California blackberry (*Rubus ursinus*), hairy cats ears (*Hypochaeris radicata*), California oatgrass (*Danthonia californica*), rattlesnake grass (*Briza maxima*), bird's foot trefoil (*Lotus corniculatus*), common sheep sorrel (*Rumex acetosella*), and Italian ryegrass (*Festuca perennis*).

Figure 11. Non-native grassland dominated by sweet vernal grass and common velvet grass.

5.2.5. Monterey pine grove (*Pinus radiata* Semi-Natural Association)

A small group of non-native Monterey pine trees (**Figure 12**) were present in the southern tip of the subject parcel. The understory was sparse (**Figure 13**) with a needle duff layer with few herbaceous plants popping through. Species observed in the understory included: chickweed (*Stellaria media*), coast manroot (*Marah oregana*), English plantain (*Plantago lanceolata*), miner's lettuce (*Claytonia perfoliata*), bull thistle (*Cirsium vulgare*), California blackberry (*Rubus ursinus*), Douglas iris (Iris douglasiana), and cow parsnip (*Heracleum maximum*).

Figure 12. Monterey pine trees.

Figure 13. Sparse understory of Monterey pine grove.

5.2.6. Monterey cypress grove (*Hesperocyparis macrocarpa* Semi-Natural Association)

Planted Monterey cypress (*Hesperocyparis macrocarpa*) trees (**Figure 14**) were observed off property in the southern portion of the study area. The understory of the Monterey cypress trees was either mowed non-native grassland or prostrate capeweed mats. These trees were presumably planted by a previous property owner as vegetative screening and/or a windbreak.

Figure 14. Monterey cypress trees behind Monterey pine trees.

5.2.7. Prostrate capeweed mats (*Arctotheca prostrata* Semi-Natural Association)

Invasive prostrate capeweed (*Arctotheca prostrata*) dominated the grassland on the adjacent parcels (**Figure 15**) to the south and east. The prostrate capeweed is encroaching onto the subject parcel towards the eastern side. This highly invasive plant outcompetes native vegetation and forms a thick monoculture where it takes over. The only other vegetation present in these areas was some invasive grasses occasionally poking through that mat.

Figure 15. Prostrate capeweed mats on adjacent parcel.

5.3. Wetland Delineation – (Coastal Act Wetland) presumed ESHA

On April 5, 2022, a routine level study of hydrology, soils, and vegetation indicators was conducted within the study area. The results were recorded from sampling points on data sheets (**Appendix D**) from the Regional Supplement to the Army Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). Locations of sampling points are depicted on the Wetland Delineation Map (**Figure 16**). The wetland hydrology, hydric soils, and hydrophytic vegetation indicators used to make wetland determinations are summarized below. Sampling points are marked in the field with 24-inch wooden stakes with colored flagging and labeled in a Sharpie marker. A 30-foot plot size was studied for trees present, a 20-foot radius for shrubs present, a 10-foot radius for herbs present, and a 10-foot radius for vines present. **Sample Point SP01 was determined by the surveyors to be upland** as no hydric soil, hydrology, or hydrophytic vegetation was observed. Protocol level sample points were only conducted in those areas that both showed a potential for being wetland and occurring in locations with the potential to affect the project proposal.

5.3.1. Sampling Point SP01 – Upland

This sample point was chosen due to the dominance of pacific reedgrass in the area. Dominant plant species at this sample point were Monterey pine (*Pinus radiata* UPL), coyote brush (*Baccharis pilularis* UPL), pacific reedgrass (*Calamagrostis nutkaensis* FACW), and sweet vernal grass (*Anthoxanthum odoratum* FACU). The dominance test was failed since less than 50% of the dominant species were OBL, FACW, or FAC. The hydrophytic vegetation parameter was not met. No wetland hydrology indicators and no hydric soil indicators were observed within the pit dug to 20-inches deep. As no wetland parameters were met, Sample Point SP01 was determined to be upland.

The location for sample point SP01 was chosen because it appeared to be the most likely to meet wetland parameters if wetland were indeed present. Since no wetland parameters were met, and all other adjacent areas displayed upland characteristics, no paired sample point or further investigation was needed to determine that wetland are not present.

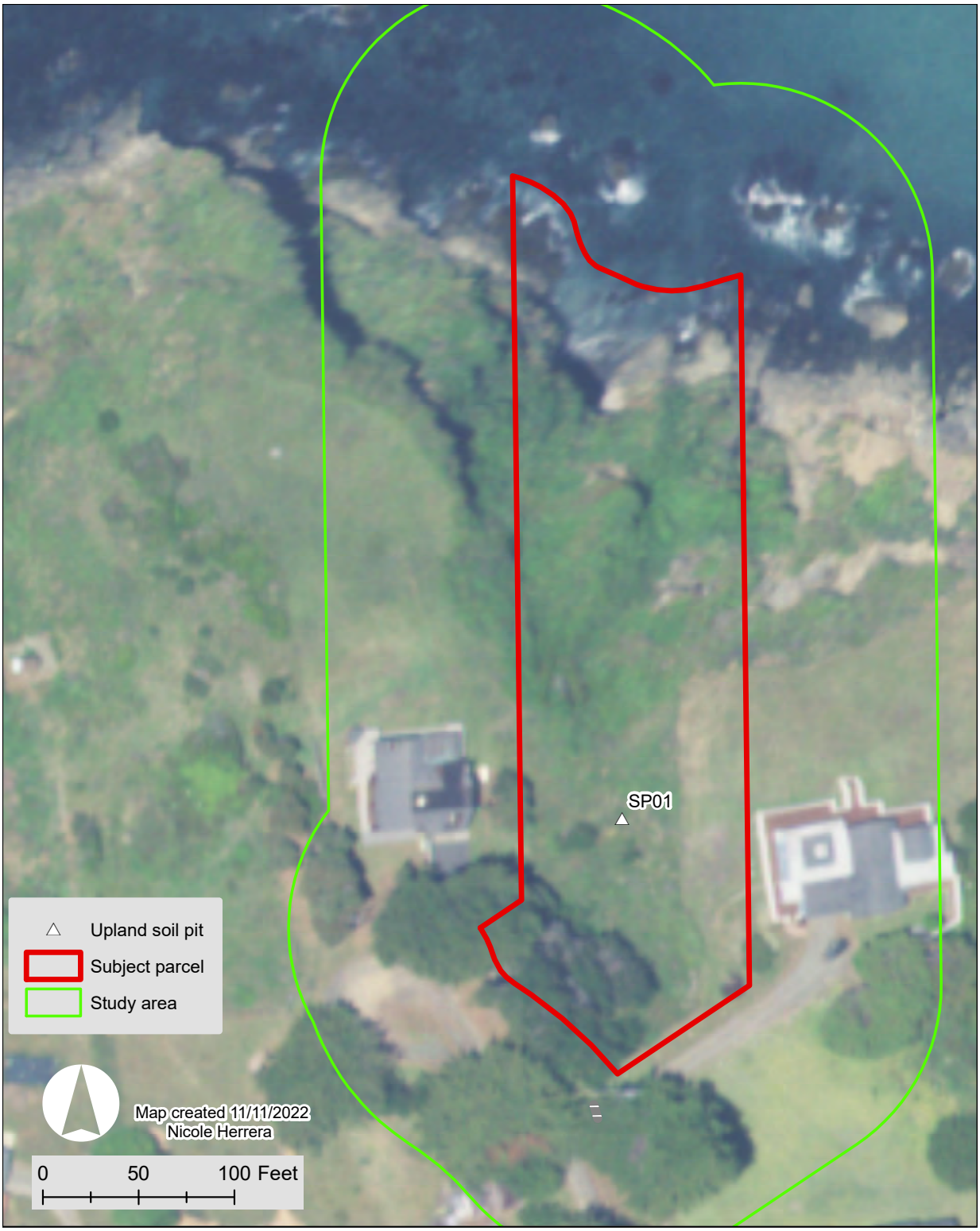


Figure 16. Wetland delineation map depicting the wetland sample point location. SP01 was determined to be upland so no further investigation was warranted.

5.4. Wildlife - Potential Occurrences

The California Department of Fish and Wildlife (CDFW) California Native Diversity Database (CNDDB) BIOS, Version 5 (2016), was used to inform the search on fauna previously reported in the vicinity of the project area (**Figure 6**). No special-status wildlife was observed during the field biological surveys. Suitable habitat for special status wildlife species was identified. Descriptions below are for wildlife species with moderate to high potential to occur, and for State or Federally Endangered or Threatened Species with potential to occur. A complete list of special status wildlife with the potential to occur at the project site can be found in **Table 3 of Appendix C**.

5.4.1. Invertebrates

5.4.1.1. Behrens' silverspot butterfly (*Speyeria zerene behrensii*) (G5T1 S1)

The historic range for the Behrens' silverspot butterfly (BSB) extended from near the village of Mendocino in Mendocino County south to near Salt Point State Park in Sonoma County. The current distribution is limited to a small number of sites near Salt Point State Park and just north of Point Arena. What is known about the life history of this species is based on studies of a closely related coastal subspecies, the Oregon silverspot butterfly (*Speyeria zerene hippolyta*). It is believed that the females lay their eggs in the dried debris of the western dog violet (*Viola adunca*), a small perennial, after it dies back in late summer. Western dog violet blooms from April to August and is the larval food plant for the Behrens' silverspot. The habitat for Behrens' silverspot is coastal prairie and its only food source is nectar, primarily from plants in the sunflower family (*Asteraceae*).

On April 5, 2022, WCPB biologists observed ~50 western dog violet plants (**Figure 17**) throughout the coyote brush scrub on the property. WCPB biologists reached out to USFWS biologist, Clint Pogue, to discuss the recommended next actions to take based on the presence of the western dog violet onsite. Mr. Pogue determined that protocol-level adult butterfly surveys were warranted due to sufficient western dog violet plants occurring onsite to support BSB larvae, proposed development not being able to avoid western dog violet, the parcel being within the historical and potential geographical range of BSB, appropriate habitat associates like Pacific reedgrass being present onsite, and the current distribution of BSB currently being unknown.

On August 5th, 12th and 19th, 2012, protocol level presence/absence surveys were conducted for the Behren's silverspot butterfly and no individuals were detected at the project site. The average temperature for the surveys was 65˚F and average wind speed was ~7 mph. Butterflies observed during the surveys were the common ringlet (*Coenonympha tullia*), Mylitta crescent (*Phyciodes mylitta*), cabbage white (*Pieris rapae*), acmon blue (*Icaricia acmon*), painted lady (*Vanessa cardui*), gray buckeye (*Junonia grisea*), Sonoran skipper (*Polites sonora*), woodland skipper (*Ochlodes sylvanoides*), and orange sulphur (*Colias eurytheme*). The data sheet for Behren's silverspot butterfly surveys is presented as **Appendix K**.

Figure 17. Western dog violet observed onsite.

5.4.1.2. Lotis Blue butterfly (Lycaeides argyrognomon lotis) (G5TH SH)

This Federally Endangered butterfly species has not been seen since 1983, it is primarily from Mendocino County but historically recorded in northern Sonoma and possibly Marin Counties. This species inhabits wet meadows, damp coastal prairie, and potentially bogs or poorly-drained sphagnum-willow bogs where soils are waterlogged and acidic. The presumed host plant Harlequin lotus (*Hosackia gracilis*) was not observed in the study area. No further surveys are recommended for this species.

5.4.1.3. Obscure bumblebee (*Bombus caliginosus*) (G4? S1S2)

Obscure bumblebee (*Bombus caliginosus*) is not a Federal or State protected species but is listed as a California Natural Diversity Database S1S2 species indicating that known occurrences are limited in California. This species is very similar to the common yellow-faced bumblebee (*Bombus vosnesenskii*) but can be differentiated by the presence of yellow hairs on the sternal segments. No bumblebee colonies were observed during the field surveys. No additional surveys for this species are recommended.

5.4.2. Fish

5.4.2.1.

No freshwater aquatic habitat capable of supporting fish was observed within the study area.

5.4.3. Amphibians

5.4.3.1. Northern red-legged frog (*Rana aurora*) (G4 S3) and California red-legged frog (*Rana draytonii*) (Federally Threatened; G4T2T3 S2S3)

The northern red-legged frog (*Rana aurora*) is listed as a California Department of Fish and Wildlife Species of Special Concern. The California red-legged frog (*Rana draytonii*) is federally listed as a Threatened Species under the Endangered Species Act as of May 23, 1996. The range for the northern red-legged frog extends from the southwest British Colombia coast to central Mendocino County. The range for the California red-legged from extends from central Mendocino County to northern Baja California, Mexico. There is a narrow overlap between the two species from Big River in the town of Mendocino to Mill Creek near Irish Beach. The study area is located in this narrow overlap area. Often found in woods adjacent to streams and streamsides with plant cover, red-legged frog breeds in permanent water sources, including lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps. Upland dispersal habitat can include forest debris and small mammal burrows.

No potential breeding habitat for was present in the study area. The parcel, which is on a peninsula and adjacent to the bluff edge, has low potential for the presence of the frogs during its overland movements between water sources. Red-legged frogs disperse overland between bodies of water and have been found up to two-miles from water, therefore, all portions of the project area have the potential to be dispersal habitat for red-legged frogs. Because this project is located away from potential breeding habitat and is further north than California red-legged frogs are normally present, no further studies are recommended for these species.

5.4.3.2. Southern Torrent Salamander (*Rhyacotriton variegatus*) (G3G4 S2S3)

This Species of Special Concern occurs primarily in cold, well-shaded permanent streams and spring seepages in redwood, Douglas fir, mixed conifer, montane riparian and montane hardwood-conifer habitats. On land it normally occurs only within the splash zone or on moss-covered rock rubble with trickling water. No suitable habitat was observed within the study area. No further surveys are recommended.

5.4.3.3. Red-bellied newt (*Taricha rivularis*) (G2 S2)

This Species of Special Concern inhabits primarily redwood forest, but also found within mixed conifer, valley-foothill woodland, montane hardwood and hardwood-conifer habitats. Rapid-flowing, permanent streams are required for breeding and larval development. No suitable

breeding habitat was present within the study area. This species may range up to a mile from streams and may therefore be found in upland habitat during some times of the year. No further studies are recommended for this species.

5.4.3.4. Pacific tailed frog (*Ascaphus truei*) (G4 S3S4)

This Species of Special Concern occurs in montane hardwood-conifer, redwood, Douglas-fir, and ponderosa pine habitats. Pacific tailed frogs are found within streams along the coast from Anchor Bay to the Oregon border. There is a CNNDB record of Pacific tailed frog within a stream around ~1.5 miles north of the study area; however, this species requires rocky high-gradient streams and is therefore unlikely to occur at the project site. No further surveys are recommended.

5.4.4. Birds

5.4.4.1. Nesting birds

Resident and migratory birds that are present during the nesting season may nest in the habitat present within the study area. Nesting requirements are highly variable. Some birds nest in burrows, others on the ground, in vegetation, brush, trees, rocky outcrops, or on man-made structures. The bird nesting season typically extends from February to August. The Migratory Bird Treaty Act protects special status and common birds and their nests while they are in the process of nesting. If construction is to occur during the breeding season (February to August), a pre-construction survey is recommended to ensure that no nesting birds will be disturbed during development. No nesting surveys are recommended if activity occurs in the non-breeding season.

5.4.5. Mammals

5.4.5.1. Sonoma tree vole (*Arborimus pomo) (G3 S3)*

This Species of Special Concern is a small, arboreal rodent that requires fresh Douglas fir (*Pseudotsuga menziesii*), grand fir (*Abies grandis*), Sitka spruce (*Picea sitchensis*), Monterey pine (*Pinus radiata*), shore pine (*P. contorta* ssp. *contorta*) and/or Bishop pine (*P. muricata*) needles for food. WCPB biologists surveyed the Monterey pine stand onsite by visually inspecting the tree canopy as well as searching the ground for evidence of Sonoma tree voles. No evidence of this species, such as clumps of tree-needle resin ducts or branches with needles plucks from the stem, was observed on site. No further surveys are warranted for this species.

5.4.5.2. Townsend's big-eared bat (*Corynorhinus townsendi*) (G4 S2)

This Species of Special Concern appeared on the CNDDB search for species found in the area. The Townsend's big-eared bat is generally found in dry uplands throughout the west but can also occur in mesic forest habitats along the coast. They require spacious cavern-like structures for roosting during all stages of their life. There are no existing structures, caves, or large tree hollows located on the property, so it is unlikely to find this species onsite. No further surveys are recommended.

6. REDUCED BUFFER ANALYSIS AND REPORT OF COMPLIANCE SUMMARY

A Reduced Buffer Analysis (RBA) (**Appendix H**) and Report of Compliance (RoC) (**Appendix I**) were conducted to assist in the determination of suitable protection for potential sensitive species and presumed sensitive habitat in the study area. Through the Reduced Buffer Analysis and Report of Compliance processes, necessary mitigation measures were created (**Section 7**) to ensure all impacts from proposed development will be avoided where possible and minimized as much as practicable.

As a result of the buffer analysis, we conclude that a 50ft buffer for the **Mendocino coast paintbrush** will sufficiently protect this resource from the impact of proposed development. Since the proposed

development will be within 50ft of the **salal - berry brambles scrub** habitat and partly within the **Pacific reedgrass meadow** itself, impacts are further discussed in Section 4 of the RBA, which addresses development within buffers. The Report of Compliance provides information about the salal - berry brambles scrub and Pacific reedgrass meadow, and concludes that the project proposed is the least impacting alternative that would allow for the residential use of the property in a manner consistent with the surrounding similar parcels.

7. MITIGATION MEASURES

The proposed project has been analyzed relative to its proximity to natural resources to determine its potential disturbance to sensitive species, utilizing the methods and results gathered above and the Reduced Buffer Analysis of the Mendocino County's Local Coastal Program (**Appendix H)**. As a result of those analyses, we believe that potential impacts to ESHA habitats can be avoided or minimized if the project utilizes the mitigation measures we recommend below.

The following mitigation measures are recommended to avoid, minimize, and compensate for impacts from development to Mendocino coast paintbrush, pacific reedgrass meadow, and salal-berry brambles. These measures will serve to prevent negative impacts to special status resources located within 100 feet of the proposed development.

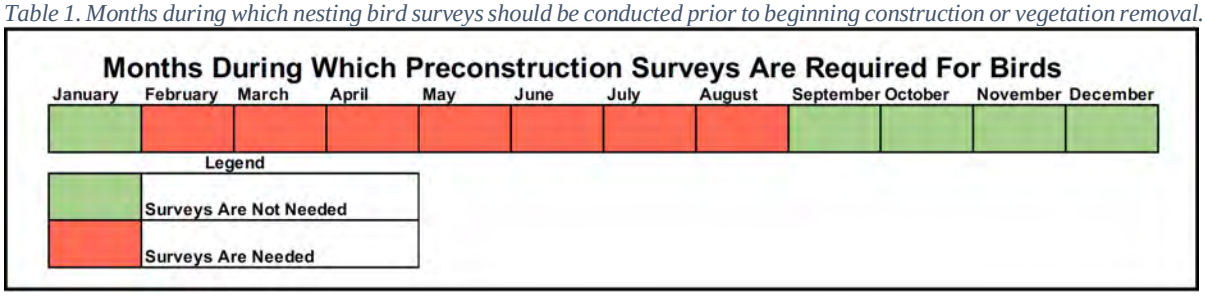
7.1. Potential Impact to Birds

Removal of vegetation and construction activity near trees and vegetated areas has the potential to disturb birds' nesting process if it occurs during the nesting season.

7.1.1. Avoidance Measure: Seasonal avoidance

No nesting bird surveys are recommended if activity occurs in the **non-breeding season** (September to January). If vegetation removal or development is to occur during the **breeding season** (February to August), a pre-construction survey is recommended within 14 days of the onset of vegetation removal or construction to ensure that no nesting birds will be disturbed during development (**Table 1**).

Table 1. Months during which nesting bird surveys should be conducted prior to beginning construction or vegetation removal.



7.1.2. Avoidance Measure: Nest Avoidance

If active native bird nests are observed, no vegetation removal or construction activities with the potential to disrupt nesting shall occur within a 100-foot exclusion zone. These exclusion zones may vary depending on species, habitat and level of disturbance. The exclusion zone shall remain in place around the active nest until all young are no longer dependent upon the nest. A biologist should monitor the nest site weekly during the breeding season to ensure the buffer is sufficient to protect the nest site from potential disturbance.

7.1.3. Avoidance Measure: Construction activities only during daylight hours

Construction should occur during daylight hours to limit disturbing construction noise and minimize artificial lights.

7.2. Potential Impact to Mendocino Coast Paintbrush, Pacific Reedgrass Meadow, and Salal-Berry Brambles

There is a potential for vegetation removal, grading and/or construction within or adjacent to the Mendocino coast paintbrush, pacific reedgrass meadow, and salal-berry brambles to negatively impact these plant communities. There is a potential for ground compaction and vegetation disturbance from materials and vehicles to occur during staging and construction. During construction and landscaping, invasive species can be introduced and spread to surrounding areas that could out compete native flora and degrade habitat that native fauna may use.

7.2.1. Avoidance Measure: Spatial buffers

A suitable buffer should be established between special status resources and proposed development. A Reduced Buffer Analysis has been conducted and a buffer distance of 50ft was found to be suitable for the Mendocino coast paintbrush. The minimum buffer distance acknowledged by the Mendocino LCP is 50ft. As development will be within 50ft of the salal-berry brambles and pacific reedgrass meadow, a default 100ft buffer around these resources is assumed, with no reduction in buffer distance requested.

7.2.2. Avoidance and Minimization Measure: Orange construction fencing

Orange construction fencing should be placed between the Pacific reedgrass meadow and the construction building envelope. All construction and material staging activities must remain south of this construction fencing border from the time it is placed throughout the completion of the project. Regular maintenance of the construction fencing should be conducted so that it maintains its protective function. The recommended location for the construction fencing is illustrated in **Figure 18**.

7.2.3. Avoidance Measure: Staging area plan

Stage all building materials and construction vehicles in upland areas outside of all presumed ESHAs.

7.2.4. Avoidance Measure: Employ Best Management Practices (BMPs)

Standard Best Management Practices shall be employed to assure minimization of erosion resulting from construction. Ground disturbance shall be limited to the minimum necessary and disturbed soil areas shall be stabilized as soon as feasible. Areas of bare soil should be seeded with native erosion control seed mix and/or covered with biodegradable erosion control materials (e.g. coconut fiber, jute, weed free straw).

7.2.5. Avoidance Measure: Clean heavy machinery

Heavy machinery such as and not limited to excavators and skid steers that may be used onsite have the potential to spread invasive plant material from use on other sites. Heavy machinery that is used in dirt should be power washed offsite to eliminate seeds and other propagules.

7.2.6. Avoidance Measure: Plant only non-invasive vegetation

While many ornamental landscapes on the California coast use non-native plants, invasive plants should not be planted. Some invasive plants commonly seen by WCPB biologists on the coast that should be avoided are: Iceplant (*Carpobrotus edulis, C. chiloensis,* & *Delosperma* sp.), cotoneaster (*Cotoneaster franchetii* & *C. pannosus*), English holly (Ilex aquifolium), English ivy (*Hedera helix*), cape ivy (*Delairea odorata*), pampas grass (*Cortaderia jubata* & *C. selloana*), cape weed (*Arctotheca calendula* & *A. prostrata*), *Crocosmia* sp., blue gum eucalyptus (*Eucalyptus globulus*), redhot poker (*Kniphofia uvaria*), periwinkle (*Vinca major*), bulbil bugle lily (*Watsonia meriana*), and callalily (*Zantedeschia aethiopica*).

7.3. Anticipated Impact to Pacific Reedgrass Meadow

A portion (approximately 560ft^2) of the proposed grading footprint is within the area vegetated with Pacific reedgrass meadow. Placement of construction fencing as close to the edge if the building pad

as practicable is recommended and illustrated in **Figure 18**. Based on this configuration approximately 630ft^2 of Pacific reedgrass meadow is south of the construction fencing and is anticipated to be eliminated. An area of approximately 1260ft^2 located east of and directly adjacent to the Pacific reedgrass patch, and north of the recommended construction fencing location, is vegetated with non-native prostrate cape weed and non-native grassland. This area has the potential to be converted to Pacific reedgrass meadow as is mapped as the "Pacific reedgrass habitat enhancement area" (**Figure 19**).

7.3.1. Compensatory Measure: Transplant Pacific reedgrass

Pacific reedgrass within the ~630 ft^2 of habitat that is anticipated to be impacted by the project should be transplanted into the area designated as the Pacific reedgrass habitat enhancement area as mapped in **Figure 19**. The enhancement area should be prepared prior to the transplanting by removing all invasive species within this area and covering it with deep mulch. Clumps of Pacific reedgrass within the impact area can be split into multiple plugs to be planted through the mulch into the enhancement area. Transplanting should occur in the fall or winter, after seasonal rains have begun. Mulch should be maintained between the plugs to regulate soil moisture and prevent weedy plants from becoming established. Watering the transplanted Pacific reedgrass may be necessary. If the transplanted Pacific reedgrass does not become established to a satisfactory degree, planting additional nursery grown Pacific reedgrass into this area may be necessary. Planting some nursery grown Pacific reedgrass plants or plugs during the initial transplanting effort may be desirable to speed the establishment of the Pacific reedgrass meadow.

8. DISCUSSION

It is the professional opinion of the biologists at WCPB that the project, as proposed, is the least damaging and most feasible option.

Two types of presumed ESHAs were identified within the study area:

> **Special Status Plant ESHA -** One species of special status plants was identified in the study area - **Mendocino coast paintbrush** (*Castilleja mendocinensis* CRPR 1B.2).
>
> **Plant Community ESHA** – Two special status plant communities were identified on the property: **salal – berry brambles (G3?S3?)** and **pacific reedgrass meadow (G4S2).**

Due to the constraints on the parcel, proposed development cannot avoid presumed ESHAs by greater than 100ft. The proposed development was designed to avoid direct impact to special status resources to the greatest extent feasible. The development has been shifted and reduced in size from the original preferred design to minimize building within the Pacific reedgrass meadow. Impact avoidance, minimization, and compensatory measures are recommended and include the following:

> Installing orange construction fencing along the northern edge of the building envelope between the salal-berry brambles and the majority of the Pacific reedgrass meadow and the area where construction impacts will occur. Covering areas of bare soil resulting from construction with native erosion control seed mix and/or with biodegradable erosion control materials (e.g. coconut fiber, jute, weed free straw). Nesting bird surveys will be conducted prior to vegetation removal and/or construction if these activities are to begin in the bird nesting season in order to avoid impact to these animals' reproductive activities. Nest buffers and timing restrictions will be enacted if bird nests are present during the pre-construction surveys. Pacific reedgrass within the area to be impacted will be transplanted to a Pacific reedgrass habitat enhancement area north of the construction fencing and east of the Pacific reedgrass patch within an area vegetated with non-native grasses and prostrate cape weed.

If all avoidance, minimization and compensatory mitigation measures are followed, and Pacific reedgrass can be well established within the Pacific reedgrass habitat enhancement area, then the proposed development should not result in a significant negative impact to the special status natural resources present.

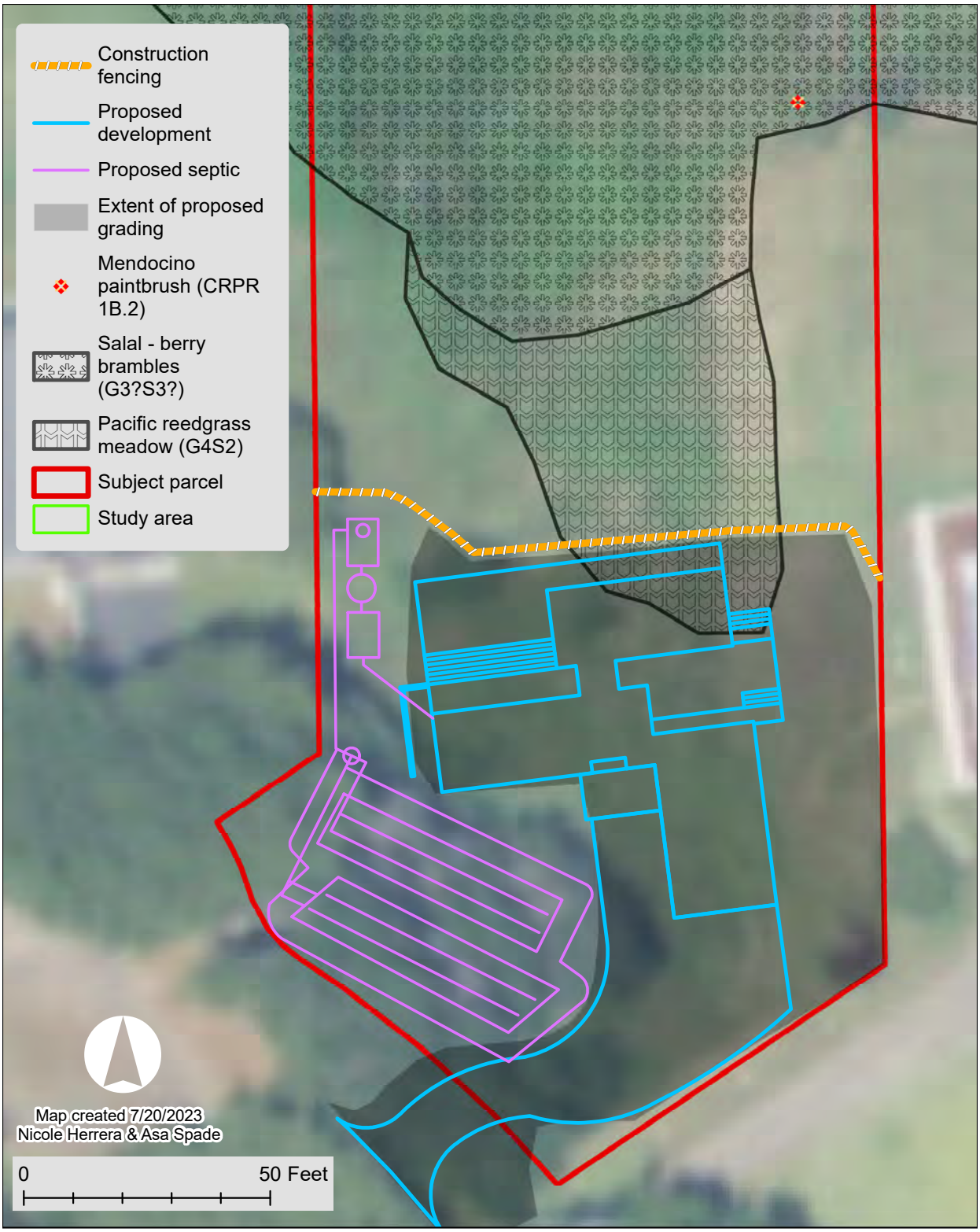


Figure 18. Map depicting the recommended location for the installation of construction fencing.

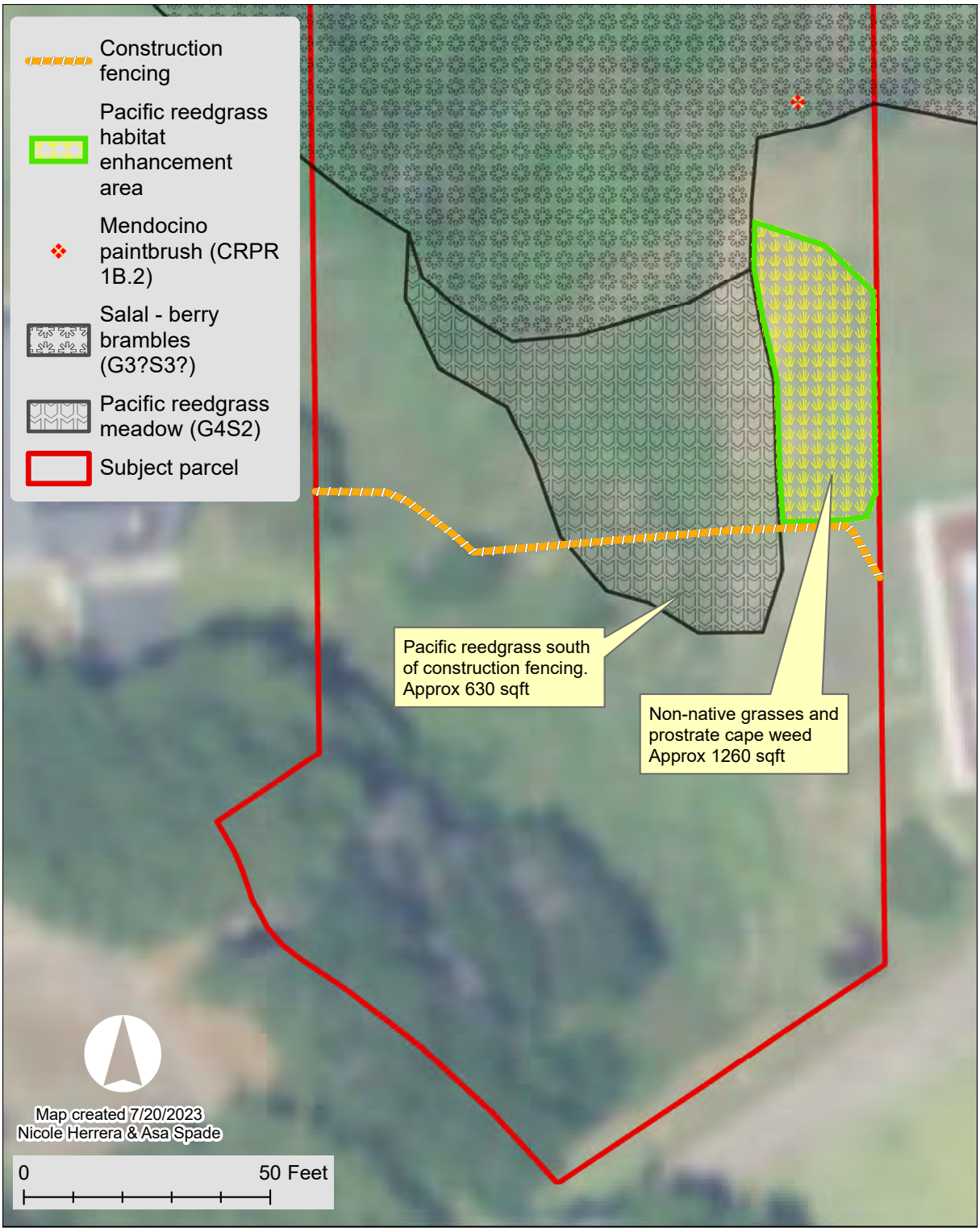


Figure 19. An area of approximately 1260 square feet east of and adjacent to the Pacific reedgrass meadow is vegetated with non-native grassland and prostrate cape weed. This area is an appropriate location for transplanting Pacific reedgrass that is anticipated to be impacted by the project footprint.

9. REFERENCES

Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, Editors. (2012). *The Jepson Manual: vascular plants of California, second edition*. University of California Press, Berkeley, CA.

California Coastal Commission. (1985). *Mendocino County General Plan Coastal Element*, Adopted by the Mendocino County Board of Supervisors November 5, 1985.

California Department of Fish and Wildlife, Habitat Conservation Division. (2014). *Natural Diversity Data Base* (CNDDB). Rare Find Version 5

California Department of Fish and Wildlife. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities*. The Resource Agency (March 20, 2018). Sacramento, CA.

California Department of Fish and Wildlife. *California Natural Community List*. Vegetation Classification and Mapping Program, California Department of Fish and Game. Sacramento, CA. (September 2021).

California Native Plant Society (CNPS). (2014). *Inventory of Rare and Endangered Plants* (online addition). California Native Plant Society. Sacramento, CA. accessed at http://www.cnps.org.

California Natural Community List. (2020). Retrieved September 9, 2020, from https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities.

CNPS, & California Fish & Wildlife. (n.d.). Manual of California Vegetation Online. Retrieved October 2, 2019, from http://vegetation.cnps.org/.

Cochrane TE. *Shaping the Sonoma-Mendocino coast: exploring the coastal geology of Northern California*. The Sea Ranch, CA: River Beach Press; 2017.

Environmental Laboratory. Corps of Engineers wetlands delineation manual, Corps of Engineers wetlands delineation manual (1987). Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.

Holland, R.F. (1986). *Preliminary Descriptions of the Terrestrial Natural Communities of California*. Sacramento, CA: California Department of Fish and Game.

Klein A, Keeler-Wolf T, Evens J. *Classification of the Vegetation Alliances and Associations of Sonoma County, California Volume 1 of 2 – Introduction, Methods, and Results*; 2015.

Klein A, Keeler-Wolf T, Evens J. *Classification of the Vegetation Alliances and Associations of Sonoma County, CA, V. 2 – Vegetation Descriptions*; 2015.

Munsell soil color charts: with genuine Munsell color chips. Grand Rapid, MI: Munsell Color X-Rite; 2012.

NRCS. *Web Soil Survey*. [accessed 2017 Sep 15]. https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

Rittiman CA, Thorson TD. *Soil survey of Mendocino County, California, western part*.

The Klamath Resource Information System (KRIS) accessed at www.krisweb.com . (2011). *Sensitive Amphibians and Riparian Reptiles*.

Tiner RW. *Wetland indicators: a guide to wetland identification, delineation, classification, and mapping*. Boca Raton, FL: Lewis Publishers; 1999.

University of California Berkeley (UC/JEPS), University of California, Berkeley http://ucjeps.berkeley.edu/interchange/ (September 6, 2018)

Vasilas LM, Hurt GW, Noble CV. *Field indicators of hydric soils in the United States: a guide for identifying and delineating hydric soils*. Washington, D.C.: United States Department of Agriculture, Natural Resources Conservation Service, in cooperation with the National Technical Committee on Hydric Soils; 2010.

Wetlands Mapper. US Fish and Wildlife Service. [accessed 2017 Sep 15]. https://www.fws.gov/wetlands/data/mapper.html

10. INVESTIGATOR BIOGRAPHIES

Asa B Spade graduated from Humboldt State University with a Bachelor of Science majoring in Environmental Science, with a concentration in Landscape Ecosystems as well as a minor in Botany. Since that time, he has been working in the natural resources field, first with Mendocino County Environmental Health and later with California State Parks and the Department of Fish and Game. He has been trained in Army Corps wetland delineation by the Coastal Training Program at Elkhorn Slough and in Advanced Wetland Delineation by the Wetland Science and Coastal Training Program. He has been trained in the environmental compliance process for wetland projects in San Francisco bay and outer coastal areas. In 2011 Asa completed training to survey for California red-legged frog held by Elkhorn Slough Coastal Program. In 2015 he attended a Townsend's big eared bat basal hollow habitat assessment and survey methods workshop taught by Michael Baker, Leila Harris, and Adam Hutchins. Asa has trained with the Carex Working Group in identifying grasses and sedges of Northern California as well as a CNPS sedge workshop taught by CA Fish and Wildlife staff biologist Gordon Leppig. In 2019, he completed a training for burrowing owls taught by Dr. Lynne Trulio through the Elkhorn Slough Coastal Training Program and completed foothill yellow legged frog training taught by David Cook and Jeff Alvarez. Asa conducted field work for the Classification and Mapping of Mendocino Cypress Woodland and Related Vegetation using CNPS/CDFW Rapid Assessment/Relevé protocol. In 2021 Asa completed training by Jeff Alverez and Jeff Wilcox on the eradication of bullfrogs within the range of California red-legged and foothill yellow legged frog. He is on the Fish and Wildlife Service approved list for Point Arena mountain beaver surveys and has done surveys for Behren's silverspot butterfly, Northern spotted owl, Sonoma tree vole, foothill yellow-legged frog and the California red-legged frog. He has contributed natural resources expertise to more than 200 coastal development projects in Mendocino County.

Nicole Herrera graduated from Gonzaga University with a Bachelor's Degree in Environmental Studies and a minor in Biology. After graduating, she worked as an intern for The Nature Conservancy conducting vegetation monitoring for the endangered golden-cheeked warbler. She served as an AmeriCorps member for the Watershed Stewards Program which aims to conserve, restore, and enhance anadromous watersheds for future generations. She worked as a fisheries technician conducting salmonid monitoring and habitat restoration for various agencies, including the California Department of Fish and Wildlife, Pacific States Marine Fisheries Commission, and the Bureau of Land Management. She also has experience planning and implementing northern spotted owl, Sonoma tree vole, and amphibian surveys. She has been trained in U.S. Army Corps of Engineers wetland delineation by the Wetland Training Institute, Inc. She is on the U.S. Fish and Wildlife Service's approved list for Point Arena mountain beaver and Behren's silverspot butterfly surveys. She completed the Bullfrog Control in California Field Workshop 2021 led by Jeff Alvarez and Jeff Wilcox held at a UC Berkeley Field Station.

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Mendocino County, Western Part, California

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

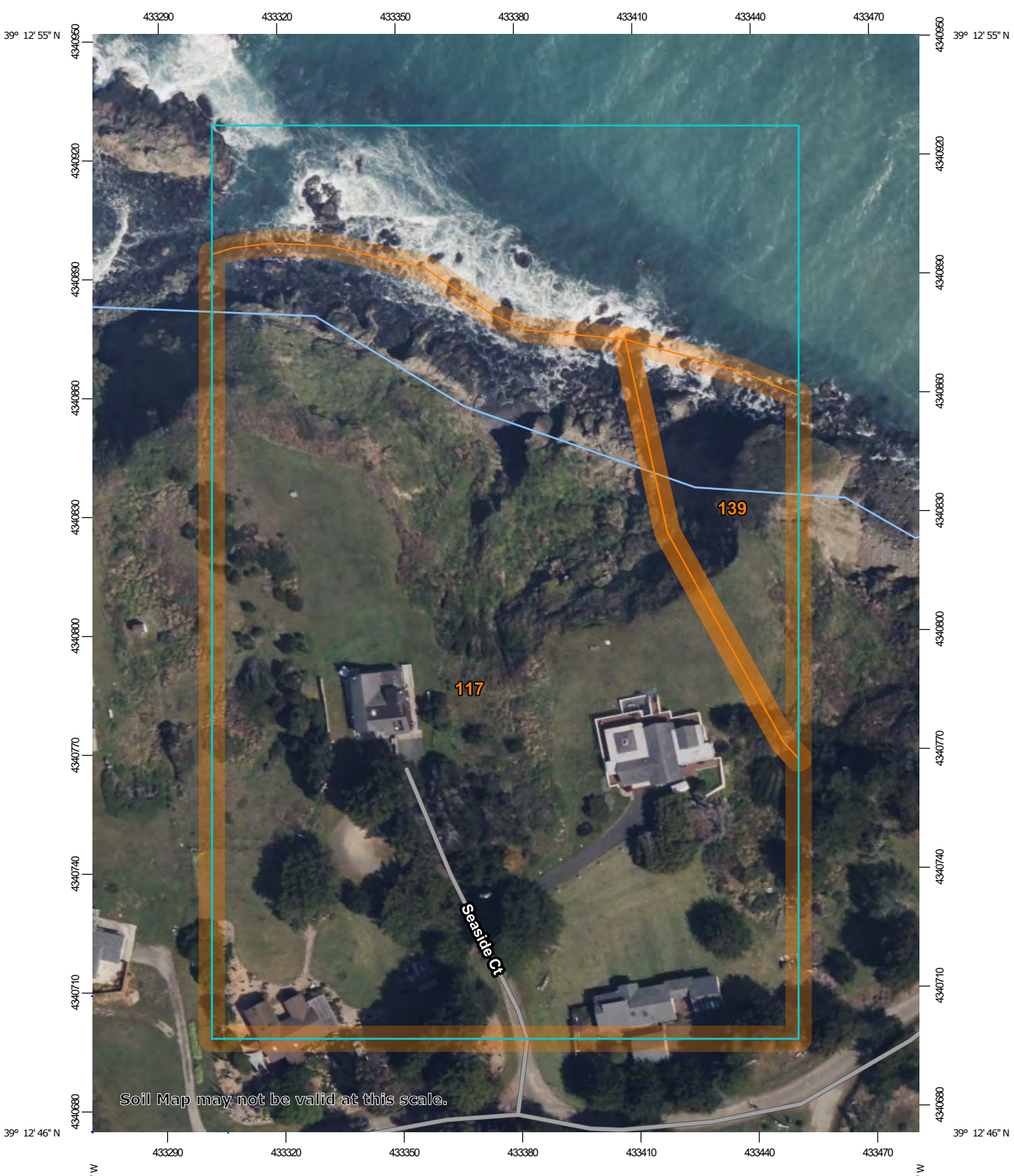
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,350 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

9

Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this 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.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mendocino County, Western Part, California
Survey Area Data: Version 18, Sep 7, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 7, 2022—May 31, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
117	Cabrillo-Heeser complex, 0 to 5 percent slopes	6.2	72.5%
139	Dystropepts, 30 to 75 percent slopes	0.6	7.6%
Totals for Area of Interest		**8.5**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Mendocino County, Western Part, California

117—Cabrillo-Heeser complex, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: hmkm
Elevation: 20 to 240 feet
Mean annual precipitation: 35 to 45 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 250 to 330 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Cabrillo and similar soils: 50 percent
Heeser and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cabrillo

Setting

Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fluviomarine deposits derived from sandstone

Typical profile

H1 - 0 to 26 inches: sandy loam
H2 - 26 to 35 inches: sandy clay loam
H3 - 35 to 50 inches: sandy clay loam
H4 - 50 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 30 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B
Ecological site: R004BY060CA - Sandy Loam Terrace (Perennial Grass)
Hydric soil rating: No

Description of Heeser

Setting

Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits derived from sandstone

Typical profile

H1 - 0 to 34 inches: sandy loam
H2 - 34 to 65 inches: sandy loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: R004BY060CA - Sandy Loam Terrace (Perennial Grass)
Hydric soil rating: No

Minor Components

Crispin

Percent of map unit: 5 percent
Hydric soil rating: No

Biaggi

Percent of map unit: 5 percent
Hydric soil rating: No

Sirdrak

Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed, gentler or steeper slopes

Percent of map unit: 3 percent
Hydric soil rating: No

Tropaquepts

Percent of map unit: 3 percent
Landform: Marine terraces
Hydric soil rating: Yes

139—Dystropepts, 30 to 75 percent slopes

Map Unit Setting

National map unit symbol: hmlk
Elevation: 10 to 1,500 feet
Mean annual precipitation: 35 to 55 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 250 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition

Dystropepts and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dystropepts

Setting

Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Residuum weathered from sandstone and shale

Properties and qualities

Slope: 30 to 75 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Minor Components

Rock outcrop

Percent of map unit: 10 percent
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Vizcaino

Percent of map unit: 8 percent
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser

Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Abalobadiah

Percent of map unit: 7 percent
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

U.S. Fish and Wildlife Service
National Wetlands Inventory

King NWI Map

September 27, 2022

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

WYNN COASTAL PLANNING & BIOLOGY

Appendix C. Species Rarity Ranking System and Definitions

FED: federal status includes federally rare (**FR**), threatened (**FT**), or endangered (**FE**)

STATE: California state status includes rare (**CR**), threatened (**CT**), or endangered (**CE**)

CNPS: California Native Plant Society ranked inventory of native California plants thought to be at risk

CNPS Ranking

List 1A (1A) Presumed extinct in California.

List 1B (1B) Rare, threatened, or endangered in California and elsewhere.

List 2 (2) Rare, threatened or endangered in California but more common elsewhere.

List 3 (3) More information needed, a review list.

List 4 (4) Species of limited distribution, a watch list.

Threat Code extensions and their meanings:

.1 - Seriously endangered in California

.2 – Fairly endangered in California

.3 – Not very endangered in California

G-RANK: Global Ranking - The global rank (G-rank) is a reflection of the overall condition of an element throughout its global range.

SPECIES OR NATURAL COMMUNITY LEVEL

G1 = Less than 6 viable element occurrences (Eos) OR less than 1,000 individuals OR less than 2,000 acres.

G2 = 6-20 Eos OR 1,000-3,000 individuals OR 2,000-10,000 acres.

G3 = 21-80 Eos OR 3,000-10,000 individuals OR 10,000-50,000 acres.

G4 = Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat.

G5 = Population or stand demonstrably secure to ineradicable due to being commonly found in the world.

GH - All sites are historical so possibly extinct; the element has not been seen for at least 20 years, but suitable habitat still exists (**SH** = All California sites are historical and possibly extinct).

GX - All sites are extirpated; this element is extinct in the wild (**SX** = All California sites are extirpated).

Appendix C. Species Rarity Ranking System and Definitions

GXC - Extinct in the wild; exists in cultivation.

G1Q - The element is very rare, but there are taxonomic questions associated with it.

T - Rank applies to a subspecies or variety.

S-RANK: STATE RANKING - The state rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank.

S1 = Less than 6 viable Eos OR less than 1,000 individuals OR less than 2,000 acres

S1.1 = very threatened

S1.2 = threatened

S1.3 = not very threatened OR no current threats known

S2 = 6-20 Eos OR 1,000-3,000 individuals OR 2,000-10,000 acres

S2.1 = very threatened

S2.2 = threatened

S2.3 = not very threatened OR no current threats known

S3 = 21-80 Eos or 3,000-10,000 individuals OR 10,000-50,000 acres

S3.1 = very threatened

S3.2 = threatened

S3.3 = not very threatened OR no current threats known

S4 = Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern; i.e. there is some threat, or somewhat narrow habitat.

S5 = Demonstrably secure to ineradicable in California. NO THREAT RANK.

Notes:

1. Other considerations used when ranking a species or natural community include the pattern of distribution of the element on the landscape, fragmentation of the population/stands, and historical extent as compared to its modern range. It is important to take a bird's eye or aerial view when ranking sensitive elements rather than simply counting Eos.
2. Uncertainty about the rank of an element is expressed in two major ways:
By expressing the rank as a range of values: e.g., S2S3 means the rank is somewhere between S2 and S3.
By adding a ? to the rank: e.g., S2? This represents more certainty than S2S3, but less than S2.
3. Other symbols

Special Status Plant Scoping List

Scientific Name (Synonyms) Common Name	Habitat found	Blooming Period	CRPR	Fed. Listing	State Listing	State Rank	Global Rank	Observed?
Abronia umbellata var.breviflora Pink sand-verbena	Coastal dunes	Jun-Oct	1B.1	N	N	S2	G4G5T2	N
Agrostis blasdalei Blasdale's bent grass	Coastal dunes, coastal bluff scrub, coastal prairie.	May- Jul	1B.2	N	N	S2	G2	N
Arctostaphylos nummularia ssp. Mendocinoensis Pygmy manzanita	Closed-cone coniferous forest. Acidic sandy-clay soils in dwarfed coniferous forest.	Jan	1B.2	N	N	S1	G3?T1	N
Astragalus agnicidus Humboldt milk- vetch	Openings, disturbed areas, roadsides,broadleafed upland forest, North coast coniferous forest	Apr-Sep	1B.1	N	CE	S2	G2	N
Astragalus pycnostachyus var. pyncnostachyus Coastal marsh milk-vetch	Coastal dunes (mesic), coastal scrub, coastal salt marshes and swamps, and streamsides	Apr-Oct	1B.2	N	N	S2	G2T2	N
Blennosperma nanum var.robustum Point Reyes blennosperma	Coastal prairie, coastal scrub	Feb-Apr	1B.2	N	CR	S2	G4T2	N
Calamagrostis crassiglumis Thurber's reed grass	Coastal scrub (mesic), freshwater marshes and swamps.	May-Aug	2B.1	N	N	S2	G3Q	N
Calystegia purpurata ssp. saxicola Coastal bluff morning-glory	Coastal bluff scrub, Coastal dunes, Coastal scrub, North Coast coniferous forest.	Mar-Sep	1B.2	N	N	S2S3	G4T2T3	N
Campanula californica Swamp harebell	Bogs and fens, closed-cone coniferous forest, coastal prairie, meadows and seeps, freshwater marshes and swamps, and North Coast coniferous forests.	Jun-Oct	1B.2	N	N	S3	G3	N
Carex californica California sedge	Bogs and fens, closed-cone coniferous forest, coastal prairie, meadows and seeps, marshes and swamps (often on margins or drier areas).	May-Aug	2B.2	N	N	S2	G5	N
Carex lenticularis var.limnophila Lagoon sedge	Shores, beaches, often gravelly, bogs and fens, marshes and swamps, North Coast coniferous forest.	Jun-Aug	2B.2	N	N	S1	G5T5	N
Carex livida Livid sedge	Bogs and Fens	Jun	2A	N	N	SH	G5	N
Carex lyngbyei Lyngbye's sedge	Brackish or freshwater marshes and swamps	Apr-Aug	2B.2	N	N	S3	G5	N
Carex saliniformis Deceiving sedge	Mesic sites of coastal prairie, coastal scrub, and meadows, seeps, marshes and swamps (coastal salt)	Jun-Jul	1B.2	N	N	S2	G2	N
Carex viridula ssp. viridula Green yellow sedge	Bogs and fens, marshes and swamps (freshwater), north coast coniferous forest (mesic).	Jun-Nov	2B.3	N	N	S2	G5T5	N
Castilleja litoralis Oregon coast paintbrush	Sandy sites in coastal bluff scrub and coastal scrub; coastal dunes.	Jun	2B.2	N	N	S3	G3	N
Castilleja ambigua var. humboldtiensis Humboldt Bay owl's-clover	Coastal salt marshes and swamps.	Apr-Aug	1B.2	N	N	S2	G4T2	N
Castilleja mendocinensis (Castilleja latifolia ssp. Mendocinensis) Mendocino Coast paintbrush	Coastal bluff scrub, coastal scrub, closed-cone coniferous forest, coastal dunes, coastal prairie.	Apr-Aug	1B.2	N	N	S2	G2	Y
Chorizanthe howellii Howell's spineflower	Sandy, often disturbed, areas of coastal prairie and coastal scrub, and coastal dunes	May - Jul	1B.2	FE	CT	S1	G1	N

Scientific Name (Synonyms) Common Name	Habitat found	Blooming Period	CRPR	Fed. Listing	State Listing	State Rank	Global Rank	Observed?
Clarkia amoena ssp. whitneyi Whitney's farewell-to- spring	Coastal bluff scrub, coastal scrub.	Jun-Aug	1B.1	N	N	S1	G5T1	N
Collinsia corymbosa Round-headed Chinese-houses	Coastal dunes, coastal prairie.	Apr-June	1B.2	N	N	S1	G1	N
Cornus canadensis Bunchberry	Bogs and fens, meadows and seeps, North Coast coniferous forest.	May-Jul	2B.2	N	N	S2	G5	N
Cuscuta pacifica var. papillata Mendocino dodder	Coastal dunes (interdune depressions).	Jul-Oct	1B.2	N	N	S1	G5T1	N
Erigeron supplex Supple daisy	Coastal bluff scrub, coastal prairie.	May-Jul	1B.2	N	N	S2	G2	N
Erysimum concinnum Headland wallflower	Coastal bluff scrub, coastal dunes, coastal prairie.	Feb-Jul	1B.2	N	N	S2	G3	N
Erysimum menziesii (Erysimum menziesii ssp. eurekense, Erysimum menziesii ssp. menziesii, Erysimum menziesii ssp. yadonii) Menzies' wallflower	Localized on coastal dunes and coastal strand.	Mar-Sep	1B.1	FE	CE	S1	G1	N
Erythronium revolutum Coast fawn lily	Mesic, streambanks. Bogs and fens; broadleafed upland forests; North Coast coniferous forest.	Mar-Aug	2B.2	N	N	S3	G4G5	N
Fritillaria roderickii (Fritallaria biflora var. biflora) Roderick's fritillary	Coastal bluff scrub, coastal prairie, valley and foothill grassland.	Mar-May	1B.1	N	CE	S1	G1Q	N
Gilia capitata ssp.chamissonis Blue coast gilia	Coastal dunes, coastal scrub.	Apr-Jul	1B.1	N	N	S2	G5T2	N
Gilia capitata ssp. pacifica Pacific gilia	Coastal bluff scrub, openings in chaparral, coastal prairie, valley and foothill grassland.	Apr-Aug	1B.2	N	N	S2	G5T3	N
Gilia capitata ssp.tomentosa Woolly-headed gilia	Serpentinite, rocky, outcrops of coastal bluff scrub and calley and foothill grassland.	May-Jul	1B.1	N	N	S2	G5T2	N
Gilia millefoliata Dark-eyed gilia	Coastal dunes	Apr-Jul	1B.2	N	N	S2	G2	N
Glyceria grandis American manna grass	Bogs and fens, wet meadows and seeps, marshes, swamps,streambanks, and lake margins	Jun-Aug	2B.3	N	N	S3	G5	N
Hemizonia congesta ssp. congesta Seaside tarplant	Sometimes roadsides.Valley and foothill grassland	Apr-Nov	1B.2	N	N	S2	G5T2	N
Hesperevax sparsiflora var. brevifolia Short-leaved evax	Sandy coastal bluffs; coastal dunes, coastal dune mat, and sandy openings in wet dune meadows. Coastal bluff scrub. Rocky, grassy slopes. In areas of sparse vegetation cover in sandy substrate.	Mar-Jun	1B.2	N	N	S3	G4T3	N
Hesperocyparis pygmaea (Cupressus pygmaea, Cupressus goveniana ssp. pigmaea, Callitropsis pygmaea) Pygmy cypress	Closed-cone coniferous forests, usually podzol-like	NA	1B.2	N	N	S1	G1	N
Horkelia marinensis Point Reyes horkelia	Sandy, coastal dunes, coastal scrub, coastal prairire	May-Sep	1B.2	N	N	S2	G2	N

Scientific Name (Synonyms) Common Name	Habitat found	Blooming Period	CRPR	Fed. Listing	State Listing	State Rank	Global Rank	Observed?
Horkelia tenuiloba Thin-lobed horkelia	Mesic openings or sandy sites in broadleafed upland forests, chaparral, and valley and foothill grassland.	May-Aug	1B.2	N	N	S2	G2	N
Hosackia gracilis (Lotus formosissimus) Harlequin lotus	Wetlands, roadsides, Broadleafed upland forest, Coastal bluff scrub, Closed-cone coniferous forest, Cismontane woodland, Coastal prairie, Coastal scrub, Meadows and seeps, Marshes and swamps, North Coast coniferous forest, Valley and foothill grassland	Mar-Jul	4.2	N	N	S3	G3G4	N
Juncus supiniformis Hair-leaved rush	Bogs and fens; freshwater marshes and swamps near the coast.	Apr-Jul	2B.2	N	N	S1	G5	N
Kopsiopsis hookeri (Boschniakia hookeri) Small groundcone	North Coast conferous forest	Apr-Aug	2B.3	N	N	S1S2	G4?	N
Lasthenia californica ssp.bakeri Baker's goldfields	Openings in closed-cone coniferous forest; coastal scrub; meadows and seeps; marshes and swamps.	Apr-Oct	1B.2	N	N	S1	G3T1	N
Lasthenia californica ssp. macrantha Perennial goldfields	Coastal bluff scrub, coastal dunes, and coastal scrub.	Jan-Nov	1B.2	N	N	S2	G3T2	N
Lasthenia conjugens Contra Costa goldfields	Mesic sites in cismontane woodlands, alkaline playas, valley and foothill grasslands, vernal pools	Mar-Jun	1B.1	FE	N	S1	G1	N
Lathyrus palustris Marsh Pea	Bogs and fens; mesic sites of coastal prairies, coastal scrub, lower montane coniferous forests, and North Coast coniferous forests.	Mar- Aug	2B.2	N	N	S2	G5	N
Lilium maritimum Coast lily	Broadleafed upland forests, closed-cone coniferous forests, coastal prairies, coastal scrub, freshwater marshes and swamps. Roadsides and roadside ditches.	May-Aug	1B.1	N	N	S2	G2	N
Microseris paludosa Marsh microseris/silverpuffs	Closed-cone coniferous forests, cismontane woodlands, coastal scrub, valley and foothill grasslands. *(A 1968 collection from Point Arena (3.2 km to N, between Hwy. 1 and beach) is the northernmost occurrence and is disjunct from southern populations.*	Apr-Jul	1B.2	N	N	S2	G2	N
Oenothera wolfii Wolf's evening- primrose	Sandy, usually mesic sites in coastal bluff scrub, coastal dunes, coastal prairie, and lower montane coniferous forests. *(Along roads on vertical cutbanks and in grassy median. On disturbed sterile soil; upper stabilized dunes; rocky slopes protected above strand; vertical cliffs above the ocean.)*	May-Oct	1B.1	N	N	S1	G2	N
Packera bolanderi var.bolanderi (Senecio bolanderi var. bolanderi) Seacoast ragwort	Sometimes roadsides, Coastal Scrub, North coast coniferous forest	Jan-Aug	2B.2	N	N	S2S3	G4T4	N
Phacelia insularis var.continentis North Coast phacelia	Sandy, sometimes rocky, sites in coastal bluff scrub; coastal dunes. *(Rocky, thin soil with native and non-native grasses and forbs. Sandy pastureland and grazed coastal prairie.)*	Mar-May	1B.2	N	N	S2	G2T2	N
Pinus contorta ssp.bolanderi Bolander's beach pine	Closed-cone coniferous forests with podzol-like soils. Associated with Mendocino cypress and bishop pine, and Mendocino pygmy cypress forests.	Jul-Aug	1B.2	N	N	S2	G5T2	N
Piperia candida White-flowered rein orchid	Sometimes serpentinite, Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest	Mar-Sep	1B.2	N	N	S3	G3	N
Pleuropogon hooverianus North Coast semaphore grass	open areas, mesic, broadleafed upland forest, meadows and seeps, North coast coniferous forest.	Apr-Jun	1B.1	N	CT	S2	G2	N

Scientific Name (Synonyms) Common Name	Habitat found	Blooming Period	CRPR	Fed. Listing	State Listing	State Rank	Global Rank	Observed?
Potamogeton epihydrus Ribbonleaf pondweed	Marshes and swamps (assorted shallow freshwater)	Jun-Sep	2B.2	N	N	S2S3	G5	N
Puccinellia pumila Dwarf alkali grass	Coastal salt marshes and swamps; meadows and seeps, mineral spring meadows.	Jul	2B.2	N	N	SH	G4?	N
Rhynchospora alba White beaked-rush	Bogs and fens (sometimes in Mendocino pygmy forests); meadows and seeps; marshes and swamps (freshwater).	Jul-Aug	2B.2	N	N	S2	G5	N
Sanguisorba officinalis Great burnet	Bogs and fens,broadleafed upland forests, meadows and seeps, marshes and swamps, North Coast coniferous forests, riparian forests, Serpentine seepage areas and along stream borders.	Jul-Oct	2B.2	N	N	S2	G5?	N
Sidalcea calycosa ssp.rhizomata Point Reyes checkerbloom	Freshwater marshes and swamps near the coast.	Apr-Sep	1B.2	N	N	S2	G5T2	N
Sidalcea malviflora ssp.patula Siskiyou checkerbloom	Often roadcuts, coastal bluff scrub; coastal prairie; North coast coniferous forest	May-Aug	1B.2	N	N	S2	G5T2	N
Sidalcea malviflora ssp. purpurea Purple-stemmed checkerbloom	Broadleafed upland forest, coastal prairie	May-Jun	1B.2	N	N	S1	G5T1	N
Trifolium buckwestiorum Santa Cruz clover	Gravelly margins of broadleafed upland forests, cismontane woodlands, coastal prairie. *(Common associates include Juncus bufonius, Soliva sessilis, Danthonia californica, and Bromus hordeaceus. In Mendocino Co., most collections from ~5 miles up Garcia River.)*	Apr-Oct	1B.1	N	N	S2	G2	N
Trifolium trichocalyx Monterey clover	Closed-cone coniferous forest (sandy, openings, burned areas).	Apr-Jun	1B.1	FE	CE	S1	G1	N
Triquetrella californica Coastal triquetrella	Soil of Coastal bluff scrub, coastal scrub,	NA	1B.2	N	N	S2	G2	N
Viola adunca Western dog violet	Yellow pine forest, red fir forest, lodgepole forest, redwood forest, mixed evergreen forest, subalpine forest, alpine fell-fields, wetland riparian. Common and widespread on open sea bluffs to red fir forest.	Apr-Aug	not ranked	N	N	?	?	N
Viola palustris Alpine marsh violet	Coastal Bogs and Fens; Coastal Scrub (mesic)	Mar-Aug	2B.2	N	N	S1S2	G5	N

Sensitive Natural Communities and Alliances Occuring in Coastal and Inland Mendocino County								
Alliance Scientific Name	**Association Scientific Name**	**Alliance Common Name**	**Alliance Global Rank**	**Alliance State Rank**	**Associciation Global Rank**	**Association Rank State**	**Rare ?**	**Present?**
Woodland and Forest Alliances, Associations, and Stands								
Abies grandis	*Abies grandis – Picea sitchensis / Gaultheria shallon / Polystichum munitum*	Grand fir forest	G4	S2	G1	S1	Y	N
	Abies grandis – Tsuga heterophylla / Polystichum munitum	Grand fir forest	G4	S2	G2	S1	Y	N
Acer macrophyllum	*Acer macrophyllum*	Bigleaf maple forest	G4	S3			Y	N
	Acer macrophyllum – Pseudotsuga menziesii / Adenocaulon bicolor	Bigleaf maple forest	G4	S3			Y	N
	Acer macrophyllum – Pseudotsuga menziesii / Corylus cornuta	Bigleaf maple forest	G4	S3			Y	N
	Acer macrophyllum – Pseudotsuga menziesii / Dryopteris arguta	Bigleaf maple forest	G4	S3			Y	N
	Acer macrophyllum – Pseudotsuga menziesii / Philadelphus lewisii	Bigleaf maple forest	G4	S3			Y	N
	Acer macrophyllum – Pseudotsuga menziesii / Polystichum munitum	Bigleaf maple forest	G4	S3			Y	N
Acer negundo	*Acer negundo*	Box-elder forest	G5	S2			Y	N
	Acer negundo – Salix gooddingii	Box-elder forest	G5	S2			Y	N
Aesculus californica	*Aesculus californica*	California buckeye groves	G3	S3			Y	N
	Aesculus californica – Umbellularia californica / Diplacus aurantiacus	California buckeye groves	G3	S3	G3	S3?	Y	N
	Aesculus californica – Umbellularia californica / Holodiscus discolor	California buckeye groves	G3	S3			Y	N
	Aesculus californica / Datisca glomerata	California buckeye groves	G3	S3			Y	N
	Aesculus californica / Lupinus albifrons	California buckeye groves	G3	S3			Y	N
	Aesculus californica / Toxicodendron diversilobum / moss	California buckeye groves	G3	S3			Y	N
Alnus rhombifolia	*Alnus rhombifolia*	White alder groves	G4	S4	G2Q		Y	N
	Alnus rhombifolia – Platanus racemosa	White alder groves	G4	S4	G3	S3	Y	N
	Alnus rhombifolia – Platanus racemosa – Salix laevigata	White alder groves	G4	S4			Y	N
	Alnus rhombifolia – Salix laevigata	White alder groves	G4	S4			Y	N
	Alnus rhombifolia / Cornus sericea	White alder groves	G4	S4			Y	N
	Alnus rhombifolia / Darmera peltata	White alder groves	G4	S4			Y	N
	Alnus rhombifolia / Polypodium californicum	White alder groves	G4	S4			Y	N
	Alnus rhombifolia / Rhododendron occidentale	White alder groves	G4	S4			Y	N
	Alnus rhombifolia / Salix exigua – (Rosa californica)	White alder groves	G4	S4			Y	N
	Calocedrus decurrens – Alnus rhombifolia	White alder groves	G5	S5	G3?		Y	N
	Umbellularia californica – Alnus rhombifolia	White alder groves	G5	S5	G3	S3	Y	N
Alnus rubra	*Alnus rubra – Pseudotsuga menziesii / Acer circinatum / Claytonia sibirica*	Red alder forest	G5	S4			Y	N
	Alnus rubra / Gaultheria shallon	Red alder forest	G5	S4			Y	N
	Alnus rubra / Rubus spectabilis – Sambucus racemosa	Red alder forest	G5	S4	G3G4		Y	N
	Alnus rubra / Salix lasiolepis / Rubus spp.	Red alder forest	G5	S4	G4	S3	Y	N
Arbutus menziesii	*Arbutus menziesii – (Quercus agrifolia)*	Madrone forest	G4	S3	G3	S3?	Y	N
	Arbutus menziesii – Umbellularia californica	Madrone forest	G4	S3			Y	N
Fraxinus latifolia	*Fraxinus latifolia*	Oregon ash groves	G4	S3			Y	N
	Fraxinus latifolia – Alnus rhombifolia	Oregon ash groves	G4	S3			Y	N
	Fraxinus latifolia / Cornus sericea	Oregon ash groves	G4	S3			Y	N
	Fraxinus latifolia - Salix laevigata	Oregon ash groves	G4	S3			Y	N
Hesperocyparis macrocarpa	*Hesperocyparis macrocarpa*	Monterey cypress stands	G1	S1	GNA	SNA	Y	N
Hesperocyparis pigmaea	*Hesperocyparis pigmaea – Pinus contorta ssp. bolanderi – Pinus muricata / Rhododendron macrophyllum*	Mendocino pygmy cypress woodland	G1	S1			Y	N
	Hesperocyparis pigmaea – Pinus contorta ssp. bolanderi / Rhododendron columbianum	Mendocino pygmy cypress woodland	G1	S1			Y	N
	Hesperocyparis pigmaea – Pinus muricata / Arctostaphylos nummularia	Mendocino pygmy cypress woodland	G1	S1			Y	N
Notholithocarpus densiflorus	*Notholithocarpus densiflorus*	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus – Acer circinatum	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus – Acer macrophyllum	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus – Arbutus menziesii	Tanoak forest	G4	S3	G3	S3	Y	N
	Notholithocarpus densiflorus – Arbutus menziesii / Ceanothus integerrimus	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus – Calocedrus decurrens / Festuca californica	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus – Chamaecyparis lawsoniana	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus – Chrysolepis chrysophylla	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus – Cornus nuttallii	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus – Cornus nuttallii / Toxicodendron diversilobum	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus – Pinus lambertiana / Toxicodendron diversilobum	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus – Quercus chrysolepis	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus – Quercus kelloggii	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus – Umbellularia californica	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus / Corylus cornuta	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus / Frangula californica	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus / Gaultheria shallon	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus / Mahonia nervosa	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus / Quercus vaccinifolia – Rhododendron macrophyllum	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus / Toxicodendron diversilobum – Lonicera hispidula var. vacillans	Tanoak forest	G4	S3			Y	N
	Notholithocarpus densiflorus / Vaccinium ovatum	Tanoak forest	G4	S3			Y	N
Picea sitchensis	*Picea sitchensis – Tsuga heterophylla*	Sitka spruce forest	G5	S2			Y	N
	Picea sitchensis / Maianthemum dilatatum	Sitka spruce forest	G5	S2			Y	N
	Picea sitchensis / Polystichum munitum	Sitka spruce forest	G5	S2	G4?		Y	N
	Picea sitchensis / Rubus spectabilis	Sitka spruce forest	G5	S2	G3		Y	N
Pinus contorta ssp. contorta	*Pinus contorta ssp. contorta*	Beach pine forest	G5	S3			Y	N
	Pinus contorta ssp. contorta – Picea sitchensis	Beach pine forest	G5	S3			Y	N
Pinus muricata – Pinus radiata	*Pinus muricata*	Bishop pine – Monterey pine forest	G3	S3	G3?	S3?	Y	N
	Pinus muricata – (Arbutus menziesii) / Vaccinium ovatum	Bishop pine – Monterey pine forest	G3	S3	G2	S2	Y	N
	Pinus muricata – Chrysolepis chrysophylla / Arctostaphylos nummularia	Bishop pine – Monterey pine forest	G3	S3	G2	S2	Y	N
	Pinus muricata – Notholithocarpus densiflorus	Bishop pine – Monterey pine forest	G3	S3	G3	S3	Y	N
	Pinus muricata – Pseudotsuga menziesii	Bishop pine – Monterey pine forest	G3	S3			Y	N
	Pinus muricata / Arctostaphylos glandulosa	Bishop pine – Monterey pine forest	G3	S3	G2	S2	Y	N
	Pinus muricata / Arctostaphylos spp.	Bishop pine – Monterey pine forest	G3	S3			Y	N
	Pinus muricata / Comarostaphylis diversifolia ssp. planifolia	Bishop pine – Monterey pine forest	G3	S3			Y	N
	Pinus muricata / Xerophyllum tenax	Bishop pine – Monterey pine forest	G3	S3			Y	N
	Pinus radiata – Pinus muricata / Arctostaphylos tomentosa – Arctostaphylos hookeri	Bishop pine – Monterey pine forest	G3	S3			Y	N
	Pinus radiata – Quercus agrifolia / Toxicodendron diversilobum	Bishop pine – Monterey pine forest	G3	S3			Y	N
	Pinus radiata / Arctostaphylos tomentosa – Vaccinium ovatum	Bishop pine – Monterey pine forest	G3	S3			Y	N
	Pinus radiata / Toxicodendron diversilobum	Bishop pine – Monterey pine forest	G3	S3			Y	N
	Pinus ponderosa – Pinus contorta ssp. murrayana / Amelanchier alnifolia	Ponderosa pine forest	G5	S4			Y	N

Sensitive Natural Communities and Alliances Occuring in Coastal and Inland Mendocino County								
Alliance Scientific Name	Association Scientific Name	Alliance Common Name	Alliance Global Rank	Alliance State Rank	Associciation Global Rank	Association Rank State	Rare ?	Present?
	Pinus ponderosa – Pinus jeffreyi / Artemisia tridentata ssp. vaseyana – Purshia tridentata var. tridentata	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa – Pinus jeffreyi / Purshia tridentata var. tridentata / Festuca idahoensis	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Achnatherum nelsonii	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Amelanchier alnifolia – Mahonia repens / Arnica cordifolia	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Amelanchier alnifolia – Prunus virginiana	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Arctostaphylos patula – Chamaebatia foliolosa	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Artemisia tridentata	Ponderosa pine forest	G5	S4	GNR		Y	N
	Pinus ponderosa / Artemisia tridentata ssp. vaseyana – Purshia tridentata var. tridentata	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Artemisia tridentata ssp. vaseyana / Festuca idahoensis	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Bromus carinatus	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Ceanothus cuneatus	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Ceanothus prostratus	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Ceanothus velutinus / Achnatherum nelsonii	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Cercocarpus ledifolius – Purshia tridentata var. tridentata / Festuca idahoensis	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Cercocarpus ledifolius / Pseudoroegneria spicata	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Chamaebatia foliolosa	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Galium angustifolium	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Purshia tridentata var. tridentata	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Purshia tridentata var. tridentata – Arctostaphylos patula / Achnatherum nelsonii	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Purshia tridentata var. tridentata – Ceanothus velutinus	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Purshia tridentata var. tridentata – Ribes cereum / Bromus orcuttianus	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Purshia tridentata var. tridentata / Achnatherum nelsonii / pumice	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Purshia tridentata var. tridentata / Balsamorhiza sagittata	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Purshia tridentata var. tridentata / Senecio integerrimus / granite	Ponderosa pine forest	G5	S4			Y	N
	Pinus ponderosa / Symphoricarpos longiflorus	Ponderosa pine forest	G5	S4			Y	N
	Pseudotsuga menziesii – Arbutus menziesii	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii – Chrysolepis chrysophylla – Notholithocarpus densiflorus	Douglas fir forest	G5	S4	G3	S3	Y	N
	Pseudotsuga menziesii – Chrysolepis chrysophylla – Notholithocarpus densiflorus / Mahonia nervosa	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii – Chrysolepis chrysophylla / Rhododendron macrophyllum – Mahonia nervosa	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii – Chrysolepis chrysophylla / Rhododendron macrophyllum – Quercus sadleriana – Gaultheria shallon	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii – Chrysolepis chrysophylla / Rhododendron macrophyllum – Quercus sadleriana – Xerophyllum tenax	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii – Chrysolepis chrysophylla / Xerophyllum tenax	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii – Quercus agrifolia	Douglas fir forest	G5	S4	G3	S3?	Y	N
	Pseudotsuga menziesii – Quercus chrysolepis	Douglas fir forest	G5	S4	G3?		Y	N
	Pseudotsuga menziesii – Quercus chrysolepis – Arbutus menziesii / Toxicodendron diversilobum	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii – Quercus chrysolepis – mixed conifer / Polystichum munitum	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii – Quercus chrysolepis – Notholithocarpus densiflorus	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii – Quercus garryana var. garryana / grass	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii – Quercus garryana var. garryana / Holodiscus discolor	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii – Quercus kelloggii	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii – Umbellularia californica	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii / Acer circinatum – Mahonia nervosa	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii / Achlys triphylla	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii / Chimaphila umbellata	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii / Corylus cornuta	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii / Gaultheria shallon	Douglas fir forest	G5	S4	G3G4		Y	N
	Pseudotsuga menziesii / Linnaea borealis	Douglas fir forest	G5	S4	G4		Y	N
	Pseudotsuga menziesii / Mahonia nervosa	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii / Quercus vaccinilfolia	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii / Quercus vaccinilfolia – Notholithocarpus densiflorus var. echinoides	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii / Quercus vaccinilfolia – Rhododendron macrophyllum	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii / Rhododendron spp.	Douglas fir forest	G5	S4			Y	N
	Pseudotsuga menziesii / Vancouveria planipetala	Douglas fir forest	G5	S4			Y	N
Pseudotsuga menziesii – Notholithocarpus densiflorus	*Pseudotsuga menziesii – Notholithocarpus densiflorus*	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Acer macrophyllum) / Polystichum munitum	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Calocedrus decurrens) / Festuca californica	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Chamaecyparis lawsoniana – Alnus rubra) / riparian	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Chamaecyparis lawsoniana – Tsuga heterophylla) / Vaccinium ovatum	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Chamaecyparis lawsoniana – Umbellularia californica) / Vaccinium ovatum	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Chamaecyparis lawsoniana) / Acer circinatum	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Chamaecyparis lawsoniana) / Gaultheria shallon	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Chamaecyparis lawsoniana) / Mahonia nervosa / Linnaea borealis	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Chamaecyparis lawsoniana) / Vaccinium ovatum	Douglas fir – tanoak forest	G3	S3			Y	N

Sensitive Natural Communities and Alliances Occuring in Coastal and Inland Mendocino County								
Alliance Scientific Name	Association Scientific Name	Alliance Common Name	Alliance Global Rank	Alliance State Rank	Associciation Global Rank	Association Rank State	Rare ?	Present?
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Chamaecyparis lawsoniana) / Vaccinium ovatum – Rhododendron occidentale	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Chamaecyparis lawsoniana) / Vaccinium parvifolium	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Chrysolepis chrysophylla) / Gaultheria shallon	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Chrysolepis chrysophylla) / Pteridium aquilinum	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Chrysolepis chrysophylla) / Rhododendron macrophyllum – Gaultheria shallon	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Pinus lambertiana)	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Quercus chrysolepis) / Mahonia nervosa	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Quercus chrysolepis) / Mahonia nervosa – Gaultheria shallon	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Quercus chrysolepis) / rockpile	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Quercus chrysolepis) / Toxicodendron diversilobum	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Quercus chrysolepis) / Vaccinium ovatum	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Quercus chrysolepis, Quercus kelloggii) / Toxicodendron diversilobum	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Quercus kelloggii) / Rosa gymnocarpa	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – (Umbellularia californica) / Toxicodendron diversilobum	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus / Iris	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus – Thuja plicata / Vaccinium ovatum – Gaultheria shallon	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus / Acer circinatum	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus / Achlys triphylla	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus / Aralia californica	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus / Chimaphila umbellata	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus / Cornus nuttallii	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus / Corylus cornuta	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus / Gaultheria shallon	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus / Mahonia nervosa	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus / Quercus vaccinilfolia – Holodiscus discolor	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus / Rhododendron macrophyllum	Douglas fir – tanoak forest	G3	S3	G2	S2	Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus / Taxus brevifolia	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus / Toxicodendron diversilobum – (Lonicera hispidula)	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus / Vaccinium ovatum – (Gaultheria shallon)	Douglas fir – tanoak forest	G3	S3			Y	N
	Pseudotsuga menziesii – Notholithocarpus densiflorus / Whipplea modesta	Douglas fir – tanoak forest	G3	S3			Y	N
	Quercus agrifolia – Quercus garryana – Quercus kelloggii	Mixed oak forest	G4	S4			Y	N
	Quercus chrysolepis – Pinus lambertiana	Canyon live oak forest	G5	S5			Y	N
	Quercus chrysolepis – Pinus ponderosa	Canyon live oak forest	G5	S5			Y	N
	Quercus chrysolepis – Quercus garryana var. garryana / Pentagramma triangularis	Canyon live oak forest	G5	S5			Y	N
	Quercus chrysolepis – Quercus kelloggii – Acer macrophyllum	Canyon live oak forest	G5	S5			Y	N
	Quercus chrysolepis – Quercus lobata / Vitis californica	Canyon live oak forest	G5	S5			Y	N
	Quercus chrysolepis – Umbellularia californica / Vitis californica	Canyon live oak forest	G5	S5			Y	N
	Quercus chrysolepis / Arctostaphylos patula	Canyon live oak forest	G5	S5	G3?		Y	N
	Quercus chrysolepis / Ceanothus integerrimus	Canyon live oak forest	G5	S5			Y	N
	Quercus chrysolepis / Dryopteris arguta	Canyon live oak forest	G5	S5	G3?		Y	N
	Quercus chrysolepis / Styrax redivivus	Canyon live oak forest	G5	S5			Y	N
Quercus douglasii	*Quercus ×eplingii / Grass*	Blue oak woodland	G4	S4			Y	N
	Quercus douglasii – Juniperus californica / Ceanothus cuneatus	Blue oak woodland	G4	S4			Y	N
	Quercus douglasii – Juniperus californica / Cercocarpus montanus	Blue oak woodland	G4	S4	G3	S3	Y	N
	Quercus douglasii – Juniperus californica / Quercus john-tuckeri	Blue oak woodland	G4	S4	G3	S3	Y	N
	Quercus douglasii – Quercus lobata	Blue oak woodland	G4	S4			Y	N
	Quercus douglasii / Cercocarpus montanus / Bowlesia incana – Lithophragma affine	Blue oak woodland	G4	S4			Y	N
	Quercus douglasii / Selaginella hansenii – Navarretia pubescens	Blue oak woodland	G4	S4			Y	N
	Quercus kelloggii – Arbutus menziesii – Quercus agrifolia	California black oak forest	G4	S4	G3	S3	Y	N
	Quercus kelloggii – Pseudotsuga menziesii	California black oak forest	G4	S4			Y	N
	Quercus kelloggii – Pseudotsuga menziesii – Umbellularia californica	California black oak forest	G4	S4			Y	N
	Quercus kelloggii – Quercus agrifolia – pine / Holodiscus discolor	California black oak forest	G4	S4			Y	N
	Quercus kelloggii – Quercus lobata / grass	California black oak forest	G4	S4			Y	N
	Quercus kelloggii / Arctostaphylos patula	California black oak forest	G4	S4	G3?		Y	N
	Quercus kelloggii / Toxicodendron diversilobum – Styrax redivivus / Triteleia laxa	California black oak forest	G4	S4			Y	N
	Quercus wislizeni – Pinus ponderosa	Interior live oak woodland	G4	S4			Y	N
	Quercus wislizeni – Pinus sabiniana / Arctostaphylos manzanita	Interior live oak woodland	G4	S4			Y	N
	Quercus wislizeni – Salix laevigata / Frangula californica	Interior live oak woodland	G4	S4			Y	N
Salix laevigata	*Salix laevigata*	Red willow thickets	G3	S3	GNR		Y	N
	Salix laevigata – Cornus sericea / Scirpus microcarpus	Red willow thickets	G3	S3	G3	S3?	Y	N
	Salix laevigata – Salix lasiolepis	Red willow thickets	G3	S3			Y	N
	Salix laevigata – Salix lasiolepis / Artemisia douglasiana – Rubus ursinus	Red willow thickets	G3	S3			Y	N
	Salix laevigata – Salix lasiolepis / Baccharis salicifolia	Red willow thickets	G3	S3			Y	N
	Salix laevigata / Rosa californica	Red willow thickets	G3	S3			Y	N

Sensitive Natural Communities and Alliances Occuring in Coastal and Inland Mendocino County								
Alliance Scientific Name	**Association Scientific Name**	**Alliance Common Name**	**Alliance Global Rank**	**Alliance State Rank**	**Associciation Global Rank**	**Association Rank State**	**Rare ?**	**Present?**
	Salix laevigata / Salix lasiolepis / Artemisia douglasiana	Red willow thickets	G3	S3			Y	N
Sequoia sempervirens	*Sequoia sempervirens*	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens – Acer macrophyllum – Umbellularia californica	Redwood forest	G3	S3	G3	S3	Y	N
	Sequoia sempervirens – Acer macrophyllum / Polypodium californicum	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens – Alnus rubra / Rubus spectabilis	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens – Arbutus menziesii	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens – Arbutus menziesii / Vaccinium ovatum	Redwood forest	G3	S3	G3	S3	Y	N
	Sequoia sempervirens – Chrysolepis chrysophylla / Arctostaphylos glandulosa	Redwood forest	G3	S3	G2	S2?	Y	N
	Sequoia sempervirens – Hesperocyparis pigmaea	Redwood forest	G3	S3	G1	S1	Y	N
	Sequoia sempervirens – Notholithocarpus densiflorus / Carex globosa – Iris douglasiana	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens – Notholithocarpus densiflorus / Vaccinium ovatum	Redwood forest	G3	S3	G3	S3	Y	N
	Sequoia sempervirens – Pinus muricata	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens – Pseudotsuga menziesii – Arbutus menziesii	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens – Pseudotsuga menziesii – Notholithocarpus densiflorus	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens – Pseudotsuga menziesii – Notholithocarpus densiflorus – Chamaecyparis lawsoniana / Vaccinium ovatum	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens – Pseudotsuga menziesii – Umbellularia californica	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens – Pseudotsuga menziesii / Gaultheria shallon	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens – Pseudotsuga menziesii / Rhododendron macrophyllum	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens – Pseudotsuga menziesii / Vaccinium ovatum	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens – Tsuga heterophylla / Polystichum munitum	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens – Tsuga heterophylla / Rubus spectabilis	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens – Tsuga heterophylla / Vaccinium ovatum	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens – Umbellularia californica	Redwood forest	G3	S3	G3	S3	Y	N
	Sequoia sempervirens / (Pteridium aquilinum) – Woodwardia fimbriata	Redwood forest	G3	S3	G3	S3	Y	N
	Sequoia sempervirens / Blechnum spicant	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens / Mahonia nervosa	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens / Marah fabaceus – Vicia sativa ssp. nigra	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens / Oxalis oregana	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens / Polystichum munitum	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens / Pteridium aquilinum	Redwood forest	G3	S3			Y	N
	Sequoia sempervirens / Pteridium aquilinum – Trillium ovatum	Redwood forest	G3	S3			Y	N
Sequoiadendron giganteum	*Sequoiadendron giganteum – Pinus lambertiana / Cornus nuttallii*	Giant sequoia forest	G3	S3			Y	N
Tsuga heterophylla	*Tsuga heterophylla – Pseudotsuga menziesii – Chamaecyparis lawsoniana*	Western hemlock forest	G5	S2			Y	N
Umbellularia californica	*Umbellularia californica*	California bay forest	G4	S3	G3	S3	Y	N
	Umbellularia californica – Acer macrophyllum	California bay forest	G4	S3	G3	S3?	Y	N
	Umbellularia californica – Aesculus californica / Holodiscus discolor	California bay forest	G4	S3	G3	S3	Y	N
	Umbellularia californica – Alnus rhombifolia	California bay forest	G4	S3	G3	S3	Y	N
	Umbellularia californica – Arbutus menziesii	California bay forest	G4	S3			Y	N
	Umbellularia californica – Juglans californica / Ceanothus spinosus	California bay forest	G4	S3	G3		Y	N
	Umbellularia californica – Notholithocarpus densiflorus	California bay forest	G4	S3	G3	S3	Y	N
	Umbellularia californica – Platanus racemosa	California bay forest	G4	S3	G3		Y	N
	Umbellularia californica – Pseudotsuga menziesii / Rhododendron occidentale	California bay forest	G4	S3	G3	S3?	Y	N
	Umbellularia californica – Quercus agrifolia	California bay forest	G4	S3			Y	N
	Umbellularia californica – Quercus agrifolia / (Genista monspessulana)	California bay forest	G4	S3			Y	N
	Umbellularia californica – Quercus agrifolia / Heteromeles arbutifolia – Toxicodendron diversilobum / Melica torreyana	California bay forest	G4	S3			Y	N
	Umbellularia californica – Quercus agrifolia / Toxicodendron diversilobum (Corylus cornuta)	California bay forest	G4	S3			Y	N
	Umbellularia californica – Quercus chrysolepis	California bay forest	G4	S3			Y	N
	Umbellularia californica – Quercus wislizeni	California bay forest	G4	S3			Y	N
	Umbellularia californica / Ceanothus oliganthus	California bay forest	G4	S3			Y	N
	Umbellularia californica / Polystichum munitum	California bay forest	G4	S3			Y	N
	Umbellularia californica / Toxicodendron diversilobum	California bay forest	G4	S3			Y	N
Shrub Alliance, Associations, and Stands								
Arctostaphylos (nummularia, sensitiva)	*Arctostaphylos nummularia*	Glossy leaf manzanita chaparral	G2G3	S2S3	G2	S2	Y	N
	Baccharis pilularis – Ceanothus thyrsiflorus	Coyote brush scrub	G5	S5	G3	S3?	Y	N
	Baccharis pilularis – Frangula californica – Rubus spp.	Coyote brush scrub	G5	S5			Y	N
	Baccharis pilularis – Holodiscus discolor	Coyote brush scrub	G5	S5			Y	N
	Baccharis pilularis / (Nassella pulchra – Elymus glaucus – Bromus carinatus)	Coyote brush scrub	G5	S5	G3	S3	Y	N
	Baccharis pilularis / Carex obnupta – Juncus patens	Coyote brush scrub	G5	S5			Y	N
	Baccharis pilularis / Danthonia californica	Coyote brush scrub	G5	S5			Y	N
	Baccharis pilularis / Deschampsia cespitosa	Coyote brush scrub	G5	S5	G2		Y	N
	Baccharis pilularis / Eriophyllum staechadifolium	Coyote brush scrub	G5	S5			Y	N
	Baccharis pilularis / Leymus triticoides	Coyote brush scrub	G5	S5			Y	N
	Baccharis pilularis / Polystichum munitum	Coyote brush scrub	G5	S5	G3		Y	N
	Ceanothus integerrimus – Quercus garryana var. fruticosa	Deer brush chaparral	G4	S4			Y	N
Ceanothus thyrsiflorus	*Ceanothus arboreus*	Blue blossom chaparral	G4	S4			Y	N
	Ceanothus incanus	Blue blossom chaparral	G4	S4			Y	N
	Ceanothus thyrsiflorus – Rubus ursinus	Blue blossom chaparral	G4	S4	G3	S3?	Y	N
	Ceanothus thyrsiflorus – Vaccinium ovatum – Rubus parviflorus	Blue blossom chaparral	G4	S4	G3	S3?	Y	N
Chrysolepis chrysophylla	*Chrysolepis chrysophylla – Arctostaphylos glandulosa*	Golden chinquapin thickets	G2	S2			Y	N
	Chrysolepis chrysophylla / Vaccinium ovatum	Golden chinquapin thickets	G2	S2			Y	N
Cornus sericea	*Cornus sericea*	Red osier thickets	G4	S3?			Y	N
	Cornus sericea – Salix exigua	Red osier thickets	G4	S3?			Y	N
	Cornus sericea – Salix lasiolepis	Red osier thickets	G4	S3?			Y	N
	Cornus sericea / Senecio triangularis	Red osier thickets	G4	S3?			Y	N
Diplacus aurantiacus	*Diplacus aurantiacus*	Bush monkeyflower scrub	G3	S3?	G3		Y	N
Frangula californica	*Frangula californica – Baccharis pilularis / Scrophularia californica*	California coffee berry scrub	G4	S4			Y	N
	Frangula californica ssp. tomentella / Hoita macrostachya	California coffee berry scrub	G4	S4			Y	N
Holodiscus discolor	*Holodiscus discolor – Arctostaphylos patula*	Ocean spray brush	G4	S3			Y	N
	Holodiscus discolor – Keckiella corymbosa	Ocean spray brush	G4	S3			Y	N
	Holodiscus discolor – Sambucus racemosa	Ocean spray brush	G4	S3			Y	N
	Holodiscus discolor / Achnatherum occidentale – Eriogonum nudum	Ocean spray brush	G4	S3			Y	N
	Holodiscus discolor / Mimulus suksdorfii	Ocean spray brush	G4	S3			Y	N
	Holodiscus discolor / Sedum obtusatum ssp. boreale – Cryptogramma acrostichoides	Ocean spray brush	G4	S3			Y	N

Sensitive Natural Communities and Alliances Occuring in Coastal and Inland Mendocino County								
Alliance Scientific Name	**Association Scientific Name**	**Alliance Common Name**	**Alliance Global Rank**	**Alliance State Rank**	**Associociation Global Rank**	**Association Rank State**	**Rare ?**	**Present?**
	Lupinus arboreus – Ericameria ericoides	Yellow bush lupine scrub	G4	S4			Y	N
Lupinus chamissonis – Ericameria ericoides	*Ericameria ericoides*	Silver dune lupine – mock heather scrub	G3	S3			Y	N
	Lupinus chamissonis	Silver dune lupine – mock heather scrub	G3	S3			Y	N
	Lupinus chamissonis – Ericameria ericoides	Silver dune lupine – mock heather scrub	G3	S3	G2		Y	N
Morella californica	*Morella californica*	Wax myrtle scrub	G3	S3			Y	N
Quercus chrysolepis (shrub)	*Quercus chrysolepis*	Canyon live oak chaparral	G3	S3			Y	N
	Quercus chrysolepis – Ceanothus integerrimus	Canyon live oak chaparral	G3	S3			Y	N
Rhododendron columbianum	*Rhododendron columbianum*	Western Labrador-tea thickets	G4	S2?			Y	N
	Rhododendron columbianum / Pinus contorta ssp. murrayana	Western Labrador-tea thickets	G4	S2?			Y	N
Rosa californica	*Rosa californica*	California rose briar patches	G3	S3			Y	N
	Rosa californica – Baccharis pilularis	California rose briar patches	G3	S3			Y	N
	Rosa californica / Schoenoplectus spp.	California rose briar patches	G3	S3			Y	N
Rubus (parviflorus, spectabilis, ursinus)	*Gaultheria shallon – Rubus ursinus*	Coastal brambles	G4	S3			Y	Y
	Ribes aureum	Coastal brambles	G4	S3			Y	N
	Rubus parviflorus	Coastal brambles	G4	S3			Y	N
	Rubus parviflorus – Rubus spectabilis – Rubus ursinus	Coastal brambles	G4	S3			Y	N
	Rubus spectabilis	Coastal brambles	G4	S3			Y	N
	Rubus ursinus	Coastal brambles	G4	S3			Y	N
	Salix exigua – Brickellia californica	Sandbar willow thickets	G5	S4			Y	N
Salix lasiolepis	*Salix lasiolepis*	Arroyo willow thickets	G4	S4			Y	N
	Salix lasiolepis – Baccharis pilularis – Rubus ursinus	Arroyo willow thickets	G4	S4	G3	S3	Y	N
	Salix lasiolepis – Salix lucida	Arroyo willow thickets	G4	S4	G3		Y	N
	Salix lasiolepis / Barren Ground	Arroyo willow thickets	G4	S4			Y	N
	Salix lasiolepis / Rosa woodsii / Mixed Herbs	Arroyo willow thickets	G4	S4			Y	N
Salix sitchensis	*Salix sitchensis*	Sitka willow thickets	G4	S3?			Y	N
Sambucus nigra	*Sambucus nigra*	Blue elderberry stands	G3	S3			Y	N
	Sambucus nigra – Heteromeles arbutifolia	Blue elderberry stands	G3	S3			Y	N
	Sambucus nigra / Leymus condensatus	Blue elderberry stands	G3	S3			Y	N
Toxicodendron diversilobum	*Toxicodendron diversilobum – Artemisia californica / Leymus condensatus*	Poison oak scrub	G4	S4	G3		Y	N
	Toxicodendron diversilobum – Baccharis pilularis – Rubus parviflorus	Poison oak scrub	G4	S4	G3		Y	N
Herbaceous Alliance, Associations, and Stands								
Abronia latifolia – Ambrosia chamissonis	*Abronia latifolia – Erigeron glaucus*	Dune mat	G3	S3			Y	N
	Abronia latifolia – Leymus mollis	Dune mat	G3	S3			Y	N
	Ambrosia chamissonis	Dune mat	G3	S3			Y	N
	Ambrosia chamissonis – Abronia maritima – Cakile maritima	Dune mat	G3	S3			Y	N
	Ambrosia chamissonis – Abronia umbellata	Dune mat	G3	S3			Y	N
	Ambrosia chamissonis – Eriophyllum staechadifolium – (Lupinus arboreus)	Dune mat	G3	S3			Y	N
	Ambrosia chamissonis – Malacothrix incana – Carpobrotus chilensis – Poa douglasii	Dune mat	G3	S3			Y	N
	Artemisia pycnocephala – Calystegia soldanella	Dune mat	G3	S3			Y	N
	Artemisia pycnocephala – Cardionema ramosissimum	Dune mat	G3	S3	G3		Y	N
	Artemisia pycnocephala – Ericameria ericoides	Dune mat	G3	S3			Y	N
	Artemisia pycnocephala – Poa douglasii	Dune mat	G3	S3			Y	N
	Artemisia pycnocephala – Polygonum paronychia	Dune mat	G3	S3			Y	N
	Cakile maritima – Abronia maritima	Dune mat	G3	S3			Y	N
	Cakile maritima – Ambrosia chamissonis – Carpobrotus edulis	Dune mat	G3	S3			Y	N
	Calystegia macrostegia – Erigeron glaucus – Malacothrix incana	Dune mat	G3	S3			Y	N
	Poa douglasii – Lathyrus littoralis	Dune mat	G3	S3			Y	N
	Astragalus didymocarpus – Lotus wrangelianus	Fiddleneck - Phacelia Fields	G4	S4			Y	N
	Phacelia ciliata	Fiddleneck - Phacelia Fields	G4	S4			Y	N
	Phacelia tanacetifolia	Fiddleneck - Phacelia Fields	G4	S4			Y	N
Bromus carinatus – Elymus glaucus	*Bromus carinatus*	California brome – blue wildrye prairie	G3	S3	G3	S3	Y	N
	Elymus glaucus	California brome – blue wildrye prairie	G3	S3	G3	S3	Y	N
	Pteridium aquilinum – Grass	California brome – blue wildrye prairie	G3	S3	G3	S3	Y	N
	Thermopsis californica – Bromus carinatus – Annual Brome	California brome – blue wildrye prairie	G3	S3	G3	S3	Y	N
Calamagrostis canadensis	*Calamagrostis canadensis*	Bluejoint reed grass meadows	G5	S3	GNR		Y	N
Calamagrostis canadensis	*Calamagrostis canadensis – Carex utriculata*	Bluejoint reed grass meadows	G5	S3			Y	N
	Calamagrostis canadensis – Dodecatheon redolens	Bluejoint reed grass meadows	G5	S3			Y	N
	Calamagrostis canadensis – Scirpus microcarpus	Bluejoint reed grass meadows	G5	S3			Y	N
Calamagrostis nutkaensis	*Calamagrostis nutkaensis*	Pacific reed grass meadows	G4	S2			Y	Y
	Calamagrostis nutkaensis – Carex (obnupta) – Juncus (patens)	Pacific reed grass meadows	G4	S2			Y	N
	Calamagrostis nutkaensis / Baccharis pilularis	Pacific reed grass meadows	G4	S2			Y	N
Camassia quamash	*Camassia quamash / Sphagnum subsecundum*	Small camas meadows	G4?	S3?			Y	N
Carex barbarae	*Carex barbarae*	White-root beds	G2?	S2?			Y	N
Carex densa	*Carex densa – Juncus xiphioides*	Dense sedge marshes	G2?	S2?			Y	N
	Carex densa – Lolium perenne – Juncus spp.	Dense sedge marshes	G2?	S2?			Y	N
Carex nudata	*Carex nudata*	Torrent sedge patches	G3	S3			Y	N
Carex obnupta	*Carex obnupta*	Slough sedge swards	G4	S3			Y	N
	Carex obnupta – Juncus lescurii	Slough sedge swards	G4	S3			Y	N
	Carex obnupta – Juncus patens	Slough sedge swards	G4	S3			Y	N
Danthonia californica	*Danthonia californica*	California oat grass prairie	G4	S3			Y	N
	Danthonia californica – (Briza maxima – Vulpia bromoides)	California oat grass prairie	G4	S3			Y	N
	Danthonia californica – Aira caryophyllea	California oat grass prairie	G4	S3	G3		Y	N
	Danthonia californica – Arrhenatherum elatius	California oat grass prairie	G4	S3			Y	N
	Danthonia californica – Elymus elymoides	California oat grass prairie	G4	S3			Y	N
	Danthonia californica – Nassella pulchra	California oat grass prairie	G4	S3			Y	N
Darlingtonia californica	*Darlingtonia californica*	California pitcher plant fens	G4?	S3			Y	N
Deschampsia cespitosa	*Deschampsia cespitosa*	Tufted hair grass meadows	G5	S4?	G4		Y	N
	Deschampsia cespitosa – Anthoxanthum odoratum	Tufted hair grass meadows	G5	S4?			Y	N
	Deschampsia cespitosa – Danthonia californica	Tufted hair grass meadows	G5	S4?	G2	S2	Y	N
	Deschampsia cespitosa – Eryngium armatum	Tufted hair grass meadows	G5	S4?			Y	N
	Deschampsia cespitosa – Holcus lanatus	Tufted hair grass meadows	G5	S4?			Y	N
	Deschampsia cespitosa – Horkelia marinensis	Tufted hair grass meadows	G5	S4?	G3	S1?	Y	N
	Deschampsia cespitosa var. holciformis	Tufted hair grass meadows	G5	S4?			Y	N
	Distichlis spicata – Ambrosia chamissonis	Salt grass flats	GU	S4			Y	N
	Distichlis spicata – Jaumea carnosa	Salt grass flats	GU	S4			Y	N
	Distichlis spicata – Sarcocornia pacifica	Salt grass flats	GU	S4			Y	N
	Distichlis spicata (– Baccharis douglasii – Equisetum hymenale)	Salt grass flats	GU	S4			Y	N
	Eleocharis macrostachya – (Pleuropogon californicus)	Pale spike rush marshes	G4	S4			Y	N
	Eleocharis macrostachya – Lasthenia glaberrima	Pale spike rush marshes	G4	S4			Y	N
Elymus (elymoides, multisetus)	*Elymus multisetus – (Eschscholzia californica – Plantago erecta)*	Squirreltail patches	G4	S4?			Y	N
	Elymus multisetus – Plantago erecta – Lolium perenne	Squirreltail patches	G4	S4?			Y	N
Deschampsia cespitosa	*Deschampsia cespitosa*	Tufted hair grass meadows	G5	S4?			Y	N
	Deschampsia cespitosa – Anthoxanthum odoratum	Tufted hair grass meadows	G5	S4?			Y	N
	Deschampsia cespitosa – Bistorta bistortoides	Tufted hair grass meadows	G5	S4?			Y	N
	Deschampsia cespitosa – Danthonia californica	Tufted hair grass meadows	G5	S4?			Y	N

Sensitive Natural Communities and Alliances Occuring in Coastal and Inland Mendocino County								
Alliance Scientific Name	**Association Scientific Name**	**Alliance Common Name**	**Alliance Global Rank**	**Alliance State Rank**	**Associciation Global Rank**	**Association Rank State**	**Rare ?**	**Present?**
	Deschampsia cespitosa – Eryngium armatum	Tufted hair grass meadows	G5	S4?			Y	N
	Deschampsia cespitosa – Holcus lanatus	Tufted hair grass meadows	G5	S4?			Y	N
	Deschampsia cespitosa – Horkelia marinensis	Tufted hair grass meadows	G5	S4?			Y	N
	Deschampsia cespitosa var. holciformis	Tufted hair grass meadows	G5	S4?			Y	N
Elymus glaucus Montane	*Elymus glaucus – Carex feta*	Blue wild rye montane meadows	G3?	S3?	G2?		Y	N
	Elymus glaucus – Carex pellita	Blue wild rye montane meadows	G3?	S3?			Y	N
	Elymus glaucus – Heracleum maximum	Blue wild rye montane meadows	G3?	S3?			Y	N
Eryngium aristulatum	*Eryngium aristulatum – Lupinus bicolor*	California button-celery patches	G2	S2			Y	N
	Hemizonia congesta	California button-celery patches	G2	S2			Y	N
	Lupinus bicolor	California poppy – lupine fields	G4	S4	G3	S3	Y	N
Festuca idahoensis	*Festuca californica*	Idaho fescue grassland	G4	S3?			Y	N
	Festuca idahoensis – Achillea millefolium	Idaho fescue grassland	G4	S3?			Y	N
	Festuca idahoensis – Bromus carinatus	Idaho fescue grassland	G4	S3?			Y	N
	Festuca idahoensis – Danthonia californica	Idaho fescue grassland	G4	S3?			Y	N
	Festuca idahoensis – Festuca rubra	Idaho fescue grassland	G4	S3?			Y	N
Festuca rubra	*Festuca rubra*	Red fescue grassland	G4	S3?			Y	N
Frankenia salina	*Frankenia salina*	Alkali heath marsh	G4	S3			Y	N
	Frankenia salina – Distichlis spicata	Alkali heath marsh	G4	S3			Y	N
	Frankenia salina – Limonium californicum – Monanthochloe littoralis – Sarcocornia pacifica	Alkali heath marsh	G4	S3			Y	N
Glyceria (elata, striata)	*Glyceria elata*	Manna grass meadows	G4	S3?			Y	N
	Glyceria elata – Lotus oblongifolius	Manna grass meadows	G4	S3?			Y	N
	Glyceria elata – Scirpus microcarpus	Manna grass meadows	G4	S3?			Y	N
	Glyceria striata	Manna grass meadows	G4	S3?			Y	N
Grindelia (camporum, stricta)	*Grindelia stricta*	Gum plant patches	G2G3	S2S3			Y	N
Heterotheca (oregona, sessiliflora)	*Heterotheca oregona*	Goldenaster patches	G3	S3	G3	S3	Y	N
	Heterotheca sessiliflora	Goldenaster patches	G3	S3	G3	S3	Y	N
Hordeum brachyantherum	*Hordeum brachyantherum*	Meadow barley patches	G2	S2	G2		Y	N
	Hordeum brachyantherum – Poa pratensis	Meadow barley patches	G2	S2			Y	N
	Hordeum brachyantherum – Polypogon monspeliensis	Meadow barley patches	G2	S2			Y	N
Hydrocotyle (ranunculoides, umbellata)	*Hydrocotyle ranunculoides*	Mats of floating pennywort	G4	S3?			Y	N
	Hydrocotyle ranunculoides – Schoenoplectus pungens	Mats of floating pennywort	G4	S3?			Y	N
Juncus (oxymeris, xiphioides)	*Juncus oxymeris*	Iris-leaf rush seeps	G2?	S2?			Y	N
	Juncus xiphioides	Iris-leaf rush seeps	G2?	S2?			Y	N
Juncus lescurii	*Juncus (lescurii) – Distichlis spicata*	Salt rush swales	G3	S2?			Y	N
	Juncus lescurii	Salt rush swales	G3	S2?			Y	N
Lasthenia californica – Plantago erecta – Vulpia microstachys	*Erigeron glaucus – Lasthenia californica*	California goldfields – dwarf plantain – small fescue flower fields	G4	S4			Y	N
	Lasthenia (californica, gracilis)	California goldfields – dwarf plantain – small fescue flower fields	G4	S4			Y	N
	Lasthenia californica – Lupinus bicolor – Layia platyglossa – Bromus spp.	California goldfields – dwarf plantain – small fescue flower fields	G4	S4			Y	N
	Lasthenia californica – Plantago erecta – Hesperevax sparsiflora	California goldfields – dwarf plantain – small fescue flower fields	G4	S4			Y	N
	Lasthenia minor	California goldfields – dwarf plantain – small fescue flower fields	G4	S4			Y	N
	Layia platyglossa	California goldfields – dwarf plantain – small fescue flower fields	G4	S4			Y	N
	Micropus californicus	California goldfields – dwarf plantain – small fescue flower fields	G4	S4			Y	N
	Vulpia microstachys	California goldfields – dwarf plantain – small fescue flower fields	G4	S4			Y	N
	Vulpia microstachys – Plantago erecta	California goldfields – dwarf plantain – small fescue flower fields	G4	S4			Y	N
Lasthenia glaberrima	*Lasthenia glaberrima – Lupinus bicolor*	Smooth goldfields vernal pool bottoms	G2	S2			Y	N
	Lasthenia glaberrima – Pleuropogon californicus	Smooth goldfields vernal pool bottoms	G2	S2			Y	N
	Lasthenia glaberrima – Trifolium variegatum	Smooth goldfields vernal pool bottoms	G2	S2			Y	N
Leymus cinereus – Leymus triticoides	*Leymus triticoides – Bromus spp. – Avena spp.*	Ashy ryegrass – creeping ryegrass turfs	G3	S3			Y	N
	Leymus triticoides – Carduus pycnocephalus – Geranium dissectum	Ashy ryegrass – creeping ryegrass turfs	G3	S3			Y	N
	Leymus triticoides – Lolium perenne	Ashy ryegrass – creeping ryegrass turfs	G3	S3			Y	N
	Leymus triticoides – Poa secunda	Ashy ryegrass – creeping ryegrass turfs	G3	S3			Y	N
Leymus condensatus	*Leymus condensatus*	Giant wild rye grassland	G3	S3			Y	N
Leymus mollis	*Leymus mollis – Abronia latifolia – (Cakile sp.)*	Sea lyme grass patches	G4	S2			Y	N
	Leymus mollis – Ammophila arenaria	Sea lyme grass patches	G4	S2			Y	N
	Leymus mollis – Carpobrotus edulis	Sea lyme grass patches	G4	S2			Y	N
Mimulus (guttatus)	*Mimulus guttatus*	Common monkey flower seeps	G4?	S3?			Y	N
	Mimulus guttatus – (Mimulus spp.)	Common monkey flower seeps	G4?	S3?			Y	N
	Mimulus guttatus – Vulpia microstachys	Common monkey flower seeps	G4?	S3?			Y	N
Nassella spp. – Melica spp.	*Melica californica*	Needle grass - melic grass grassland	G4	S4			Y	N
	Melica torreyana	Needle grass - melic grass grassland	G4	S4			Y	N
	Nassella lepida	Needle grass - melic grass grassland	G4	S4			Y	N
	Nassella pulchra	Needle grass - melic grass grassland	G4	S4			Y	N
	Nassella pulchra – Achnatherum lemmonii	Needle grass - melic grass grassland	G4	S4			Y	N
	Nassella pulchra – Avena spp. – Bromus spp.	Needle grass - melic grass grassland	G4	S4			Y	N
	Nassella pulchra – Corethrogyne filaginifolia	Needle grass - melic grass grassland	G4	S4			Y	N
	Nassella pulchra – Distichlis spicata – Bromus spp.	Needle grass - melic grass grassland	G4	S4			Y	N
	Nassella pulchra – Erodium spp. – Avena barbata	Needle grass - melic grass grassland	G4	S4			Y	N
	Nassella pulchra – Hemizonia congesta	Needle grass - melic grass grassland	G4	S4			Y	N
	Nassella pulchra – Leontodon saxatilis	Needle grass - melic grass grassland	G4	S4			Y	N
	Nassella pulchra – Lolium perenne – (Trifolium spp.)	Needle grass - melic grass grassland	G4	S4			Y	N
	Nassella pulchra – Lolium perenne – Astragalus gambelianus – Lepidium nitidum	Needle grass - melic grass grassland	G4	S4			Y	N
	Nassella pulchra – Lolium perenne – Plantago erecta Serpentine	Needle grass - melic grass grassland	G4	S4			Y	N
	Nassella pulchra – Melica californica – annual grass	Needle grass - melic grass grassland	G4	S4			Y	N
	Nassella pulchra – Plantago lanceolata	Needle grass - melic grass grassland	G4	S4			Y	N
	Nassella pulchra – Sanicula bipinnatifida	Needle grass - melic grass grassland	G4	S4			Y	N
	Nassella pulchra / Baccharis pilularis	Needle grass - melic grass grassland	G4	S4			Y	N
Oenanthe sarmentosa	*Oenanthe sarmentosa*	Water-parsley marsh	G4	S2?			Y	N
Oxyria digyna	*Draba lemmonii – Oxyria digyna*	Mountain sorrel patches	G4	S3?			Y	N
Plagiobothrys nothofulvus	*Plagiobothrys nothofulvus – Castilleja exserta – Lupinus nanus*	Popcorn flower fields	G4	S4			Y	N
Poa secunda	*Poa secunda – Bromus rubens*	Curly blue grass grassland	G4	S3?			Y	N
	Poa secunda ssp. secunda	Curly blue grass grassland	G4	S3?			Y	N
Sarcocornia pacifica (Salicornia depressa)	*Salicornia bigelovii*	Pickleweed mats	G4	S3			Y	N
	Sarcocornia pacifica – Atriplex prostrata	Pickleweed mats	G4	S3			Y	N
	Sarcocornia pacifica – Bolboschoenus maritimus	Pickleweed mats	G4	S3			Y	N
	Sarcocornia pacifica – Brassica nigra	Pickleweed mats	G4	S3			Y	N
	Sarcocornia pacifica – Cotula coronopifolia	Pickleweed mats	G4	S3			Y	N
	Sarcocornia pacifica – Distichlis spicata	Pickleweed mats	G4	S3			Y	N

Sensitive Natural Communities and Alliances Occuring in Coastal and Inland Mendocino County								
Alliance Scientific Name	**Association Scientific Name**	**Alliance Common Name**	**Alliance Global Rank**	**Alliance State Rank**	**Associciation Global Rank**	**Association Rank State**	**Rare ?**	**Present?**
	Sarcocornia pacifica – Echinochloa crus-galli – Polygonum – Xanthium strumarium	Pickleweed mats	G4	S3			Y	N
	Sarcocornia pacifica – Frankenia salina	Pickleweed mats	G4	S3			Y	N
	Sarcocornia pacifica – Grindelia stricta	Pickleweed mats	G4	S3			Y	N
	Sarcocornia pacifica – Jaumea carnosa	Pickleweed mats	G4	S3			Y	N
	Sarcocornia pacifica – Jaumea carnosa – Distichlis spicata	Pickleweed mats	G4	S3			Y	N
	Sarcocornia pacifica – Lepidium latifolium	Pickleweed mats	G4	S3			Y	N
	Sarcocornia pacifica – Spartina foliosa	Pickleweed mats	G4	S3			Y	N
	Sarcocornia pacifica / algae	Pickleweed mats	G4	S3			Y	N
	Sarcocornia pacifica / annual grasses (Polypogon, Hordeum, Lolium)	Pickleweed mats	G4	S3			Y	N
	Sarcocornia pacifica Managed	Pickleweed mats	G4	S3			Y	N
	Sarcocornia pacifica Tidal	Pickleweed mats	G4	S3			Y	N
Schoenoplectus (acutus, californicus)	*Schoenoplectus californicus*	Hardstem and California bulrush marshes	GU	S3S4			Y	N
	Schoenoplectus californicus – Schoenoplectus acutus	Hardstem and California bulrush marshes	GU	S3S4			Y	N
	Schoenoplectus californicus – Schoenoplectus acutus / Rosa californica	Hardstem and California bulrush marshes	GU	S3S4			Y	N
	Schoenoplectus californicus – Typha latifolia	Hardstem and California bulrush marshes	GU	S3S4			Y	N
Scirpus microcarpus	*Scirpus microcarpus*	Small-fruited bulrush marsh	G4	S2	G4		Y	N
Sparganium (angustifolium)	*Sparganium angustifolium*	Mats of bur-reed leaves	G4	S3?			Y	N
Trifolium variegatum	*Trifolium variegatum*	White-tip clover swales	G3?	S3?			Y	N
	Trifolium variegatum – Juncus bufonius	White-tip clover swales	G3?	S3?			Y	N
	Trifolium variegatum – Lolium perenne – Leontodon saxatilis	White-tip clover swales	G3?	S3?			Y	N

Special-Status Wildlife with Potential Occurrence on the Project Site.								
Scientific name	Common Name	**Federal Status**	**State Status**	**G**	**S**	**Organization: Code**	**Habitat**	**Observed?**
INVERTEBRATES								
Bombus caliginosus	Obscure Bumblebee	None	None	G4?	S1S2	IUCN:VU	Inhabits open grassy coastal prairies and Coast Range meadows. Nesting occurs underground as well as above ground in abandoned bird nests. Males patrol circuits in search of mates. Reported to DFW as within 5 miles of project site.is an This species is very similar to the common yellow-faced bumblebee (Bombus vosnesenskii), differentiated by the structure of the male genitalia. he obscure bumblebee tends to have longer hairs, however, and yellow hairs are found on the underside of the abdomen.	N
Bombus occidentalis	Western bumble bee	None	Candidate Endangered	G2G3	S1	USFS:S	Populations in central California have declined since the 1990's. It visits flowers in a variety of habitats. Identified by a white patch on its abdomen hind tip. None recorded from coastal Mendocino County at http://www.xerces.org/bumblebees.	N
Coelus globosus	Globose dune beetle	None	None	G1G2	S1S2	IUCN:VU	Subterranean beetle that tunnels through sand under dune vegetation. Since coastal dune habitat in California is diminishing, the beetle is a special-status species.	N
Danaus plexippus pop. 1	monarch - California overwintering population	None	None	G4T2T3	S2S3	USFS:S	Ranges from North and South America and the Caribbean to Australia, New Zealand, the oceanic islands of the Pacific, Mauritius, the Canary Islands of the Atlantic, and, most recently, Western Europe. A predominantly open country, frost intolerant species whose range of breeding habitats is greatly dependent upon the presence of asclepiad flora (milkweeds). The monarch requires dense tree cover for overwintering, and the majority of the present sites in California are associated with Eucalyptus trees, specifically the blue gum, Eucalyptus globulus. These trees were introduced from Australia and have filled the role of native species that have been been reduced by logging.	N
Helminthoglypta arrosa pomoensis	Pomo bronze shoulderband snail	None	None	G2G3T1	S1	IUCN:DD	Found near the coast in heavily-timbered redwood canyons of Mendocino County, from Big River and Russian Gulch watersheds. Found under redwoods. Generally, in somewhat moist duff. Found in scrub in forest opening under a power line in Russian Gulch.	N
Lycaeides argyrognomon lotis	lotis blue butterfly	Endangered	None	G5TH	SH	XERCES:CI	Not seen since 1983, it is primarily from Mendocino County but historically from northern Sonoma and possibly Marin Counties. Inhabits wet meadows, damp coastal prairie, and potentially bogs or poorly-drained sphagnum-willow bogs where soils are waterlogged and acidic. Presumed host plant is *Hosackia gracilis*.	N
Noyo intersessa	Ten Mile shoulderband snail	None	None	G2	S2	None	Known from a few locations in Mendocino County with limited habitat information. Known from Ten Mile Dunes.	N
Speyeria zerene behrensii	Behren's silverspot butterfly	Endangered	None	G5T1	S1	XERCES:CI	Historically from near the City of Mendocino, Mendocino County, south to the area of Salt Point State Park, Sonoma County. Now presumed to be from Manchester south to Salt Point area. Inhabits coastal terrace prairie with caterpillar host plants: violet (*Viola adunca*) and adult nectar sources: thistles, asters, etc.	N
FISH								
Cottus gulosus	riffle sculpin	None	None	G5	S3S4	CDFW:SSC	Found in many increasingly isolated watersheds in the Central Valley drainage and the central coast. Lives in permanent, cool, headwater streams where riffles and rocky substrates predominate. Such streams are clear and shaded, with moderate gradients.	N
Entosphenus tridentatus	Pacific lamprey	None	None	G4	S4	AFS:VU BLM:S CDFW:SSC USFS:S	Anadromous lamprey found in freshwater rivers around the Pacific Rim, from Japan to Baja California. Adult Pacific Lamprey spawn in habitat similar to salmon: low gradient stream reaches, in gravel, often at the tailouts of pools and riffles.	N
Eucyclogobius newberry	tidewater goby	Endangered	None	G3	S3	AFS:EN IUCN:VU	Brackish water habitats along the California coast from Agua Hedionda lagoon, San Diego Co. to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	N
Lampetra ayresii	River lamprey	None	None	G5	S3	AFS:VU CDFW:SSC	Anadromous lamprey that uses riffle and side channel habitats for spawning and for ammocoete rearing where good water quality is essential. Adult Pacific Lamprey spawn in habitat similar to salmon: low gradient stream reaches, in gravel, often at the tailouts of pools and riffles.	N
Lampetra richardsoni	western brook lamprey	None	None	G4G5	S3S4	CDFW:SSC USFS:S	Live in coastal streams from southeastern Alaska south to California and inland in the Columbia and Sacramento-San Joaquin River drainages. Need clear, cold water in little disturbed watersheds as well as clean gravel near cover (boulders, riparian vegetation, logs etc.) for spawning. Additionally, they need habitats with slow moving water and fine sediments for rearing.	N
Lavinia symmetricus navarroensis	Navarro roach	None	None	G4T1T2	S2S3	CDFW:SSC	Habitat generalists. Found in warm intermittent streams as well as cold, well-aerated streams. Found in the lower, warmer reaches of streams in the Russian and Navarro River drainages.	N
Lavinia symmetricus parvipinnis	Gualala roach	None	None	G4T1T2	S2S3	CDFW:SSC	Habitat generalists. Found in warm intermittent streams as well as cold, well-aerated streams.	N
Oncorhynchus gorbuscha	pink salmon	None	None	G5	S1	None	In North America, they're found from the Arctic coast in Alaska and territories in Canada to central California, although they do not reproduce in significant numbers south of Puget Sound. Pink salmon do not reside in fresh water for an extended period. Require beds of loose, silt-free, coarse gravel for spawning.	N
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	Endangered	Endangered	G5T2T3Q	S2	AFS:EN	Require beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water and sufficient dissolved oxygen.	N
Oncorhynchus mykiss irideus pop. 16	steelhead-northern California DPS	Threatened	None	G5T2T3Q	S2S3	AFS:TH	Cool, swift, shallow water and clean loose gravel for spawning.	N
Oncorhynchus tshawytscha pop. 17	chinook salmon – California coastal ESU	Threatened	None	G5T2Q	S2	AFS:TH	Adults depend on pool depth and volume, amount of cover, and proximity to gravel. Water temps >27° C lethal to adults.	N
Spirinchus thaleichthys	longfin smelt	Candidate	Threatened	G5	S1	None	Inhabits estuaries along the Pacific Coast, from San Francisco Bay to Alaska. Open water of estuaries, both in seawater and freshwater areas, typically in the middle or deeper areas of the water column.	N
AMPHIBIANS & REPTILES								
Rhyacotriton variegatus	southern torrent (=seep) salamander	None	None	G3G4	S2S3	CDFW:SSC IUCN:LC USFS:S	Found in Coastal redwood, Douglas fir, mixed conifer, montane riparian, and montane hardwood-conifer forests from northern California south to Point Arena. Aquatic habitat includes permanent cold creeks, steams and seepages with low water flow; associated with moss-covered rocks within trickling water and the splash zone of waterfalls; old-growth coniferous forests with closed canopy; <50% cobble in creeks, remainder mixture of pebble, gravel and sand.	N
Ascaphus truei	Pacific tailed frog	None	None	G4	S3S4	CDFW:SSC IUCN:LC	Occurs in montane hardwood-conifer, redwood, Douglas-fir and ponderosa pine habitats. Coastal from Anchor Bay, Mendocino Co. to Oregon border. Cold, clear, rocky streams in wet forests. They do not inhabit ponds or lakes. A rocky streambed is necessary for cover for adults, eggs, and larvae. After heavy rains, adults may be found in the woods away from the stream.	N
Dicamptodon ensatus	California giant salamander	None	None	G3	S2S3	CDFW:SSC IUCN:NT	Found along the West Coast of North America from northern California to southern British Columbia. Found in a variety of aquatic habitats, including lakes, ponds, rivers, and streams. They prefer fast moving water to slow moving water. Cover is used for hiding, protection from the sun, and brooding eggs.	N

Scientific name	Common Name	Federal Status	State Status	G	S	Organization: Code	Habitat	Observed?
Rana aurora	northern red-legged frog	None	None	G4	S3	CDFW:SSC USFS:S	Found in humid forests, woodlands, grasslands, and streamsides in northwestern California. Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season. Integration zone between northern and California species is between Manchester and Elk.	N
Rana boylii	foothill yellow-legged frog	None	Endangered	G3	S3	BLM:S CDFW:SSC IUCN:NT USFS:S	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying.	N
Rana draytonii	California red-legged frog	Threatened	None	G2S3	S2S3	CDFW:SSC IUCN:VU	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 estivation habitat.	N
Taricha rivularis	red-bellied newt	None	None	G2	S2	CDFW:SSC IUCN:LC	Occur in coastal California north of San Francisco Bay, in Sonoma, Lake, Mendocino, and Humboldt counties, at elevations between 150–450. Range confined to the coast redwood belt, but not restricted to redwood forests. Adults migrate from terrestrial to aquatic habitats seasonally for breeding.	N
Emys marmorata marmorata	western pond turtle	None	None	G3G4	S3	BLM:S CDFW:SSC IUCN:VU USFS:S	Former scientific name: *Clemmys marmorata marmorata*. Associated with permanent or nearly permanent water in a wide variety of habitats. Requires basking sites. Nests sites may be found up to 0.5 km from water.	N
BIRDS								
Accipiter cooperii	Cooper's hawk (nesting)	None	None	G5	S4	CDFW:WL IUCN:LC	Nesting: woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	N
Accipiter gentilis	northern goshawk (nesting)	None	None	G5	S3	BLM:S CDF:S CDFW:SSC IUCN:LC USFS:S	Nesting: within and in vicinity of coniferous forest. Uses old nests, and maintains alternate sites. Usually nests on north slopes, near water. Red fir, lodge pole pine, Jeffrey pine, and aspens are typical nest trees. Northern goshawks typically nest in conifer forests containing large trees and an open understory on the west slope of the Sierra. There is historic nesting in Big River and Pudding Creek. Winter migrant on the coast.	N
Accipiter striatus	sharp-shinned hawk (nesting)	None	None	G5	S4	CDFW:WL IUCN:LC	Nesting: ponderosa pine, black oak, riparian deciduous, mixed conifer and Jeffrey pine habitats. Prefers riparian areas. North-facing slopes, with plucking perches are critical requirements. Nests usually within 275 ft. of water. Nests in dense, even-aged, single- layered forest canopy, usually nests in dense, pole and small-tree stands of conifers, which are cool, moist, well shaded, with little ground-cover, near water.	N
Agelaius tricolor	tricolored blackbird (nesting colony)	None	Threatened	G1G2	S1S2	BLM:S CDFW:SSC IUCN:EN NABCI:RWL USFWS:BCC	Nesting colony: highly colonial species, most numerous in central valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, such as cattails and foraging area with insect prey within a few km of the colony. Known inland from McGuire's Pond.	N
Ammodramus savannarum	grasshopper sparrow (nesting)	None	None	G5	S3	CDFW:SSC IUCN:LC	Nesting: dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs and scattered shrubs. Loosely colonial when nesting. Summer (breeding) resident in Mendocino County known from north of Ten Mile River.	N
Aquila chrysaetos	golden eagle (nesting & wintering)	None	None	G5	S3	BLM:S CDF:S CDFW:FP CDFW:WL IUCN:LC	Nesting and wintering: rolling foothills mountain areas, sage-juniper flats, desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	N
Ardea alba	great egret (nesting colony)	None	None	G5	S4	CDF:S IUCN:LC	Rookery: colonial nester in large trees. Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	N
Ardea herodias	great blue heron (nesting colony)	None	None	G5	S4	CDF:S IUCN:LC	Rookery: colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	N
Artemisiospiza belli belli	Bell's sage sparrow	None	None	G5T2T3	S3	CDFW:WL USFWS:BCC	Found from western United States to northwestern Mexico. Breed in coastal sagebrush, chaparral, and other open, scrubby habitats. In chaparral.	N
Asio flammeus	short-eared owl (nesting)	None	None	G5	S3	CDFW:SSC IUCN:LC	Found throughout much of North America and Eurasia. Prefer to live in marshes and bogs; they inhabit open, treeless areas.	N
Asio otus	long-eared owl (nesting)	None	None	G5	S3?	CDFW:SSC IUCN:LC	Range extends throughout temperate North America, through Europe and the former Soviet Union as far east as Japan. Inhabit dense vegetation close to grasslands, as well as open forests shrub lands from sea level up to 2000 m elevation	N
Athene cunicularia	burrowing owl (burrow sites and some winter sites)	None	None	G4	S3	BLM:S CDFW:SSC IUCN:LC USFWS:BCC	Burrow sites: open, dry annual or perennial grasslands, deserts and scrublands, and dunes characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	N
Brachyramphus marmoratus	marbled murrelet (nesting)	Threatened	Endangered	G3	S2	CDF:S IUCN:EN NABCI:RW	Nesting: feeds near-shore; nests inland along coast, from Eureka to Oregon border and from Half Moon Bay to Santa Cruz. Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas-fir. Presence of platforms (flat surface at least four inches in diameter) appears to be the most important stand characteristic for predicting murrelet presence. Stands can be: 1) mature (with or without an old- growth component); 2) old-growth; 3) young coniferous forests with platforms; and 4) include large residual trees in low densities sometimes less than one tree per acre.	N
Buteo regalis	ferruginous hawk (wintering)	None	None	G4	S3S4	CDFW:WL IUCN:LC USFWS:BCC	Usually east of the coastal belt, uncommon migrant in coastal Mendocino County seen in open areas such as Bald Hill and Manchester. Feeding habitat in open, treeless areas. Does not breed in California.	N
Cerorhinca monocerata	rhinoceros auklet (nesting colony)	None	None	G5	S3	CDFW:WL IUCN:LC	Breeds from California (the Channel Islands) to the Aleutian Islands in Alaska in North America. Winters both in offshore and inshore waters, exhibiting some migration. Nests in burrows dug into the soil, or in natural caves and cavities between 1 and 5 m deep.	N
Chaetura vauxi	Vaux's swift (nesting)	None	None	G5	S2S3	CDFW:SSC IUCN:LC	Nesting: redwood, Douglas fir, and other coniferous forests. Nests in large hollow trees and snags. Often nests in flocks. Forages over most terrains and habitats but shows a preference for foraging over rivers and lakes.The most important habitat requirement appears to be an appropriate nest-site in a large, hollow tree. Forages over most terrains and habitats, often high in theair. Shows an apparent preference for foraging over rivers and lakes.	N
Charadrius nivosus nivosus	western snowy plover (nesting)	Threatened	None	G3T3	S2	CDFW:SSC NABCI:RWL USFWS:BCC	Nesting: federal listing applies only to the pacific coastal population. Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting. Sand spits, dune-backed beaches, unvegetated beach strands, open areas around estuaries, and beaches at river mouths are the preferred coastal habitats for nesting. Less common nesting habitat includes salt pans, coastal dredged spoil disposal sites, dry salt ponds, and salt pond levees and islands.	N
Circus hudsonius	Northern harrier (nesting)	None	None	G5	S3	CDFW:SSC IUCN:LC	Northern harriers prefer sloughs, wet meadows, marshlands, swamps, prairies, plains, grasslands, and shrublands and perch on structures such as fence posts.Nesting habitat: nest on the ground, usually near water, or in tall grass, open fields, clearings, or on the water on a stick foundation, willow clump, or sedge tussock. Most nests built within patches of dense, often tall, vegetation (e.g., cattails) in undisturbed areas. They usually nest near hunting grounds.Foraging: They need open, low woody or herbaceous vegetation for nesting and hunting	N
Contopus cooperi	olive-sided flycatcher (nesting)	None	None	G4	S3	CDFW:SSC IUCN:NT NABCI:YWL USFWS:BCC	Breeds in montane and northern coniferous forests, at forest edges and openings, such as meadows and ponds. Tall standing dead trees are used as perch trees for catching flying insects. Accordingly, an open canopy is a key components of suitable habitat. Nest is an open cup of twigs, rootlets, and lichens, placed out near tip of horizontal branch of a tree.	N

Scientific name	Common Name	Federal Status	State Status	G	S	Organization: Code	Habitat	Observed?
Egretta thula	Snowy egret (nesting colony)	None	None	G5	S4	IUCN:LC	Rookery: colonial nester, with nest sites situated in protected beds of dense tules. Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	N
Elanus leucurus	white-tailed kite (nesting)	None	None	G5	S3S4	BLM:S CDFW:FP IUCN:LC	Nesting: rolling foothills/valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland, open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching. Winter congregation of at least 20 birds seen at Manchester State Park in early 2000's. One nest known from a THP in Albion ~2006; nest was at the edge of conifer forest with no pasture immediately adjacent.	N
Falco columbarius	Merlin (wintering)	None	None	G5	S3S4	CDFW:WL IUCN:LC	General wintering habitat: Uncommon winter migrants on the coast. Habitat apparently similar to breeding habitat, (open forest and grasslands). Regularly hunts prey (e.g., shorebirds) concentrated on tidal flats. Often winters in cities throughout its range, where frequently perches on buildings, power poles, and tall trees. Also winters in open woodland, grasslands, open cultivated fields, marshes, estuaries, and seacoasts. Frequents open habitats at low elevation near water and tree stands.	N
Falco peregrinus anatum	American peregrine falcon (nesting)	Delisted	Delisted	G4T4	S3S4	CDF:S CDFW:FP USFWS:BCC	Nesting: near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape on a depression or ledge in an open site.	N
Fratercula cirrhata	tufted puffin (nesting colony)	None	None	G5	S1S2	CDFW:SSC IUCN:LC	Nesting colony: open-ocean bird; nests along the coast on islands, islets, or (rarely) mainland cliffs free of human disturbance and mammalian predators. Nests in burrows or rock crevices when sod or earth in unavailable for burrowing. Occurs year-road offshore near breeding colonies in northern California, but more common in winter.Breeding records from Goat Rock, Mendocino Headlands State Park.	N
Haematopus bachmani	Black oystercatcher (nesting)	None	None	G5	SNR	IUCN:LC USFWS:BCC	From the Aleutian Islands to Baja California, the forage on intertidal macroinvertebrates along gravel or rocky shores and in the southern part of their range nest primarily on rocky headlands and offshore rocks.	N
Haliaeetus leucocephalus	bald eagle (nesting & wintering)	Delisted	Endangered	G5	S3	BLM:S CDF:S CDFW:FP IUCN:LC USFS:S USFWS:BCC	Nesting and wintering: ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter. Known from winter in Lake Cleone, MacKerricher State Park and Little River.	N
Hydrobates homochroa	ashy storm-petrel (nesting colony)	None	None	G2	S2	BLM:S CDFW:SSC IUCN:EN NABCI:RWL USFWS:BCC	Nests on several islands off the coast of California in the USA and northern Mexico. Usually found out on the open ocean, and nests on rocky island terrain.	N
Icteria virens	yellow-breasted chat (nesting)	None	None	G5	S3	CDFW:SSC IUCN:LC	Breeds from the southern plains of Canada to central Mexico. Breeds in areas of dense shrubbery, including abandoned farm fields, clearcuts, powerline corridors, fencerows, forest edges and openings, swamps, and edges of streams and ponds. Its habitat often includes blackberry bushes.	N
Larus californicus	California gull (nesting)	None	None	G5	S4	CDFW:WL IUCN:LC	Colony nesters and usually occurring on an island or vegetated offshore rock.	N
Melanerpes lewis	Lewis' woodpecker (nesting)	None	None	G4	S4	IUCN:LC NABCI:YWL USFWS:BCC	Breed in open ponderosa pine forests and burned forests with a high density of standing dead trees (snags). They also breed in woodlands near streams, oak woodlands, orchards, and pinyon-juniper woodlands.	N
Pandion haliaetus	Osprey (nesting)	None	None	G5	S4	CDF:S CDFW:WL IUCN:LC	Nesting: ocean shore, bays, fresh-water lakes, and larger streams.Large nests built in tree-tops within 6-7 to 15 miles of good fish-producing body of water. Flattened portions of partially broken off snags, trees, rocks, dirt pinnacles, cacti, and numerous man-made structures such as utility poles and duck blinds are used for nests. Furthest nest inland may be McGuire's Pond.	N
Passerculus sandwichensis alaudinus	Bryant's savannah sparrow	None	None	G5T2T3	S2S3	CDFW:SSC	Breeds widely across northern and central North America and winters primarily in the southern United States, Baja California, and mainland Mexico south to Guatemala and northern Honduras. Breed in open areas with low vegetation, including most of northern North America from tundra to grassland, marsh, and farmland.	N
Pelecanus occidentalis californicus	California brown pelican (nesting colony & communal roosts)	Delisted	Delisted	G4T3T4	S3	BLM:S CDFW:FP USFS:S	Range extends from British Columbia, Canada to Nayarit, Mexico, while their breeding range is between the Channel Islands and Central Mexico, Typically found on rocky or vegetated offshore islands, in harbors and marinas, in estuaries, and in shallow breakwaters and sheltered bays.	N
Phalacrocorax auritus	double-crested cormorant (nesting colony)	None	None	G5	S4	CDFW:WL IUCN:LC	Rookery site: colonial nester on coastal cliffs, offshore islands, and 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.	N
Picoides nuttallii	Nuttall's woodpecker (nesting)	None	None	G4G5	SNR	ABC:WLBCC IUCN:LC	Ranging from west of the Cascade mountains and in the Sierra Nevada from southern Oregon to Northern Baja California. Nests are excavated in dead branches or snags of various trees, usually in close association with oak woodlands and riparian zone, habitat vulnerable to development. At least one Mendocino Coast record from 2011 Audubon Christmas Bird Count.	N
Progne subis	purple martin (nesting)	None	None	G5	S3	CDFW:SSC IUCN:LC	Nesting: inhabits woodlands, low elevation coniferous forest of Douglas fir, Ponderosa pine, and Monterey pine. Nests in old woodpecker cavities mostly, also in human- made structures such as weep holes in bridges. Nest often located in tall, isolated trees and snags. Nesting on the Mendocino Coast known, in part, from Juan Creek, Ten Mile, Noyo, and Big River, and snags from Ten Mile River to Pudding Creek. Need open foraging habitats.	N
Riparia riparia	bank swallow (nesting)	None	Threatened	G5	S2	BLM:S IUCN:LC	Near water; fields, marshes, streams, lakes. Typically seen feeding in flight over (or near) water at all seasons. Nests in colonies in vertical banks of dirt or sand, usually along rivers or ponds, seldom away from water.	N
Selasphorus rufus	rufous hummingbird (nesting)	None	None	G5	S1S2	IUCN:LC USFWS:BCC	Breeds in open or shrubby areas, forest openings, yards and parks, and sometimes in forests, thickets, and meadows. Late winter and spring migrant on the California coast. Breeding range from southeast Alaska and as far south as northwestern California.	N
Selasphorus sasin	Allen's hummingbird (nesting)	None	None	G5	SNR	ABC:WLBCC IUCN:LC USFWS:BCC	Breeds only along a narrow strip of coastal California and southern Oregon. Nests in densely vegetated areas and forests. An early migrant compared with most North American birds, arriving in summer breeding grounds as early as January. Breeds in moist coastal areas, scrub, chaparral, and forests. Winters in forest edge and scrub clearings with flowers.	N
Setophaga occidentalis	hermit warbler (nesting)	None	None	G4G5	SNR	CDFW:SSC	Breeding range is relatively limited to the Pacific Coast and the Cascade and Sierra Nevada mountain ranges of Washington, Oregon, and California. Some winter along the coastal central and southern California, but most winter primarily in the mountains of western Mexico and Central America. Nesting habitats in Pacific northwest are coniferous forests with a high canopy volume, generally preferring mature stands of pine and Douglas fir. Avoids areas with a high	N
Setophaga petechia	yellow warbler (nesting)	None	None	G5	S3S4	CDFW:SSC USFWS:BCC	Nests from the Arctic Circle to Mexico. Bushes, swamp edges, streams, gardens. Breeds in a variety of habitats in east, including woods and thickets along edges of streams, lakes, swamps, and marshes, favoring willows, alders, and other moisture-loving plants.	N

Scientific name	Common Name	Federal Status	State Status	G	S	Organization: Code	Habitat	Observed?
Sphyrapicus ruber	red-breasted sapsucker (nesting)	None	None	G5	S4	None	Breeds primarily in coniferous forests, but also uses deciduous and riparian habitat, as well as orchards and power line corridors. The nest is a hole usually dug in a live deciduous tree (e.g. alder, willow, madrone) with possible preference for larger trees showing decay-softened wood.	N
Strix occidentalis caurina	northern spotted owl	Threatened	Threatened	G3G4T3	S2	CDF:S IUCN:NT NABCI:YWL	Old-growth forests or mixed stands of old-growth and mature trees. Occasionally in younger forests w/patches of big trees. High, multistory canopy dominated by big trees, many trees w/cavities or broken tops, woody debris, and space under canopy.	N
Mammals								
Antrozous pallidus	pallid bat	None	None	G4	S3	BLM:S CDFW:SSC IUCN:LC USFS:S WBWG:H	A wide variety of habitats deserts, grasslands, shrublands, woodlands and forests from sea level up through mixed conifer forests. Most common in open, dry habitats with rocky areas for roosting. A yearlong resident in most of the range. Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings where there is protection from high temperatures.	N
Aplodontia rufa nigra	Point Arena mountain beaver	Endangered	None	G5T1	S1	CDFW:SSC IUCN:LC	Generally known from 2 miles north of Bridgeport Landing to 5 miles south of the town of Point Arena. Coastal areas often near springs or seepages; mesic coastal scrub, northern dune scrub, edges of conifer forests, and riparian plant communities. North facing slopes of ridges and gullies with friable soils and thickets of undergrowth.	N
Arborimus pomo	Sonoma tree vole	None	None	G3	S3	CDFW:SSC IUCN:NT	Species split into red tree vole and Sonoma tree vole; approximate boundary between two species is Klamath River. Inhabits north coast fog belt from Oregon border to Somona Co. in old-growth and other forests, mainly Douglas-fir, redwood, and montane hardwood-conifer habitats. Feeds almost exclusively on Douglas-fir needles. Will occasionally take needles of pine, grand fir, hemlock or spruce.	N
Antrozous pallidus	pallid bat	None	None	G4	S3	BLM:S CDFW:SSC IUCN:LC USFS:S WBWG:H	Occur in semi-arid and arid landscapes in western North America. They are found primarily in grasslands, shrub-steppe, and desert environments with rocky outcrops, but also dry open oak or ponderosa forest, and open farmland. Roosts are most commonly rock crevices but buildings, bridges, live trees and snags are also used.	N
Corynorhinus townsendi	Townsend's big-eared bat	None	None	G4	S2	BLM:S CDFW:SSC IUCN:LC USFS:S WBWG:H	Generally found in the dry uplands throughout the West, but also occur in mesic coniferous and deciduous forest habitats along the Pacific coast. Unequivocally associated with areas containing caves and cave-analogs for roosting habitat. Requires spacious cavern-like structures for roosting during all stages of its life cycle. Typically, they use caves and mines, but have been noted roosting in large hollows of redwood trees, attics and abandoned buildings, lava tubes, and under bridges. Extremely sensitive to disturbance.	N
Eumetopias jubatus	Steller (=northern) sealion	Delisted	None	G3	S2	IUCN:EN MMC:SSC	Inhabit the colder temperate to subarctic waters of the North Pacific Ocean. They need both terrestrial and aquatic habitats. They mate and give birth on land, at traditional sites called rookeries. Haulout and rookery sites usually consist of beaches (gravel, rocky, or sand), ledges, and rocky reefs.	N
Eumops perotis californicus	western mastiff bat	None	None	G4G5T4	S3S4	BLM:S CDFW:SSC WBWG:H	Found from the coast of the southwestern United States into central Mexico and southeast to Cuba. Suitable habitat for the western mastiff bat consists of extensive open areas with potential roost locations having vertical faces to drop off from and take flight, such as crevices in rock outcropings and cliff faces, tunnels and tall buildings. Habitats include coastal and desert scrublands, annual and perennial grasslands, conifer and deciduous woodlands, as well as palm oases.	N
Lasionycteris noctivagans	silver-haired bat	None	None	G3G4	S3S4	IUCN:LC WBWG:M	Ranges throughout California in coastal and montane forests. May be found anywhere in California during spring and fall migrations. Primarily a forest (tree-roosting) bat associated with north temperate zone conifer and mixed conifer/hardwood forests. Prefers forested (frequently coniferous) areas adjacent to lakes, ponds, and streams. During migration, sometimes occurs in xeric areas.Roosts in dead or dying trees with exfoliating bark, extensive vertical cracks, or cavities, rock crevices, and occasionally under wood piles, in leaf litter, under foundations, and in buildings, mines and caves.The primary threat is likely loss of roosting habitat due to logging practices that fail to accommodate the roosting needs of this species (e.g., clusters of large snags).	N
Lasiurus blossevillii	western red bat	None	None	G4	S3	CDFW:SSC IUCN:LC WBWG:H	Locally common in some areas of California from Shasta County south to the Mexican border. California Central Valley is the species' primary breeding region.Species appears to be strongly associated with riparian habitats for roosting and foraging, particularly mature stands/large diameter of cottonwood/sycamore. Roosts in woodland borders, rivers, agricultural areas, and urban areas with mature trees in the foliage of large shrubs and trees, usually sheltering on the underside of overhanging leaves. It often hangs from one foot on the leaf petiole and may resemble a fruit or dead leaf. Rarely observed roosting in mines.	N
Lasiurus cinereus	hoary bat	None	None	G3G4	S4	IUCN:LC WBWG:M	Most widespread North American bat. Solitary species that winters along the coast and in southern California. Roosts in foliage of trees near ends of branches. Blends with the bark of trees. Highly associated with forested habitats but can be found in suburbs with old, large trees.	N
Martes caurina humboldtensis	Humboldt marten	Proposed Threatened	Endangered	G4G5T1	S1	CDFW:SSC USFS:S	Endemic to the coastal forests of northwestern California with a historical range described as "the narrow northwest humid coast strip, chiefly within the redwood belt" from the Oregon border to northern Sonoma county. However, the one known remnant Humboldt marten population occurs in the north-central portion of the described range in an area dominated by Douglas-fir and tanoak. Typically associated with closed-canopy, late-successional, mesic coniferous forests with complex physical structure near the ground. Very rare on the Mendocino coast.	N
Myotis evotis	long-eared myotis bat	None	None	G5	S3	BLM:S IUCN:LC WBWG:M	Widespread in California, but generally is believed to be uncommon in most of its range. It avoids the arid Central Valley and hot deserts, occurring along the entire coast and interior mountains. Found in nearly all brush, woodland, and forest habitats, from sea level to at least 9,000 ft., but coniferous woodlands and forests seem to be preferred. Roosts in loose bark in tall, open-canopied snags; stumps in south-facing clear-cuts with minimal vegetation overgrowth in younger forests, and conifer snags in older forests, rocks, caves, bridges and abandoned mines.	N
Myotis yumanensis	Yuma myotis bat	None	None	G5	S4	BLM:S IUCN:LC WBWG:LM	Optimal habitats are open forests and woodlands with sources of water over which to feed. Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings or crevices.	N
Pekania pennanti	Pacific fisher	None	None	G5	S2S3	BLM:S CDFW:SSC USFS:S	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. Use cavities, snags, logs and rocky areas for cover and denning. Need large areas of mature, dense forest. Very rare on the Mendocino coast.	N

Scientific name	Common Name	Federal Status	State Status	G	S	Organization: Code	Habitat	Observed?
Taxidea taxus	American badger	None	None	G5	S3	CDFW:SSC IUCN:LC	Live in dry, open grasslands, fields, and pastures. They can also live in deserts and marshes. They are found from high alpine meadows to sea level. Found from the west coast to Texas, Oklahoma, Missouri, Illinois, Ohio, Michigan and Indiana. It is also found in southern Canada in British Columbia, Manitoba, Alberta, and Saskatchewan.	N
Key for Counties: MEN: Mendocino, SO: Sonoma, CL: Clear Lake, HB: Humboldt, TR: Trinity								

Floristic List	
Taxon By Family	**Common Name**
FERNS AND ALLIES	
Dennstaedtiaceae	
Pteridium aquilinum var. pubescens	bracken; western bracken; hairy bracken fern
Dryopteridaceae	
Polystichum munitum	western sword fern
Equisetaceae	
Equisetum telmateia	giant horsetail
Polypodiaceae	
Polypodium glycyrrhiza	licorice fern
GYMNOSPERMS	
Cupressaceae	
Hesperocyparis macrocarpa	Monterey cypress
Pinaceae	
Pinus contorta ssp. contorta	shore pine; beach pine
Pinus radiata	Monterey pine
DICOTS	
Adoxaceae	
Sambucus racemosa var. racemosa	red elderberry
Aizoaceae	
Carpobrotus edulis	sea fig, hottentot fig, iceplant
Anacardiaceae	
Toxicodendron diversilobum	poison oak
Apiaceae	
Angelica hendersonii	Henderson's angelica
Daucus pusillus	rattlesnake weed, American wild carrot
Heracleum maximum	common cow parsnip
Araliaceae	
Hedera helix	English ivy
Asteraceae	
Achillea millefolium	yarrow
Anaphalis margaritacea	pearly everlasting
Arctotheca prostrata	prostrate cape weed
Artemisia douglasiana	mugwort, wormwood, Douglas' sagewort
Baccharis pilularis	coyote brush
Cirsium vulgare	bull thistle
Eriophyllum staechadifolium	seaside golden yarrow, seaside wooly sunflower, lizard's tail
Hypochaeris radicata	rough cat's ear, hairy cat's ear
Leontodon saxatilis	lesser hawkbit
Solidago spathulata ssp. spathulata	coast goldenrod, dune goldenrod
Soliva sessilis	common soliva, Field burrweed
Sonchus oleraceus	common sow thistle
Caryophyllaceae	
Stellaria media	common chickweed
Crassulaceae	
Dudleya farinosa	north coast dudleya, Bluff lettuce, Powdery liveforever
Sedum spathulifolium	yellow stonecrop, Broadleaf stonecrop, Pacific stonecrop
Cucurbitaceae	
Marah oregana	coast wild-cucumber; wild cucumber, coast manroot
Ericaceae	

Floristic List	
Taxon By Family	**Common Name**
Gaultheria shallon	salal
Vaccinium ovatum	California huckleberry
Euphorbiaceae	
Euphorbia peplus	petty spurge
Fabaceae	
Lotus corniculatus	bird's-foot trefoil, Birdfoot deervetch
Lotus tenuis	narrow-leaf bird's-foot trefoil
Lupinus littoralis var. variicolor	varied lupine, varied-color lupine
Trifolium wormskioldii	cows clover, coast clover
Vicia sativa	vetch
Geraniaceae	
Erodium botrys	long-beaked filaree, big heron bill, longbeak stork's bill
Erodium cicutarium	red-stemmed filaree
Geranium dissectum	cut-leaved geranium
Lamiaceae	
Prunella vulgaris var. lanceolata	lance-leaf self-heal
Stachys rigida	rough hedgenettle
Portulacaceae	
Claytonia perfoliata	miner's lettuce
Myricaceae	
Morella californica	wax-myrtle
Orobanchaceae	
Castilleja affinis ssp. affinis	coast Indian paintbrush, Wight's Indian Paint brush
Castilleja mendocinensis	Mendocino coast Indian paintbrush
Plantaginaceae	
Plantago lanceolata	English plantain, ribwort, narrow leaved plantain, ribgrass
Polygonaceae	
Rumex acetosella	common sheep sorrel
Rhamnaceae	
Ceanothus thyrsiflorus	blueblossom
Frangula californica	California coffeeberry
Rosaceae	
Fragaria chiloensis	beach strawberry
Rosa sp.	cultivated rose
Rosa californica	California wild rose
Rosa nutkana var. nutkana	Nootka rose
Rubus parviflorus	thimbleberry
Rubus ursinus	California blackberry
Rubiaceae	
Galium aparine	common bedstraw; cleavers; goose-grass
Saxifragaceae	
Heuchera micrantha	crevice alumroot
Scrophulariaceae	
Scrophularia californica	California figwort, California bee plant
Urticaceae	
Urtica dioica ssp. gracilis	American stinging nettle
Violaceae	
Viola adunca	western dog violet
MONOCOTS	

Floristic List	
Taxon By Family	**Common Name**
Amaryllidaceae	
Narcissus pseudonarcissus	daffodil
Cyperaceae	
Carex tumulicola	split-awn sedge
Iridaceae	
Iris douglasiana	Douglas' iris
Sisyrinchium bellum	blue-eyed grass
Juncaceae	
Luzula comosa	hairy wood rush
Orchidaceae	
Piperia elegans	hillside piperia
Poaceae	
Agrostis capillaris	colonial bentgrass
Agrostis stolonifera	creeping bentgrass
Anthoxanthum odoratum	sweet vernal grass
Briza maxima	big quaking grass; rattlesnake grass
Bromus diandrus	ripgut brome; ripgut
Bromus hordeaceus	soft chess
Bromus sitchensis var. carinatus	California brome
Bromus sitchensis var. maritimus	maritime brome
Calamagrostis nutkaensis	Pacific reedgrass
Danthonia californica	California oatgrass, wild oatgrass
Deschampsia cespitosa ssp. holciformis	coastal tufted hair-grass
Festuca arundinacea	tall fescue, meadow fescue
Festuca perennis	Italian rye grass
Holcus lanatus	velvet grass
Rytidosperma penicillatum	purple awned wallaby grass; hairy oat grass

ENVIRONMENTALLY SENSITIVE HABITAT AREAS DEFINED

Definition of Environmentally Sensitive Habitat Area

The Mendocino County Local Coastal Plan (LCP) and the California Coastal Act (CCA) define an Environmentally Sensitive Habitat Area (ESHA) as:

> "any area in which plant or animal life or their habitats are **either** rare **or** especially valuable because of their special nature or role in an ecosystem **and** which could be easily disturbed or degraded by human activities and developments".
>
> [**emphasis given]**

The Mendocino County LCP and California Coastal Commission (CCC) have identified specific types of ESHAs including: wetlands, sand dunes, estuaries, streams, rivers, lakes, open coastal waters, coastal waters, riparian habitats, other resource areas, special status species, and the habitat of special status species. For the purpose of this report, the following definitions were used to assess potential ESHAS present in the study area.

Wetland ESHAs

The Mendocino County Local Coastal Plan (LCP) and the California Coastal Act (CCA) define wetlands as:

> *"Lands within the Coastal Zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens."*

California Coastal Commission Administrative Regulations (Section 13577 (b)) provide the following detailed definition:

> *"Wetlands are lands where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent or drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salt or other substance in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats." In summary, a wetland in the coastal zone falls under CCA jurisdiction if any of the following conditions are present: wetland hydrology, dominance of wetland vegetation (hydrophytes), and/or presence of hydric soils."*

The Statewide Interpretive Guidelines for Identifying and Mapping Wetlands and Other Wet Environmentally Sensitive Habitat Areas (CCC 1981) use the CCA definition to establish technical criteria to delineate wetlands. These guidelines consider wetland hydrology as the most important parameter to identify a wetland within the coastal zone: "the single feature that most wetlands share is soil or substrate that is at least periodically saturated with or covered by water, and this is the feature used to describe wetlands in the Coastal Act. The water creates severe physiological problems for all plants and animals except those that are adapted for life in water or in saturated soil, and therefore only plants adapted to these wet conditions (hydrophytes) could thrive in these wet (hydric) soils. Thus, the presence or absence of hydrophytes and hydric soils make excellent physical parameters upon which to judge the existence of wetland habitat areas for the purposes of the Coastal Act, but they are not the sole criteria." The saturation of soil in a wetland must be at or near the surface (approximately one foot or less) for a period of time (usually more than two weeks) in order to facilitate anaerobic

soil reduction processes that produce wetland conditions.

Identifying the presence of either wetland classified plants or hydric soils is referred to as the "one parameter approach." This approach can be useful because wetland plants, wetland hydrology, and/or hydric soils often co-occur, especially in natural undisturbed areas. However, situations do exist where wetland classified plants are found in the absence of other wetland conditions. These areas are not wetlands and a delineation study must carefully scrutinize whether the wetland classified plants that are growing as hydrophytes in anaerobic soil conditions caused by wetland hydrology or not.

Examples of hydrophytic plants growing in non-wetland conditions include:

1) Deep-rooted trees (e.g., willows), capable of persisting in the presence of surface water or in dry conditions by tapping into deep groundwater sources; and,

2) Wetland-classified plants that are also salt-tolerant (e.g., alkali heath) can grow in the presence of either wetland conditions or saline soil conditions, but not necessarily both.

Similarly, hydric soils can be found in the absence of wetland hydrology or wetland classified plants. For example, hydric soils have been observed in upland areas where historic disturbances exposed substratum and in densely vegetated grasslands (Mollisols). A wetland delineation must determine if the hydric soil indicators are a result of frequent anaerobic conditions in the presence of hydrology or due to another cause.

In the Coastal Zone, the California Coastal Commission presumes an area is a wetland if any one of the following three-wetland indicators is present: wetland hydrology, wetland plants, or hydric soils. Exceptions to this exist if there is strong positive evidence of upland conditions, which should be obtained during the wet season. Evidence of upland conditions could include the following observations: a given area saturates only ephemerally following a substantial rainfall, soil is very permeable with no confining layer, or the land is steep and drains rapidly.

Hydrology: Depressions, seeps, and topographic low areas in the Study Area are surveyed for primary and secondary hydrological indicators. Primary indicators of wetland hydrology that offer direct evidence include: visible inundation or saturation, surface sediment deposits, oxidized root channels, and drift lines. Secondary indicators that offer indirect evidence include algal mats, shallow restrictive layers in the soil, or vegetation meeting the FAC-neutral test.

Soils: The Study Area is examined for hydric soil indicators according to Natural Resources Conservation Service guidelines (USDA 2006) where horizon depths, color, redoximorphic features, and texture characterize soil profiles. Soils formed under anaerobic wetland conditions generally have a low chroma matrix color, designated 0, 1, or 2, and contain mottles or other redoximorphic features. Soil color and chroma was determined using a Munsell soil color chart (Gretag Macbeth 2000) to identify soils as hydric.

Plants: The US Army Corps of Engineers developed a classification system for plant species known to occur in wetlands. The plant species are categorized based on the frequency that they have been observed in wetlands. Species classified as obligate (OBL), Facultative Wetland (FACW), and Facultative (FAC) are considered hydrophytic. If more than 50 percent of the plant species in a given area are hydrophytic, the area meets the wetland vegetation criterion and is presumed to be a jurisdictional wetland under the CCA.

Areas identified as potential wetlands by the presence of wetland plants are also examined for indicators of wetland hydrology. Positive indicators of wetland hydrology can include direct evidence (primary indicators) such as surface water, saturation, sediment deposits, and surface soil cracks, or indirect evidence (secondary indicators) such as drainage patterns and water-stained leaves.

Riparian ESHAs

The Mendocino County LCP recognizes drainages with associated riparian vegetation to be ESHAs. The Technical Criteria (CCC 1981) defines riparian vegetation as:

> *"that association of plant species which grows adjacent to freshwater watercourses, including perennial and intermittent streams, lakes, and other freshwater bodies. Riparian plant species and wetland plant species either require or tolerate a higher level of soil moisture than dryer upland vegetation, and are therefore generally considered hydrophytic."*

Special Status Species ESHAs

Special status species and their habitats are defined as ESHAs by the CCA and Mendocino County LCP. Special-status species include those species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing by the USFWS or CDFW. In addition, CDFW Species of Special Concern are given special consideration under the California Environmental Quality Act (CEQA). Species of Concern may only be protected as ESHAs if they are ranked by CDFW as imperiled in California (S3 or less). Plant species on California Native Plant Society (CNPS) Lists 1 or 2 are also considered special status species and are protected as ESHAs.

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

For Office Use:	Final database #:	Final vegetation type:	Alliance Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION — circle: (Relevé) or RA

Database #:	Date:	Name of recorder: Nicole Herrera
KING0001	5/31/2022	Other surveyors: Asa Spade
	UID: RE01	Location Name: King

GPS name: Pond trail — For Relevé only: Bearing°, left axis at ID point____ of Long / Short side

UTME _____ UTMN _____ Zone: 11 NAD83 GPS error: ft./ m./ PDOP ____

Decimal degrees: LAT 39°12.821' LONG 123°46.298'

GPS within stand? (Yes) / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____

and record: Base point ID _____ Projected UTMs: UTME _____ UTMN _____

Camera Name: BHWC Cardinal photos at ID point: 1465–1468

Other photos: 1469 SW→NE

Stand Size (acres): (<1), 1-5, >5 | Plot Area (m²): (100) ____ | Plot Dimensions 10 x 10 m | ~~RA Radius~~ ____ m

Exposure, Actual °: 40° (NE) NW SE SW Flat Variable | Steepness, Actual °: 9° 0° 1-5° (5-25°) >25

Topography: Macro: top (upper) mid lower bottom | Micro: (convex) flat concave undulating

Geology code: _____ Soil Texture code: _____ | (Upland) or Wetland/Riparian (circle one)

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H_2O: 0 BA Stems: 2 Litter: 90 Bedrock: 0 Boulder: 0 Stone: 0 Cobble: 0 Gravel: 0 Fines: 8 =100%

% Current year bioturbation Ø Past bioturbation present? Yes / (No) | % Hoof punch Ø

Fire evidence: Yes / (No) (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Interview w/ neighbor revealed this area was previously cleared during creation of subdivision. Vegetation has grown back w/in last 30 years.

Disturbance code / Intensity (L,M,H): ____/____ ____/____ ____/____ ____/____ ____/____ "Other" _____/____

II. HABITAT DESCRIPTION

Tree DBH : T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), S3 mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.) (H2) (>12" ht.)

Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)

III. INTERPRETATION OF STAND

Field-assessed vegetation Alliance name: Calamagrostis nutkaensis Herbaceous Alliance

Field-assessed Association name (optional) Calamagrostis nutkaensis Herbaceous Association

Adjacent Alliances/direction: coyote brush/S+W; mowed lawn/E; Monterey cypress/W; coastal scrub/N /

Confidence in Alliance identification: L M (H) Explain: _____

Phenology (E,P,L): Herb P Shrub ____ Tree ____ Other identification or mapping information:

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

Database #: KING0001 SPECIES SHEET

IV. VEGETATION DESCRIPTION

% NonVasc cover: 0 **Total % Vasc Veg cover:** 80

% Cover - **Conifer tree / Hardwood tree:** 1 / 0 **Regenerating Tree:** 0 **Shrub:** 8 **Herbaceous:** 75

Height Class - **Conifer tree / Hardwood tree:** 4 / 0 **Regenerating Tree:** 0 **Shrub:** 3 **Herbaceous:** 3

Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

Stratum categories: T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Stratum	Species	% cover	C	Final species determination
T	Pinus radiata	1		
S	Baccharis pilularis	3		
S	Ceanothus thyrsiflorus	3		
S	Rosa spp. caloregum	+		
S	Rubus ursinus	2		
S	Rosa nutkana	r		
H	Calamagrostis nutkaensis	4		
H	Holcus lanatus	5		
H	Anthoxanthum odoratum	5		
H	Briza maxima	2		
H	Bromus ritcheri maritimus	2		
H	Marah oregana	2		
H	Heracleum maximum	4		
H	Vicia sativa	r		
H	Angelica hendersonii	4		
H	Pteridium aquilinum	2		
H	Cirsium vulgare	r		
H	Plantago lanceolata	+		
H	Rumex acetosella	+		
H	Galium aparine	+		
H	Iris sp. ornamental	+		
H	Fragaria chiloensis	+		
H	Bromus diandrus	1		
H	Arctotheca prostrata	2		
H	Equisetum telmateia	r		
H	Sonchus oleraceus	r		
H	Geranium dissectum	r		
H	Daucus pusillus	r		

Unusual species: _____

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

For Office Use:	Final database #:	Final vegetation type:	Alliance Association

I. LOCATIONAL/ENVIRONMENTAL DESCRIPTION — circle: Relevé or (RA)

Database #:	Date:	Name of recorder: Nicole Herrera
KINA0002	5/31/2022	Other surveyors: ASQ spade
	UID: RA01	Location Name: King

GPS name: Pomo snail

For Relevé only: Bearing°, left axis at ID point____ of Long / Short side

UTME 39°12.8331 UTMN 123°46.2941 Zone: 11 NAD83 GPS error: ft./ m./ PDOP ____

Decimal degrees: LAT ____ . ____ LONG ____ . ____

GPS within stand? (Yes) / No If No, cite from GPS to stand: distance (m) ____ bearing ° ____ inclination ° ____

and record: Base point ID ____ Projected UTMs: UTME ____ UTMN ____

Camera Name: BHWC Cardinal photos at ID point:

Other photos:

Stand Size (acres): <1, (1-5), >5 | Plot Area (m^2): 100 / ____ | Plot Dimensions ____ x ____ m | RA Radius 50 m

Exposure, Actual °: 10 (NE) NW SE SW Flat Variable | Steepness, Actual °: 27° 0° 1-5° >5-25° (>25)

Topography: Macro: top upper (mid) lower bottom | Micro: convex flat (concave) undulating

Geology code: ____ Soil Texture code: ____ | (Upland) or Wetland/Riparian (circle one)

*substrate inaccessible due to slope

% Surface cover: (Incl. outcrops) (>60cm diam) (25-60cm) (7.5-25cm) (2mm-7.5cm) (Incl sand, mud)

H_20: 0 BA Stems: 2 Litter: 8 Bedrock: 0 Boulder: 0 Stone: 0 Cobble: 0 Gravel: 0 Fines: 90 =100%

% Current year bioturbation Ø Past bioturbation present? Yes / (No) | % Hoof punch Ø

Fire evidence: Yes / (No) (circle one) If yes, describe in Site history section, including date of fire, if known.

Site history, stand age, comments:

Downslope of subdivision on bluff edge.

Disturbance code / Intensity (L,M,H): ____/____ ____/____ ____/____ ____/____ ____/____ "Other" ____/____

II. HABITAT DESCRIPTION

Tree DBH : T1 (<1" dbh), T2 (1-6" dbh), T3 (6-11" dbh), T4 (11-24" dbh), T5 (>24" dbh), T6 multi-layered (T3 or T4 layer under T5, >60% cover)

Shrub: S1 seedling (<3 yr. old), S2 young (<1% dead), (S3) mature (1-25% dead), S4 decadent (>25% dead)

Herbaceous: H1 (<12" plant ht.), H2 (>12" ht.)

Desert Riparian Tree/Shrub: 1 (<2ft. stem ht.), 2 (2-10ft. ht.), 3 (10-20ft. ht.), 4 (>20ft. ht.)

Desert Palm/Joshua Tree: 1 (<1.5" base diameter), 2 (1.5-6" diam.), 3 (>6" diam.)

III. INTERPRETATION OF STAND

Field-assessed vegetation Alliance name: Gaultheria Rubus shallon - ursinus shrubland Alliance

Field-assessed Association name (optional): Gaultheria Rubus shallon - ursinus shrubland Association

Adjacent Alliances/direction: Pacific wood grass + coyote bush / S ; Pacific oleon / N ; Mowed lawn / E+W / ____

Confidence in Alliance identification: L (M) H Explain: ____

Phenology (E,P,L): Herb ____ Shrub P Tree ____ Other identification or mapping information:

Combined Vegetation Rapid Assessment and Relevé Field Form

(Revised March 27, 2018)

Database #: KING0002 SPECIES SHEET

IV. VEGETATION DESCRIPTION

% NonVasc cover: 0 **Total % Vasc Veg cover:** 75

% Cover - **Conifer tree / Hardwood tree:** 0 / 0 **Regenerating Tree:** 0 **Shrub:** 36 **Herbaceous:** 42

Height Class - Conifer tree / Hardwood tree: 0 / 0 **Regenerating Tree:** 0 **Shrub:** 3 **Herbaceous:** 3

Height classes: 1=<1/2m, 2=1/2-1m, 3=1-2m, 4=2-5m, 5=5-10m, 6=10-15m, 7=15-20m, 8=20-35m, 9=35-50m, 10=>50m

Stratum categories: T=Tree, A = SApling, E = SEedling, S = Shrub, H= Herb, N= Non-vascular

% Cover Intervals for reference: r = trace, + = <1%, 1-5%, >5-15%, >15-25%, >25-50%, >50-75%, >75%

Stratum	Species	% cover	C	Final species determination
S	Morella californica	5		
S	Rosa californica	5		
S	Gaultheria shallon	10		
S	Rubus ursinus	10		
S	Rubus parviflorus	2		
S	Baccharis pilularis	1		
S	Toxicodendron diversilobum	3		
S	Lupinus littoralis	+		
H	Calamagrostis nutkaensis	2		
H	Marah oregana	10		
H	Urtica dioica	3		
H	Polystichum munitum	8		
H	Pteridium aquilinum	3		
H	Iris douglasiana	1		
H	Artemisia douglasiana	1		
H	Angelica hendersonii	2		
H	Agrostis stolonifera	4		
H	Bromus diandrus	1		
H	Equisetum telmateia	2		
H	Heracleum maximum	1		
H	Castilleja mendocinensis	r		
H	Dudleya farinosa	r		
H	Scrophularia californica	1		
H	Achillea millefolium	+		
H	Heuchera micrantha	r		
H	Polypodium glycyrrhiza	r		
H	Holcus lanatus	3		
H	Sedum spathulifolium	r		

Unusual species: _____

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: 2731 Seaside Dr City/County: Albion / Mendocino Sampling Date: 4/5/22
Applicant/Owner: King State: CA Sampling Point: SP #1
Investigator(s): A. Spade, N. Herrera Section, Township, Range: 29, T10N R17W
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 6
Subregion (LRR): A Lat: 39°12.823' Long: 123°46.301 Datum: NAD83
Soil Map Unit Name: Cabrillo-Heeser complex, 0-5% slopes NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: SP01 chosen due to dominance of Calamagrostis nutkaensis in area.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30)			
1. Pinus radiata	4	Y	UPL
2.			
3.			
4.			
	4 = Total Cover		
Sapling/Shrub Stratum (Plot size: 20)			
1. Ceanothus thyrsiflorus	2		
2. Bachris pilularis	6	Y	UPL
3.			
4.			
5.			
	12 = Total Cover	6/2.4	
Herb Stratum (Plot size: 10)			
1. Calamagrostis nutkaensis	35	Y	FACW
2. Anthoxanthum odoratum	15	Y	FACU
3. Rumex acetosella	2		
4. Marah oreganus	2		
5. Plantago lanceolata	1		
6. Cirsium vulgare	+		
7. Galium aparine	+		
8. Heracleum maximum	1		
9. Narcissus sp.	1		
10. Bromus carinatus	1		
11.			
	60 = Total Cover	30/12	
Woody Vine Stratum (Plot size: 10)			
1. Rubus ursinus	2		
2.			
	2 = Total Cover		
% Bare Ground in Herb Stratum ____			

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
__ 1 - Rapid Test for Hydrophytic Vegetation
__ 2 - Dominance Test is >50%
__ 3 - Prevalence Index is ≤3.0[1]
__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
__ 5 - Wetland Non-Vascular Plants[1]
__ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Tree stratum <5%, so lumped into sapling/shrub stratum. Woody vine stratum <5%, so lumped into herb stratum. NO hydrophytic vegetation indicators observed.

SOIL

Sampling Point: SP01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR2/1	100					sandy loam	sand grains visible.
18-20+	10YR2/1	85	10YR4/2	15	D	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:
No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No wetland hydrology indicators observed.

US Army Corps of Engineers

Western Mountains, Valleys, and Coast – Version 2.0

Mendocino County Coastal Zoning Code, Table 4. Section 20.496.020 ESHA – Development Criteria – King	
(A)	***Buffer Areas.*** *A buffer area shall be established adjacent to all environmentally sensitive habitat areas. The purpose of this buffer area shall be to provide for a sufficient area to protect the environmentally sensitive habitat from degradation resulting from future developments and shall be compatible with the continuance of such habitat areas.*
	The proposed development is to build a single-family residence with decks, a courtyard and attached garage. Associated development includes installing and connecting to a septic system and installing a gravel driveway. There are two types of presumed Environmentally Sensitive Habitat Areas (ESHAs) within 100ft of the proposed development. **Special Status Plant ESHA** - One species of special status plants was identified in the study area - **Mendocino coast paintbrush** (Castilleja mendocinensis CRPR 1B.2). **Plant Community ESHA** – Two special status plant communities were identified on the property: **salal – berry brambles** (G3?S3?) and **Pacific reedgrass meadow** (G4S2). Mitigation measures within **Section 7** of the Biological Scoping, Wetland Delineation, Behren's Silverspot Butterfly Survey, & Botanical Survey Report address the potential impacts from proposed development and how they can be avoided or minimized so that impacts are reduced to less than significant levels. Due to parcel constraints, proposed development will be within 100ft of the presumed ESHAs present at the site. The development will approximately 90ft from the Mendocino coast paintbrush and should be effectively buffered by this distance. However, development is proposed within ~45ft of the salal-berry brambles and a portion of the development will directly impact the Pacific reedgrass meadow. These two resources will be further discussed in Section 4 of this Reduced Buffer Analysis (RBA) and a Report of Compliance. Wynn Coastal Planning and Biology (WCPB) recommends installing orange construction fencing in-between proposed development and the presumed ESHAs to the greatest extent practical and seeding areas of bare soil with native erosion control seed mix and/or covering the area with biodegradable erosion control materials (e.g. coconut fiber, jute, weed free straw). WCPB recommends removing prostrate cape weed and establishing Pacific reed grass in at least as much area as the Pacific reed grass directly impacted by the project. The footprint of proposed development within the Pacific reedgrass community is estimated to be ~630ft^2. Prostrate cape weed is dominant within ~1173ft^2 on the subject parcel adjacent to the Pacific reedgrass community, and non-native grassland an additional ~1476ft^2, providing ample opportunity to complete the project with more Pacific reedgrass than at the start of the project. Pacific reedgrass within the area to be impacted by the construction should be transplanted into a 1260ft^2 Pacific reedgrass habitat enhancement area east of the Pacific reedgrass community. This is discussed in more detail in the main report.
(1)	***Width.*** *The width of the buffer area shall be a minimum of one hundred (100) feet, unless an applicant can demonstrate, after consultation and agreement with the California Department of Fish and Game, and County Planning staff, that one hundred (100) feet is not necessary to protect the resources of that particular habitat area from possible significant disruption caused by the proposed development. The buffer area shall be measured from the outside edge of the Environmentally Sensitive Habitat Areas and shall not be less than fifty (50) feet in width. New land division shall not be allowed which will create new parcels entirely within a buffer area. Developments permitted within a buffer area shall generally be the same as those uses permitted in the adjacent Environmentally Sensitive Habitat Area.*

Mendocino County Coastal Zoning Code, Table 4. Section 20.496.020 ESHA – Development Criteria – King	
	Based on the analysis below WCPB recommends buffer distances for the following presumed ESHAs: • **Mendocino coast paintbrush** - 50ft buffer • **Salal-berry brambles** – 100ft buffer • **Pacific reedgrass meadow** – 100ft buffer Since proposed development cannot stay greater than 50ft away from salal-berry brambles and pacific reedgrass meadow no reduction in buffer is requested for these ESHAs and they will be further discussed in Section 4 of the RBA. Buffer areas were measured from the center GPS point of special status plants and the outside edge (dripline of vegetation) of the special status plant communities resulting from ground surveys and aerial photo interpretation. It is the professional opinion of WCPB that a buffer area of 100ft is not necessary to protect the special status resources from the specified proposed development and subsequent use of the property. The project was specifically designed to avoid direct impacts to ESHA. Due to parcel constraints development will necessarily need to occur within 50ft of ESHA. Consultation with California Department of Fish and Wildlife (CDFW) is recommended to obtain their opinion on the buffers recommended by WCPB. CDFW and County Planning Staff opinions will be needed to determine the final appropriate buffer widths between ESHAs and proposed development. New land division will not be occurring for the proposed project.
1 (a)	***Biological Significance of Adjacent Lands.*** *Lands adjacent to a wetland, stream, or riparian habitat area vary in the degree to which they are functionally related to these habitat areas. Functional relationships may exist if species associated with such areas spend a significant portion of their life cycle on adjacent lands. The degree of significance depends upon the habitat requirements of the species in the habitat area (e.g. nesting, feeding, breeding, or resting).* *Where a significant functional relationship exists, the land supporting this relationship shall also be considered to be part of the ESHA, and the buffer zone shall be measured from the edge of these lands and be sufficiently wide to protect these functional relationships. Where no significant functional relationships exist, the buffer shall be measured from the edge of the wetland, stream, or riparian habitat that is adjacent to the proposed development.*
	No wetlands, streams, or riparian habitat were observed in the study area. The Mendocino coast paintbrush was observed in and is a part of the salal-berry brambles plant community which is already considered a presumed ESHA. The surrounding upland coyote brush scrub, common velvet grass – sweet vernal grass meadow, and Monterey pine trees are not functionally related to the presumed ESHAs onsite and therefore, should not be considered part of the ESHAs. The 50ft ESHA buffer should be measured the center GPS point of Mendocino coast paintbrush. Special status amphibians have the potential to be present in these upland communities while moving between water sources. Special status migratory bird species may use these upland areas for feeding, nesting, resting or breeding. Pre-construction nesting bird surveys and amphibian avoidance training are listed as mitigation measures to protect these animals that have the potential to be present.
1(b)	***Sensitivity of Species to Disturbance.*** *The width of the buffer zone shall be based, in part, on the distance necessary to ensure that the most sensitive species of plants and animals will not be disturbed significantly by the permitted development. Such a determination shall be based on the following after consultation with the Department of Fish and Game or others with similar expertise:* *(1b-i) Nesting, feeding, breeding, resting, or other habitat requirements of both resident and migratory fish and wildlife species;* *(1b-ii) An assessment of the short-term and long-term adaptability of various species to human disturbance;* *(1b-iii) An assessment of the impact and activity levels of the proposed development on the resource.*

Mendocino County Coastal Zoning Code, Table 4. Section 20.496.020 ESHA – Development Criteria – King	
	A buffer width of 50ft from the Mendocino coast paintbrush presumed ESHA should be sufficient to ensure that this special status plant is not significantly disturbed by the proposed development. Since the Mendocino coast paintbrush is along the bluff face it will not be directly impacted by development since the geotechnical bluff setback limits development close to the bluff edge. All development is proposed on the bluff top and orange construction fencing will be installed in-between the proposed development area and the presumed plant community ESHAs. Since no construction, staging, or spoils will be allowed beyond the orange construction fencing no impacts to the Mendocino coast brush are anticipated. Mendocino coast paintbrush is often seen along the bluff edge and bluff face of many developed coastal properties so it is documented that Mendocino coast paintbrush can continue to exist on developed coastal parcels when appropriate mitigation measures are followed.
1(c)	***Susceptibility of Parcel to Erosion.*** *The width of the buffer zone shall be based, in part, on an assessment of the slope, soils, impervious surface coverage, runoff characteristics, and vegetative cover of the parcel and to what degree the development will change the potential for erosion. A sufficient buffer to allow for the interception of any additional material eroded as a result of the proposed development should be provided.*
	The subject parcel gently slopes north until it reaches the bluff edge where is rapidly slopes down towards the Pacific Ocean. The bluff edge is anticipated to slowly erode overtime (long term bluff retreat); however, the geotechnical setback ensures the proposed development will not speed up the rate of erosion overtime and ensures that the development will not fall into the ocean for the 75-year economic life of the structure. The remainder of the parcel where development will occur is relatively flat with no obvious indications of erosion (i.e. rills or gullies). Mitigation measures have been recommended in **Section 7** of the main biological report to avoid or minimize potential for erosion to impact resources present such as seeding areas of bare soil with native erosion control seed mix and/or covering the area with biodegradable erosion control materials (e.g. coconut fiber, jute, weed free straw) or other construction best management practices.
1(d)	***Use of Natural Topographic Features to Locate Development.*** *Hills and bluffs adjacent to ESHA's shall be used, where feasible, to buffer habitat areas. Where otherwise permitted, development should be located on the sides of hills away from ESHA's. Similarly, bluff faces should not be developed, but shall be included in the buffer zone.*
	The are no hills on the property that will buffer habitat areas. The Mendocino coast paintbrush is growing along the bluff face so is not likely to be directly impacted by construction if mitigation measures are followed.
1(e)	***Use of Existing Cultural Features to Locate Buffer Zones.*** *Cultural features (e.g. roads and dikes) shall be used, where feasible, to buffer habitat areas. Where feasible, development shall be located on the side of roads, dikes, irrigation canals, flood control channels, etc., away from the ESHA.*
	There are no cultural features on the property that will buffer habitat areas.
1(f)	***Lot Configuration and Location of Existing Development.*** *Where an existing subdivision or other development is largely built-out and the buildings are a uniform distance from a habitat area, at least that same distance shall be required as a buffer zone for any new development permitted. However, if that distance is less than one hundred (100) feet, additional mitigation measures (e.g. planting of native vegetation) shall be provided to ensure additional protection. Where development is proposed in an area that is largely undeveloped, the widest and most protective buffer zone feasible shall be required.*

Mendocino County Coastal Zoning Code, Table 4. Section 20.496.020 ESHA – Development Criteria – King	
	The parcel is located within the Pacific Reefs subdivision and the adjacent parcels are already developed with single-family residences. Due to the small parcel sizes in the Pacific Reefs subdivision many of the houses in this subdivision are adjacent to or within ESHA. The house on the neighboring parcel to the west will be just as close to the salal-berry scrub as the proposed residence. The house of the neighboring parcel to the east is not as close to the pacific reedgrass as the proposed development; however, it should be noted that the neighbor mowing onto the subject parcel is likely the reason the pacific reedgrass is not evident on this neighboring parcel. Orange construction fencing will prevent construction, staging materials, and/or spoils from entering the presumed ESHAs.
1(g)	***Type and Scale of Development Proposed.*** *The type and scale of the proposed development will, to a large degree, determine the size of the buffer zone necessary to protect the ESHA. Such evaluations shall be made on a case-by-case basis depending upon the resources involved, the degree to which adjacent lands are already developed, and the type of development already existing in the area.*
	The surrounding parcels are developed with single-family residences so the type of development proposed is consistent with the type of development already existing in the area. The project was specifically designed to minimize directly impacting ESHA. The size of the proposed development is similar in scale to the residences on adjacent properties.
(2)	***Configuration.*** *The buffer area shall be measured from the nearest outside edge of the ESHA (e.g. for a wetland from the landward edge of the wetland; for a stream from the landward edge of riparian vegetation or the top of the bluff).*
	Buffer areas were measured from the center of GPS points for special status plants and the outside edge (dripline of vegetation) of the special status plant communities resulting from ground surveys and aerial photo interpretation. Presumed ESHAs were delineated and mapped though field visits as well as referencing aerial imagery and using ArcGIS to interpolate a 50ft buffer surrounding each of these presumed ESHAs.
(3)	***Land Division.*** *New subdivisions or boundary line adjustments shall not be allowed which will create or provide for new parcels entirely within a buffer area.*
	No new subdivisions or boundary line adjustments are proposed.
(4)	***Permitted Development.*** *Development permitted within the buffer area shall comply at a minimum with the following standards:*
4(a)	*Development shall be compatible with the continuance of the adjacent habitat area by maintaining the functional capacity, their ability to be self-sustaining and maintain natural species diversity.*
	Due to the size of the parcel, property setbacks, and other parcel constraints the development is proposed within 50ft of salal – berry brambles, and within a portion of the Pacific reedgrass meadow. Since the proposed construction and development will be occurring within close proximity to presumed ESHAs, there is a potential for impacts to presumed ESHAs. The proposed development will allow the presumed ESHAs to maintain their functional capacity, ability to be self-sustaining, and maintain natural species diversity. The salal-berry scrub is over the bluff edge and on the bluff face so it is not likely to be impacted by development since the geotechnical bluff setback buffers this habitat area. Much of the Pacific reedgrass meadow will be adjacent to the proposed development and a portion of it will be directly impacted. Pacific reedgrass is a relatively hardy grass and it is not overly

Mendocino County Coastal Zoning Code, Table 4. Section 20.496.020 ESHA – Development Criteria – King	
	sensitive to human disturbance. It is often planted as landscaping around homes due to its durability and attractiveness. Avoidance, minimization, and compensatory measures are recommended in Section 7 in the Biological Report to minimize impacts to presumed ESHA. Transplanting Pacific reedgrass from the area that would be impacted into a habitat enhancement area currently vegetated with invasive grassland and prostrate cape weed is proposed and would result in a net gain in Pacific reedgrass meadow habitat.
4(b)	*Structures will be allowed within the buffer area only if there is no other feasible sites available on the parcel.*
	Due to the size of the parcel, property setbacks, bluff setbacks, and other parcel constraints there are no other feasible alternatives for the proposed development that will be less impacting. The development has been designed to avoid or minimize direct impact to the areas of presumed ESHA present. The original preferred house design was changed and reduced in size in order to minimize impact to the Pacific reed grass meadow. The development was carefully squeezed into the small building envelope and there is no other feasible location on the parcel where development can go.
4(c)	*Development shall be sited and designed to prevent impacts, which would degrade adjacent habitat areas. The determination of the best site shall include consideration of stream, access, soil type, vegetation, hydrological characteristics, elevation, topography, and distance from natural stream channels. The term "best site" shall be defined as the site having the least impact on the maintenance of the biological and physical integrity of the buffer strip or critical habitat protection area and on the maintenance of the hydrologic capacity of these areas to pass a one hundred (100) year flood without increased damage to the coastal zone natural environment or human systems.*
	The “best site” is as proposed. All other design configurations would result in more direct impacts to ESHA. No streams were observed within the study area so the proposed development will not impact hydrologic capacity.
4(d)	*Development shall be compatible with the continuance of such habitat areas by maintaining their functional capacity and their ability to be self-sustaining and to maintain natural species diversity.*
	The proposed development will allow the presumed ESHAs to maintain their functional capacity, ability to be self-sustaining, and maintain natural species diversity. The Mendocino coast paintbrush and salal – berry brambles are along the edge of the bluff and on the bluff face so the proposed development on the flat bluff top is not anticipated to impact these ESHAs. All of the adjacent bluff top parcels that are already developed have the salal – berry brambles along the bluff face. This community has continued to persist despite the development on the adjacent parcels and it is presumed that it will continue to persist after development on the subject parcel. Since the salal-berry brambles will not be impacted it is anticipated that the Mendocino coast paintbrush within this plant community will persist as well. The development will be directly adjacent to the Pacific reedgrass meadow and a portion of the project footprint is within it. The development was reconfigured several times to ensure the footprint would minimize impact to Pacific reedgrass meadow. Pacific reedgrass is a common native landscaping plant because it is relatively hardy and not sensitive to human disturbance. It is anticipated that the pacific reedgrass meadow will persist after construction is complete. Transplanting Pacific reedgrass into a Pacific reedgrass habitat enhancement area just to the east of the main population is recommended within the mitigation measures of the main report.
4(e)	*Structures will be allowed within the buffer area only if there is no other feasible site available on the parcel. Mitigation measures, such as planting riparian vegetation, shall be required to replace the protective values of the buffer area on the parcel, at a minimum ratio of 1:1, which are lost as a result of development under this solution.*
	The project has been designed to minimize direct impacts to ESHA. There are no other feasible locations that are less impacting for the proposed development due to the parcel constraints. To mitigate for potential impacts orange construction fencing shall be installed between the majority of the Pacific reedgrass meadow and the salal-berry brambles and the area where construction will occur. Areas of bare soil resulting from construction shall be seeded with native erosion control seed mix and/or with biodegradable erosion control materials (e.g. coconut fiber, jute, weed free straw). Pacific reedgrass in the area to be impacted will be transplanted to a habitat enhancement area.

Mendocino County Coastal Zoning Code, Table 4. Section 20.496.020 ESHA – Development Criteria – King	
4(f)	*Development shall minimize the following: impervious surfaces, removal of vegetation, amount of bare soil, noise, dust, artificial light, nutrient runoff, air pollution, and human intrusion into the wetland and minimize alteration of natural landforms.*
	The proposed driveway is made of gravel so it will be pervious; however, all building structures (approximately 3,678ft^2) will be impervious. Non-native Monterey pine trees will be removed to make room for the proposed driveway and septic system. The project was designed with the intent to retain trees on the property where feasible. Area of bare soil will be seeded with native erosion control mix and/or covered with biodegradable erosion control materials (e.g. coconut fiber, jute, weed free straw). Significant noise is only anticipated to occur during the construction period. After construction, the development is not anticipated to create much more noise than any of the adjacent residences. Natural landforms will not be significantly altered since the bluff top if already relatively flat. The Coastal Zoning Code requires exterior lights to be downcast and shielded, and building and air quality requirements are expected to address dust, air pollution and nutrient runoff issues. Pacific reedgrass is a common native ornamental plant on the coast and is relatively hardy so it is not sensitive to human intrusion or disturbance. The development and continued use of the parcel will not result in an increase of human intrusion into the salal – berry brambles or Mendocino coast paintbrush since these presumed ESHAs are along the bluff face.
4(g)	*Where riparian vegetation is lost due to development, such vegetation shall be replaced at a minimum ratio of one to one (1:1) to restore the protective values of the buffer area.*
	No riparian vegetation or ESHA vegetation will be removed as a part of the project.
4(h)	*Above ground structures shall allow peak surface water flows from a one hundred (100) year flood to pass with no significant impediment.*
	The development is not proposed in a 100-year flood zone.
4(i)	*Hydraulic capacity, subsurface flow patterns, biological diversity, and/or biological or hydrological processes, either terrestrial or aquatic, shall be protected.*
	The proposed development is not expected to negatively impact hydraulic capacity, subsurface flow patterns, biological diversity, and/or biological or hydrological processes. There are no streams or wetlands onsite that convey water across the property. Orange construction fencing will protect the presumed ESHAs throughout the construction period.
4(j)	*Priority for stream conveyance from a development site shall be through the natural stream environment zones, if any exist, in the development area. In the stream system design report or development plan, the capacity of natural stream environment zones to convey runoff from the completed development shall be evaluated and integrated with the stream system wherever possible. No structure shall interrupt the flow of groundwater within a buffer strip. Foundations shall be situated with the long axis of interrupted impermeable vertical surfaces oriented parallel to the groundwater flow direction. Piers may be allowed on a case-by-case basis.*
	The project will not change stream patterns as there are no streams or wetlands onsite.
4(k)	*If findings are made that the effects of developing an ESHA buffer area may result in significant adverse impacts to the ESHA, mitigation measures will be required as a condition of project approval. Noise barriers, buffer areas in permanent open space, land dedication for erosion control, and wetland restoration, including off-site stream improvements, may be required as mitigation measures for developments adjacent to environmentally sensitive habitats. (Ord. No. 3785 (part), adopted 1991)*
	Avoidance measures listed in Section 7 of the Biological Report include installing orange construction fencing between construction and the majority of the Pacific reedgrass meadow and salal-berry brambles and covering areas of bare soil resulting from construction with native erosion control seed mix and/or with biodegradable erosion control materials (e.g. coconut fiber, jute, weed free straw). Pacific reedgrass within the building envelope will be transplanted to the habitat enhancement area. Pre-construction bird surveys will be conducted prior to vegetation removal and/or construction if

Mendocino County Coastal Zoning Code, Table 4. Section 20.496.020 ESHA – Development Criteria – King	
	these activities are to begin in the bird nesting seasons in order to avoid impact to these animals' reproductive activities. Nest buffers and timing restrictions will be enacted if bird nests are present during the pre-construction surveys.

REPORT OF COMPLIANCE

for

2731 Seaside Ct
Albion, CA 95410
APN 123-340-27
Mendocino County

Property Owner:
Andy King
3235 Roswell Rd, NE #705
Atlanta, GA 30305

Report Prepared By:
Nicole Herrera, Biologist
Asa Spade, Senior Biologist

July 20, 2023

Wynn Coastal Planning & Biology
703 North Main Street, Fort Bragg, CA 95437
ph: 707-964-2537 fx: 707-964-2622
www.WCPlan.com

Table of Contents

Table of Figures

1. Background and Purpose

The proposed development is located at 2731 Seaside Ct, Albion, CA. The parcel (**Figure 1**) can be accessed from CA-1 by proceeding south one mile from the town of Albion, turning west onto Pacific Reefs Rd, and then north onto Seaside Ct. The property is located within the Pacific Reefs subdivision and is surrounded by residential development and the Pacific Ocean. The parcel is west of Highway One and is located within the Coastal Zone as defined in Section 30103 of the California Coastal Act.

A Biological Scoping Survey, Wetland Delineation, Behrens Silverspot Butterfly, & Botanical Report was completed for the 1.1-acre property (APN 123-340-27-00) by Wynn Coastal Planning & Biology (WCPB). The purpose of the biological report was to locate special status plants and communities, wetlands and riparian areas, and special status animal habitats to determine if they would be directly or indirectly impacted by the proposed development and to locate the least environmentally impacting area. A map depicting presumed ESHAs and proposed development is presented in **Figure 2.** Only the southern portion of the parcel is buildable with a flat terrace as the northern part is a bluff edge. The elevation of the relatively flat terrace on the southern edge of the parcel is approximately 150ft above sea level and the property steeply slopes down to the Pacific Ocean midway through the parcel. The parcel is currently undeveloped.

The bluff top is vegetated by coyote brush scrub, **pacific reedgrass meadow**, common velvet grass – sweet vernal grass meadows, and prostrate cape weed. At the break in slope down to the beach the vegetation is best classified as **salal – berry brambles**. Monterey pine and Monterey cypress trees are present along the southern edge of the study area. **Mendocino coast paintbrush** was observed on the bluff edge among the salal – berry brambles. Plant communities and vegetation observed was classified and mapped (**Figure 3**). A wetland sample point was investigated at a location within the Pacific reedgrass meadow, which was the most likely area to be wetland if any was present and no indications of wetlands were observed.

Reduced Buffer Analysis was prepared to demonstrate that a reduction in buffer from 100ft to 50ft is sufficient to protect the **Mendocino coast paintbrush** from impacts from development. A portion of the proposed development will be within the **pacific reedgrass meadow** and approximately 45ft from **salal-berry brambles presumed ESHA** and will be within their assumed 100ft ESHA buffers. Since no alternatives exist that would allow the proposed development to avoid the **pacific reedgrass meadow** and **salal-berry brambles presumed ESHAs** by greater than 50ft, no reduction in buffer distance is requested for these special status resources, instead, these resources are addressed in Section 4 of the reduced buffer analysis: development within the buffer.

The property's special status resources can be considered Environmentally Sensitive Habitat Areas (ESHAs) according to the Mendocino County Local Coastal Program. This Report of Compliance presents an analysis of potential impacts to the special status resources and demonstrates that the proposed development is consistent with the County of Mendocino Local Coastal Program in that the development is located in the least impacting location.

Figure 1. Location of project area.

The Report of Compliance is required by Section 20.532.060(E) Mendocino County Coastal Zoning Code, which requires supplemental application procedures for development within Environmentally Sensitive Habitat Areas. The purpose of this report is to provide an in-depth analysis of the proposed development and its potential impacts on the pacific reedgrass meadow and salal-berry brambles by addressing the following items:

Report of Compliance. A report based upon an on-site investigation which demonstrates that the development meets all of the criteria specified for development in, and proximate to, an environmentally sensitive habitat area including a description and analysis of the following performed by a qualified professional:

(1) Present extent of the habitat, and if available, maps, photographs or drawings showing historical extent of the habitat area.

(2) Previous and existing ecological conditions.

(a) The life history, ecology and habitat requirements of the relevant resources, such as plants, fish and wildlife, in sufficient detail to permit a biologist familiar with similar systems to infer functional relationships (the maps described above may supply part of this information).

(b) Restoration potentials.

(3) Present and potential adverse physical and biological impacts on the ecosystem.

(4) Alternatives to the proposed development, including different projects and alternative locations.

(5) Mitigation measures, including restoration measures and proposed buffer areas.

Items below (6 – 11) are not applicable to this project

(6) If the project includes dredging, explain the following:

(a) The purpose of the dredging.

(b) The existing and proposed depths.

(c) The volume (cubic yards) and area (acres or square feet) to be dredged.

(d) Location of dredging (e.g., estuaries, open coastal waters or streams).

(e) The location of proposed spoil disposal.

(f) The grain size distribution of spoils.

(g) The occurrence of any pollutants in the dredge spoils.

(7) If the project includes filling, identify the type of fill material to be used, including pilings or other structures, and specify the proposed location for the placement of the fill, the quantity to be used and the surface area to be covered.

(8) If the project includes diking, identify on a map the location, size, length, top and base width, depth and elevation of the proposed dike(s) as well as the location, size and invert elevation of any existing or proposed culverts or tide gates.

(9) If the project is adjacent to a wetland and may cause mud waves, a report shall be prepared by a qualified geotechnical engineer which explains ways to prevent or mitigate the problem.

(10) Benchmark and survey data used to locate the project, the lines of highest tidal action, mean high tide, or other reference points applicable to the particular project.

(11) Other governmental approvals as required and obtained. Indicate the public notice number of Army Corps of Engineers permit if applicable.

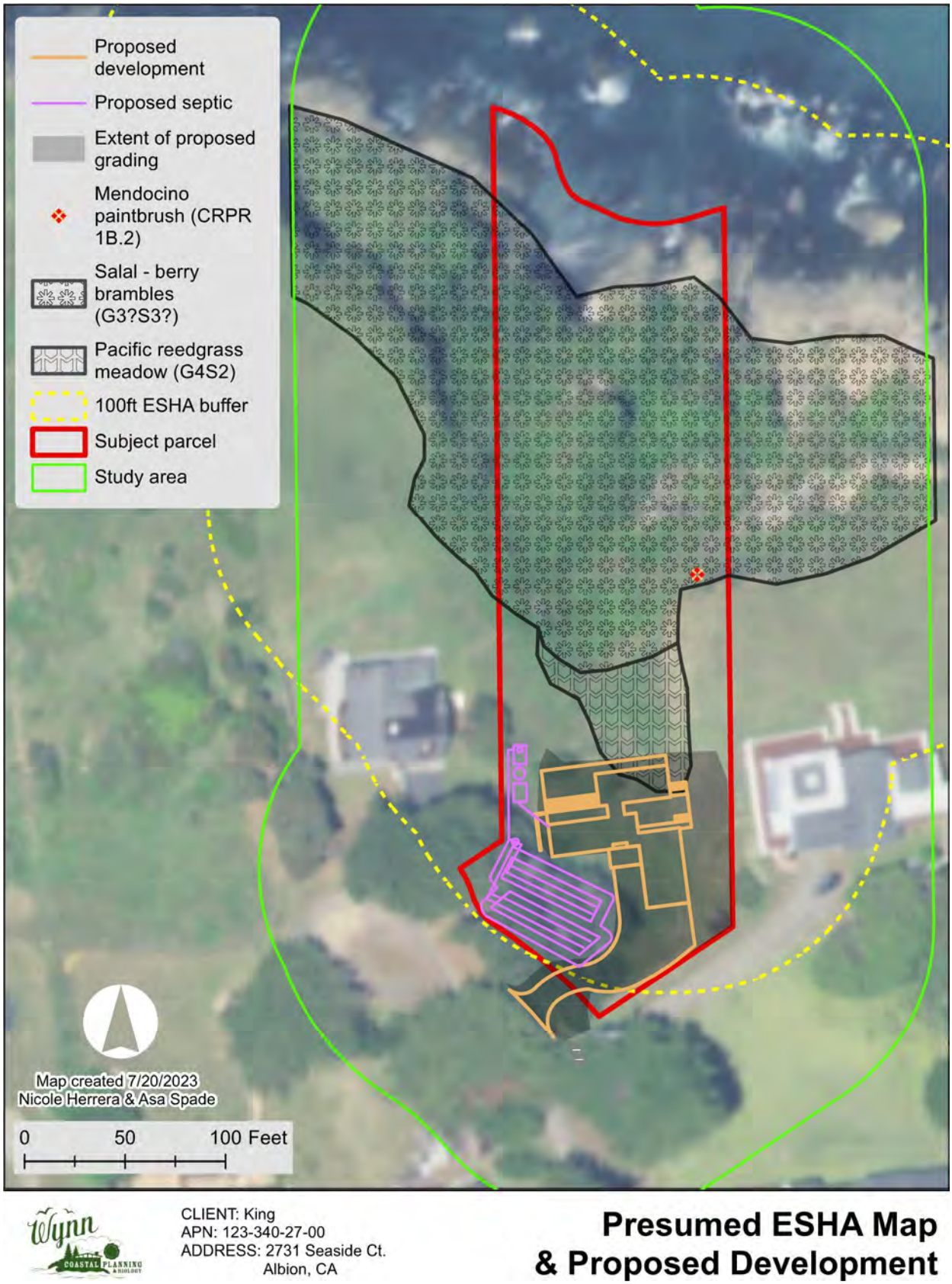


Figure 2. Proposed development relative to presumed ESHA observed at the site.

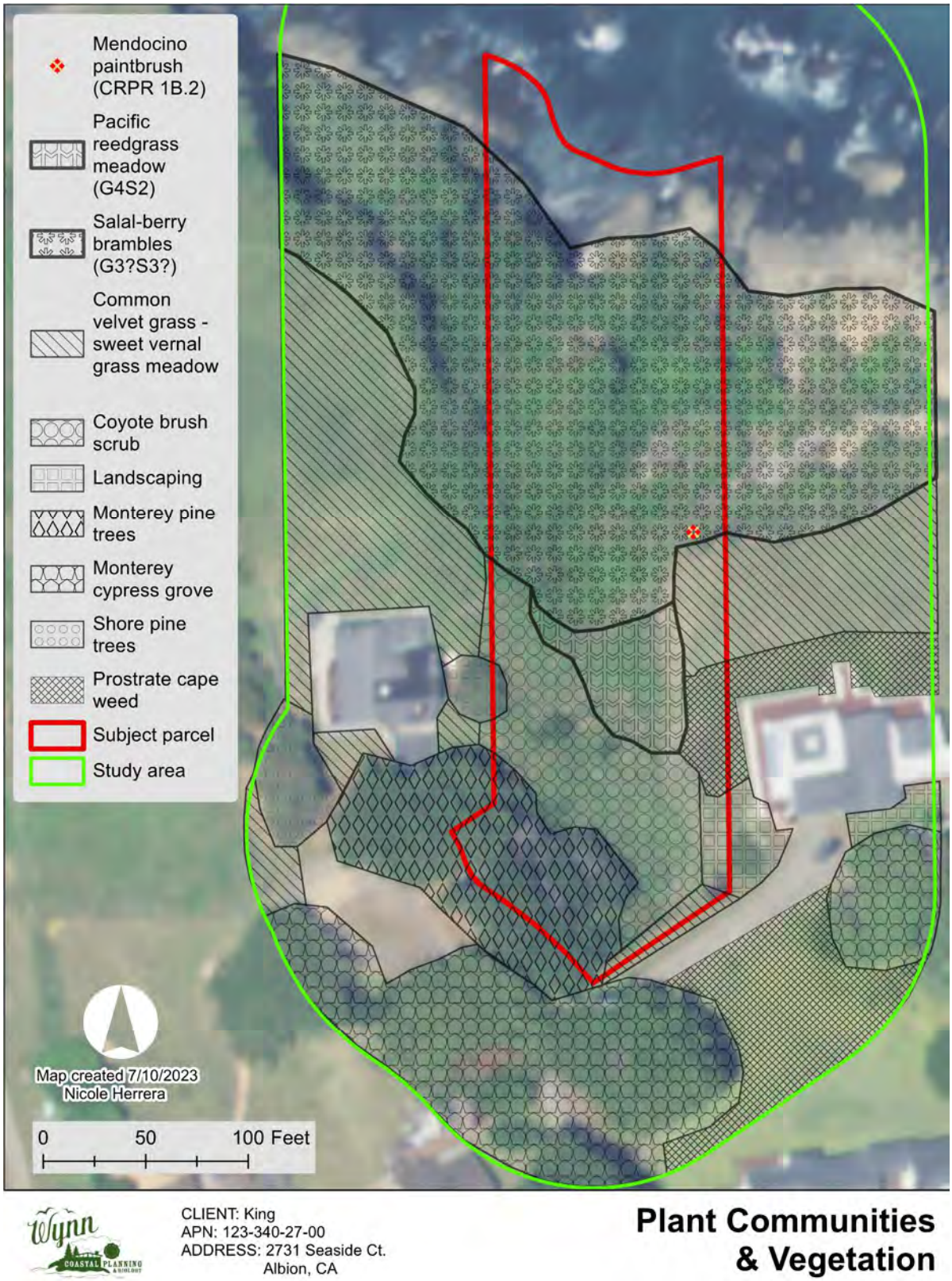


Figure 3. Plant communities and vegetation map.

2. Findings

2.1. Special Status Plant Communities

Classification of natural communities with the Manual of California Vegetation is hierarchical; a community is defined by the dominant species of plants within the tallest stratum of vegetation. Plant community "Alliances" are the highest level of classification, containing within them one or more "Associations". Because Associations are nested within Alliances, they are always less abundant than the Alliance as a whole and therefore have rarity rankings as rare as, or rarer than, their parent Alliance. A "dominant species" is defined as "An abundant species with high cover in relation to other species in the layer with highest canopy cover. We typically define dominant species as those with at least 50% relative cover within a particular layer", and a "co-dominant species" as "two or more abundant species with high cover in relation to other species in the layer with the highest canopy cover. We typically define co-dominant species as those with at least 30% relative cover."

No information specific to the *Calamagrostis nutkaensis* Grassland Association and *Gaultheria shallon – Rubus (ursinus)* Shrubland Association is available. The sections below address the broader *Calamagrostis nutkaensis* Grassland Alliance and *Gaultheria shallon – Rubus (ursinus)* Shrubland Alliance. Since the state and global rarity rankings are not available for these specific association the alliance rarity ranking is assigned to these associations.

2.1.1. Present Extent of Habitat

Pacific reedgrass meadows (*Calamagrostis nutkaensis* Grassland Association G4S2)

Pacific reedgrass meadow has a ranking of G4 S2, which indicates that the community is apparently secure globally and imperiled throughout California (**Figure 4 & Figure 5**). In North America, Pacific reedgrass ranges from subarctic north America south to the central coast of California (San Luis Obispo County). This community is limited to the coast where there is moisture from fog (Clayton et al. 2022). Within this community, *Calamagrostis nutkaensis* is either dominant or co-dominant in the herbaceous layer with *Anthoxanthum odoratum, Artemisia suksdorfii, Elymus glaucus, Festuca arundinacea, Festuca rubra, Heracleum maximum, Holcus lanatus*, and *Pteridium aquilinum.* Pacific reedgrass meadow was observed on the flat portion of the property in the north eastern corner before the parcel slopes down to the Pacific Ocean at the bluff edge.

Salal-berry brambles (*Gaultheria shallon – Rubus spp.* Shrubland Association GNRS4)

Salal-berry brambles has a ranking of GNR S4, which indicates that the community is not yet assessed globally and apparently secure throughout California (**Figure 6**). However, this association is listed as sensitive according to CDFW VegCamp's California Natural Community List so it is considered a presumed ESHA for the purposes of this report. In California, salal-berry brambles occur along the coast from the Oregon border south to central California (San Luis Obispo County). Within this community *Gaultheria shallon, Holodiscus discolor, Rubus parviflorus* and/or *Rubus ursinus* is dominant solely or form various mixtures in the shrub canopy with *Baccharis pilularis, Eriophyllum staechadifolium, Frangula californica, Heracleum maximum, Lonicera hispidula, Lonicera involucrata, Marah fabacea, Marah oregana, Morella californica, Ribes menziesii, Rubus spectabilis, Sambucus racemosa, Toxicodendron diversilobum* and *Vaccinium ovatum*. Salal-berry brambles were observed along the bluff edge and bluff face leading down to the Pacific Ocean.

Figure 4. USDA Ecological Section Map of pacific reedgrass meadow in California (CNPS 2023).

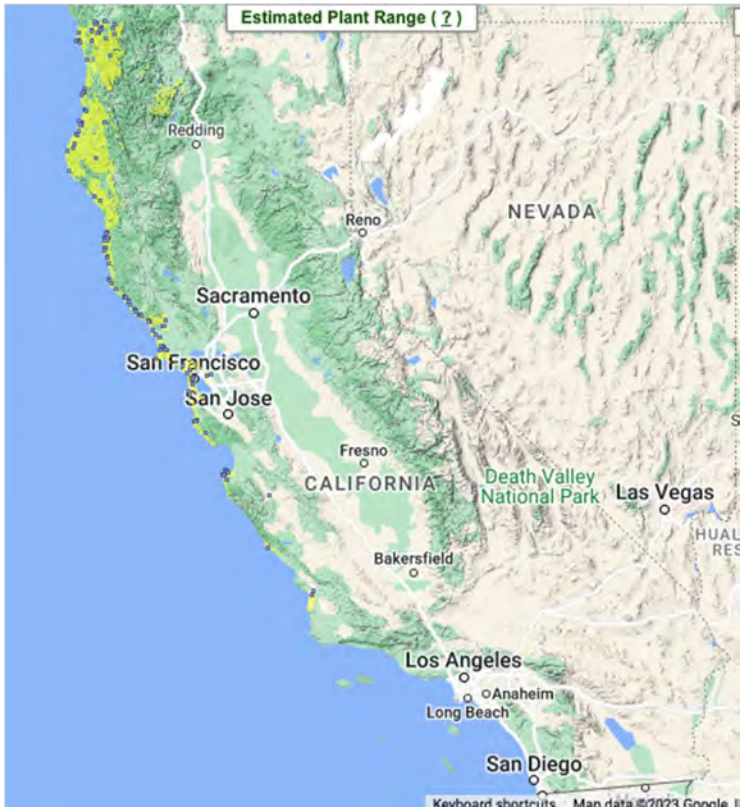


Figure 5. Estimated plant range of Pacific reedgrass in California. Field occurrences of species are shown as blue squares and estimated distribution ranges are shown in yellow (Calscape 2023).

Figure 6. USDA Ecological Section Map of salal-berry brambles in California (CNPS 2023).

2.1.2. Historical Extent of Habitat

Pacific reedgrass meadows (*Calamagrostis nutkaensis* Grassland Association G4S2)
Due to pacific reedgrass meadows being an herbaceous plant community it is hard to identify from aerial imagery. The property has likely been maintained by mowing over time. There is no other prior documentation available in regard to the historical extent of the pacific reedgrass meadows at this site.

Salal-berry brambles (*Gaultheria shallon – Rubus spp.* Shrubland Association GNRS4)
Aerial imagery from 1998 depicts the extent of the salal-berry brambles as the dark vegetation along the bluff edge back then (**Figure 7**) versus imagery from 2021 depicts the current extent of this community (**Figure 8**). The salal-berry brambles community appears to have changed very little over the 23 year period. This is probably due to a combination of neighbors manicuring their lawns to edge of the bluff and that this community naturally grows along the moist bluff edge vs the drier bluff top. There is no other prior documentation available in regard to the historical extent of the salal-berry brambles onsite. This community appears to be relatively stable and compatible with the human development nearby it.

Figure 7. 1998 US Geological survey aerial photo of the vicinity of the subject parcel.

Figure 8. 2021 Aerial photo of the subject parcel for comparison to the 1998 photo above.

2.2. Previous and Existing Ecological Conditions

2.2.1. Life History and Ecology

Pacific reedgrass meadows (*Calamagrostis nutkaensis* Grassland Association G4S2)
Pacific reedgrass grows mainly in moist coastal areas such as freshwater swales, depressions, coastal terraces, coastal bluffs, beaches, and coastal woodlands. It is a large perennial bunchgrass with coarse, rough leaves that reaches a height on average of 3 feet tall. It prefers full sun or partial shade as it can be easily shaded out by tree canopy. It grows from sea level up to 100 feet above sea level. This native grass sprouts easily after fires and was regularly burned and maintained by Native Americans (Calscape 2023). Surveyors often see this plant and/or community growing on the headlands in areas exposed to north winds and under the tree canopy where fog drip occurs. Its long roots help control erosion on coastal habitats. It is also a common ornamental plant grown on the north coast.

Salal-berry brambles (*Gaultheria shallon – Rubus spp.* Shrubland Association GNRS4)
Salal-berry brambles grows mainly on coastal bluffs, headlands, exposed slopes, and gaps in forest stands. Salal is an evergreen shrub with dark, waxy leaves. It has pink urn shaped dangling flowers. Both thimbleberry (*Rubus parviflorus*) and California blackberry (*Rubus ursinus*) were observed mixed in with this community. Thimbleberry grows upright with broad simple leaves and forms red "thimble" shaped fruits. California blackberry grows lower along the ground, has compound leaves, and produces black fruits. This community grows from sea level up to 1,800 feet above sea level. The plant community can withstand coastal winds, salt spray, and erosion along coastal slopes. It often grows alongside northern coastal bluff scrub (Calscape 2023).

2.2.2. Restoration potential

Pacific reedgrass meadows (*Calamagrostis nutkaensis* Grassland Association G4S2)
Pacific reedgrass spreads by rhizomes and reproduces by seed. It is not particularly sensitive to disturbance and establishes in areas of bare, disturbed soil. Therefore, if areas of bare soil are exposed it is highly probable that the pacific reedgrass meadow will spread into the disturbed area. However, non-native invasive grasses and forbs are also likely to spread into disturbed area so selectively removing these invasive plants in disturbed areas will remove competition and improve the chances of pacific reedgrass expanding into these areas. Pacific reedgrass is a common native landscaping plant and is easily found at local nurseries and gardening stores. Local nurseries, such as Jug Handle Creek Farm, can potentially be contracted to grow pacific reedgrass plugs from seed.

Salal - berry brambles (*Gaultheria shallon – Rubus spp.* Shrubland Association GNRS4)
Salal-berry brambles are not expected to be impacted as this plant community was observed along the bluff edge and bluff face and geotechnical setbacks and mitigation measures (i.e. orange construction fencing) are expected to protect this plant community from potential impacts from development. Both salal and California blackberry are known to form dense patches in disturbed areas so are not seen as particularly sensitive plants. Restoration in this area would be challenging due to the safety concerns from navigating on steep bluff top slopes. Therefore, avoidance measures are the preferred option over compensatory mitigation.

2.3. Present and Potential Adverse Biological Impacts on the Ecosystem

Pacific reedgrass meadows (*Calamagrostis nutkaensis* Grassland Association G4S2)
The current adverse biological impact on the pacific reedgrass meadow is non-native, invasive plants. The most notable invasive plant observed on neighboring parcels was prostrate cape weed (*Arctotheca prostrata*). Prostrate cape weed is ranked as moderate on the Cal-IPC rating indicating

that it has, “substantial and apparent ecological impacts on physical processes, plants and animals communities, and vegetation structure (California Invasive Plant Council 2023). This weed is very competitive and dominates disturbed soils. Prostrate cape weed from the neighboring parcel to the east is encroaching onto the eastern edge of the subject parcel so special care should be taken to remove this invasive plant from the subject parcel as well as actively pulling it if it is seen resprouting in the area. Non-native grasses such as common velvet grass (*Holcus lanatus*) and sweet vernal grass (*Anthoxanthum odoratum*) are very common along the Mendocino coast. Once Pacific reedgrass had formed thick, tall, and robust clumps it can shade out these shorter invasive grasses; however, these aggressive invasive grasses may compete with newly sprouting Pacific reedgrass. Although, the development was specially designed to be outside of this ESHA as much as possible there is still a potential for impact since the development will be partially within and adjacent to this plant community. Mitigation measures are recommended in the main biological report to avoid and minimize impacts to this ESHA.

Salal-berry brambles (*Gaultheria shallon – Rubus spp.* Shrubland Association GNRS4)
The current adverse biological impacts on the salal-berry brambles are wind, salt spray, and slope movement. Although this special status plant community is adapted to living along coastal bluff slopes these elements still hinder the growth of this community. Slope erosion may contribute to chucks of vegetation sloughing off the bluff edge. Impacts from the proposed development are not anticipated to impact the salal-berry brambles. While not anticipated, there is potential for erosion from construction to contribute sediment to this community. Salal-berry brambles have continued to persist on the bluff edge on neighboring properties with development that is just as close if not closer than the proposed project. Mitigation measures are recommended in the main biological report to avoid impacts to this ESHA.

3. Analysis

3.1. Alternatives to the Proposed Development

Supplemental Application Procedures (Sec 20.532.060 of the Coastal Zoning Code) states that alternatives to proposed development should be considered. The proposed project design is the least impacting and most feasible development location that would achieve the owners’ goals for the use of the residential parcel in a manner consistent with the use enjoyed on similar neighboring parcels. The design was changed several times during the planning process to achieve a project that minimizes impact to the natural resources present. Alternative locations for the components of this proposed development are very limited as practically the entirety of the parcel is within 100ft of presumed ESHA. Alternative designs were considered, and the proposed development was strategically placed to avoid and minimize direct impacts to ESHA as much as feasible while allowing for the reasonable residential use of the parcel.

4. Discussion

The proposed development, which includes a single-family residence with decks, a courtyard, and attached garage, septic leach field and the designation of a replacement field, and a gravel driveway, is proposed in the least impacting location on the parcel. The design avoids impacts to salal – berry scrub habitat and Mendocino paintbrush, and minimizes impact to Pacific reedgrass meadow, which extends farther south into the middle of the parcel. Pacific reedgrass is relatively hardy and is commonly available as a native ornamental plant. Removal of invasive plants east of the Pacific reedgrass meadow and covering this area with mulch will make it a suitable area into which Pacific reedgrass plants that would be directly impacted by the construction can be split into multiple plugs and transplanted. Splitting the clumps of Pacific reedgrass will allow for the establishment of this species over a wider area than the plants are removed from. The result should be an eventual net gain in Pacific reedgrass meadow.

4.1. Dredging
N/A

4.2. Filling
N/A

4.3. Diking
N/A

4.4. Mud Waves
N/A

4.5. High Tide Benchmarks
N/A

4.6. Governmental Approvals
N/A

5. References

CalFlora: Information on California plants for education, research and conservation, with data contributed by public and private institutions and individuals, including the Consortium of California Herbaria. [web application]. 2017. Berkeley, California: The CalFlora Database [a non-profit organization]. Available: http://www.calflora.org/ (Accessed: Nov 09, 2021).

California Department of Fish and Wildlife (CDFW). September 2010. List of Vegetation Alliances and Associations. Vegetation Classification and Mapping Program. Sacramento, CA

California Department of Fish and Wildlife (CDFW). September 2015. California Wildlife Habitat Relationships. Sacramento CA. http://www.dfg.ca.gov/biogeodata/cwhr/. Accessed December 2017.

California Native Plant Society (CNPS). 2021. Calscape: Restore Nature One Garden at a Time. Website https://calscape.org/ [accessed 9 November 2021].

California Native Plant Society (CNPS), Rare Plant Program. 2021. Inventory of Rare and Endangered Plants of California (online edition, v9-01 1.0). Website https://www.rareplants.cnps.org [accessed 9 November 2021].

Clayton, W. D., K. T. Harman, and H. Williamson. 2002 onwards. World grass species: Descriptions, identification, and information retrieval. GrassBase—The Online World Grass Flora. Version 5, 2007. [Online] Royal Botanic Gardens, Kew, UK. Available: http://www.kew.org/data/grasses-db.html.

CNPS. 2020. A Manual of California Vegetation, Online Edition. http://www.cnps.org/cnps/vegetation/; searched on November 2020. California Native Plant Society, Sacramento, CA.

Flora of North America. 2021. Horkelia marinensis. Available: http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=250100244, Accessed Nov 2021).

Guusti, G. n.d. *Watching the Demise of a Coastal Forest Type - Bishop Pine.* UC Cooperative Extension Mendocino - Lake Counties. Accessed from: http://cemendocino.ucanr.edu/files/199447.pdf [2020, December 23].

Howard, Janet L.; Aleksoff, Keith C. 2000. Abies grandis. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: https://www.fs.fed.us /database/feis/plants/tree/abigra/all.html [2021, November 9].

Mendocino County. 1991. Mendocino County Coastal Zoning Code. Title 20 – Division II of the Mendocino County Code.

Ragenovich, I.R. and Mitchell, R.G. 2006. Balsam Woolly Adelgid. U.S. Department of Agriculture: Forest Service. Forest Insect and Disease Leaflet 118.

Rittiman CA, Thorson TD. Soil survey of Mendocino County, California, western part. (2006).

Sawyer, J. O., Keeler-Wolf, T., & Evens, J. (2009). *A manual of California vegetation*. Sacramento, CA: California Native Plant Society Press.

Toogood, A. (1993). *Plant propagation made easy: The complete guide to raising hardy, tender and indoor plants*. Portland, Oregon: Timber Press.

6. Investigator Biographies

Asa B Spade graduated from Humboldt State University with a Bachelor of Science majoring in Environmental Science, with a concentration in Landscape Ecosystems as well as a minor in Botany. Since that time, he has been working in the natural resources field, first with Mendocino County Environmental Health and later with California State Parks and the Department of Fish and Game. He has been trained in Army Corps wetland delineation by the Coastal Training Program at Elkhorn Slough and in Advanced Wetland Delineation by the Wetland Science and Coastal Training Program. He has been trained in the environmental compliance process for wetland projects in San Francisco bay and outer coastal areas. In 2011 Asa completed training to survey for California red-legged frog held by Elkhorn Slough Coastal Program. In 2015 he attended a Townsend's big eared bat basal hollow habitat assessment and survey methods workshop taught by Michael Baker, Leila Harris, and Adam Hutchins. Asa has trained with the Carex Working Group in identifying grasses and sedges of Northern California as well as a CNPS sedge workshop taught by CA Fish and Wildlife staff biologist Gordon Leppig. In 2019, he completed a training for burrowing owls taught by Dr. Lynne Trulio through the Elkhorn Slough Coastal Training Program and completed foothill yellow legged frog training taught by David Cook and Jeff Alvarez. Asa conducted field work for the Classification and Mapping of Mendocino Cypress Woodland and Related Vegetation using CNPS/CDFW Rapid Assessment/Relevé protocol. In 2021 Asa completed training by Jeff Alverez and Jeff Wilcox on the eradication of bullfrogs within the range of California red-legged and foothill yellow legged frog. He is on the Fish and Wildlife Service approved list for Point Arena mountain beaver surveys and has done surveys for Behren's silverspot butterfly, Northern spotted owl, Sonoma tree vole, foothill yellow-legged frog and the California red-legged frog. He has contributed natural resources expertise to more than 200 coastal development projects in Mendocino County.

Nicole Herrera graduated from Gonzaga University with a Bachelor's Degree in Environmental Studies and a minor in Biology. After graduating, she worked as an intern for The Nature Conservancy conducting vegetation monitoring for the endangered golden-cheeked warbler. She served as an AmeriCorps member for the Watershed Stewards Program which aims to conserve, restore, and enhance anadromous watersheds for future generations. She worked as a fisheries technician conducting salmonid monitoring and habitat restoration for various agencies, including the California Department of Fish and Wildlife, Pacific States Marine Fisheries Commission, and the Bureau of Land Management. She also has experience planning and implementing northern spotted owl, Sonoma tree vole, and amphibian surveys. She has been trained in U.S. Army Corps of Engineers wetland delineation by the Wetland Training Institute, Inc. She is on the U.S. Fish and Wildlife Service's approved list for Point Arena mountain beaver and Behren's silverspot butterfly surveys. She completed the Bullfrog Control in California Field Workshop 2021 led by Jeff Alvarez and Jeff Wilcox held at a UC Berkeley Field Station.

APPENDIX “J”

This appendix was not used and page is intentionally left blank.

Surveyor Name: Asa Spade, Nicole Herrera **Project:** King, 2731 Seaside Ct, Albion, CA

Direction	Transect #	Date	Weather				Time		Butterflies Observed:	Plants in Bloom	Comments
			Temp	Wind (MPH)	Moisture	% Overcast	Start	End			
S→N	—	8/5	66	5-8	Dry	0	14:40	15:20	cabbage white, common ringlet, mylitta crescent, painted lady, gray buckeye	Hyp rad, Ang hen, Lot cor, Ach mil, Pro vul, capeweed	
S→N	—	8/12	65	5-10	Dry	0	2:10		~~Dogstar~~ skipper, painted lady, Mylitta crescent	Hyp rad, Lot cor, capeweed, Cir vul, Ang mes, Cor edu, Plan ?	Leaf of Vio adu eaten on some plants
S→N	—	8/19	64	5-10	Dry	10	2:00	2:30	Mylitta crescent, Acmon blue, orange sulphur, wood skipper	Hyp rad, Lot ten, Cir vul, capeweed, Ana mar, Pip ele	

Lands of King
Sections 28, 29, 32 & 33, Township 16 North,
Range 17 West, Mount Diablo Meridian
Mendocino County, CA

General Notes	
General Plan Designation:	RR5 (1)
Zoning District:	RR:5 / RR:1
Urban/Rural:	Rural
Highly Scenic Area:	No
Proposed Land Use:	SFR & Septic
Appealable to Coastal Commission:	Yes
Entitlement Permit Type:	CDP
Yard Setbacks:	20' front & rear, 6' sides
CalFire Setbacks:	30'
Corridor Preservation Setback:	25' from ℄ Seaside Ct.
Height Limit - County:	28'
Environmental Constraints:	Yes
Potential Geologic Hazards:	Yes
Water Source:	Water district
Wastewater Disposal:	Proposed On-site septic
Tree Removal:	Yes, approx. 63 trees

Lot Coverage Tabulation Gross Site Area:	
Gross Site Area:	1.03 ac (45,069.97 sf)
Maximum allowable lot coverage:	20% (9,014 sf)

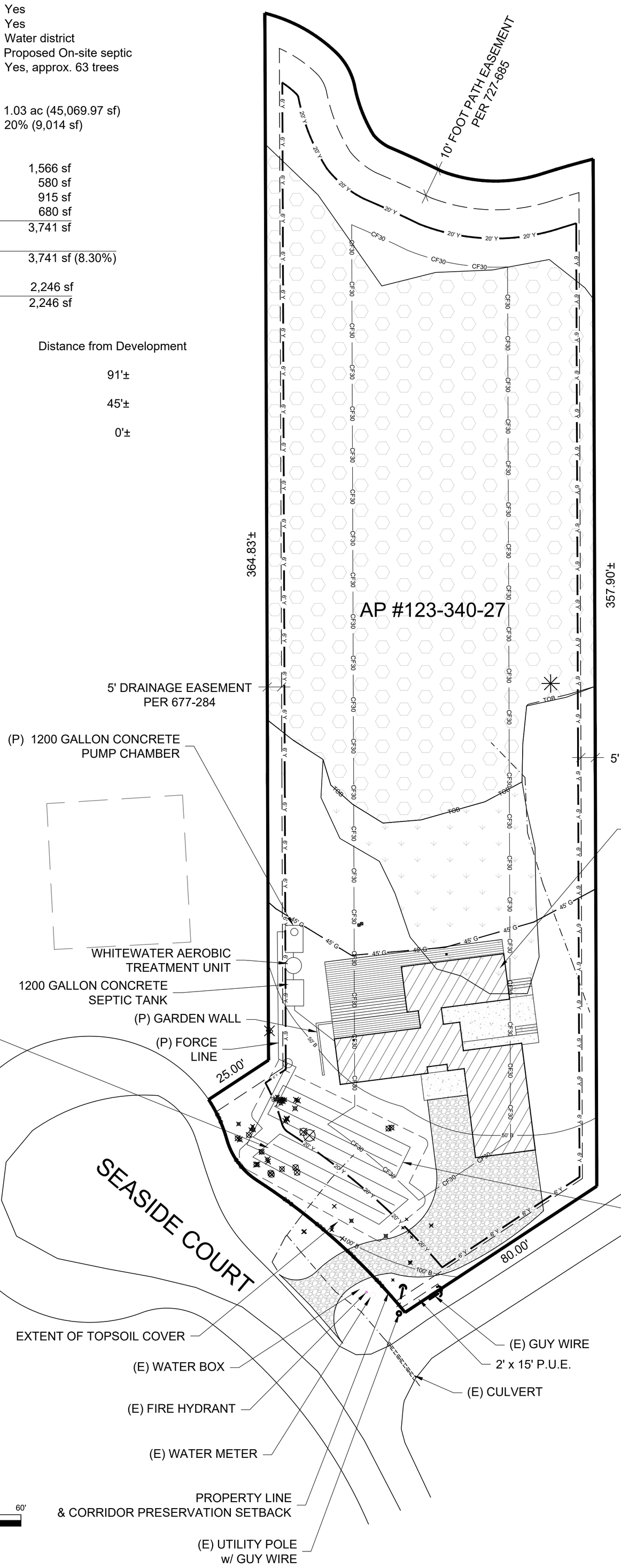
Lot Coverage:	
(P) Footprint Residence:	1,566 sf
(P) Footprint Garage:	580 sf
(P) Footprint Decks:	915 sf
(P) Footprint Concrete:	680 sf
Total Building Footprint:	3,741 sf
Total Lot Coverage (Footprint):	3,741 sf (8.30%)
(P) Driveway & Parking:	2,246 sf
Total Driveway & Parking:	2,246 sf

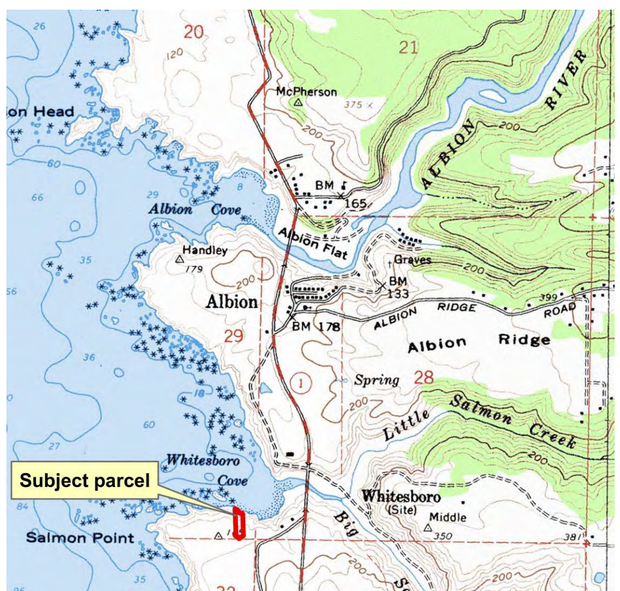
Sensitive Resources:

Legend	Type	Distance from Development
✳	Mendocino Paintbrush	91'±
	Salal - Berry Brambles	45'±
	Pacific Reedgrass Meadow	0'±

LEGEND:

- CF30 — CAL FIRE 30' YARD SETBACK
- x' Y — YARD SETBACK
- TOB — TOP OF BLUFF
- 45' G — 45' GEOTECHNICAL SETBACK
- 50' B — 50' BUFFER
- 100' B — 100' BUFFER
- FLOWLINE
- (P) GRAVEL DRIVEWAY
- (P) CONCRETE
- TREE TO BE REMOVED, TYP.





SITE PLAN | 1 : 20 | 1

SHEET	REVISION	BY	DATE	APN: 123-340-27-00
1 OF 1 SHEETS				DRAWN BY: TH
				DATE: 6/13/2023
				SCALE: AS SHOWN
				APPROVED BY: MD

KING

2731 Seaside Ct.
Albion, CA 95410

Wynn COASTAL PLANNING & BIOLOGY
703 North Main Street, Fort Bragg CA 95437
ph: 707-964-2537 fx: 707-964-2622 www.WCPlan.com

Design review, not meant for construction.

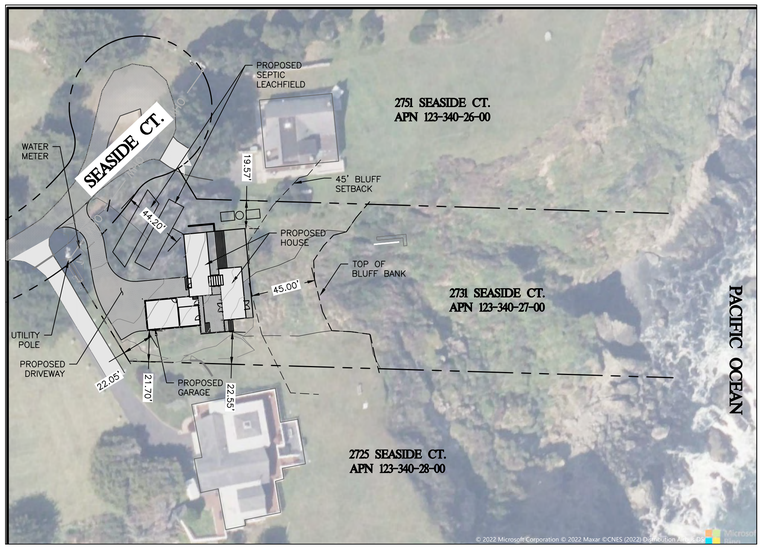
SITE IMPROVEMENT PLANS FOR KING RESIDENCE 2731 SEASIDE COURT ALBION, CA 95410

SHEET INDEX		
PAGE	SHEET	TITLE
1	C1	COVER SHEET AND NOTES
2	C2	GRADING AND DRAINAGE PLAN
3	C3	UTILITY PLAN
4	C4	EROSION CONTROL PLAN AND DETAILS
5	C5	SECTIONS AND DETAILS

PROJECT TEAM DIRECTORY			
PROJECT ROLE	REPRESENTATIVE	PHONE	EMAIL
PROPERTY OWNER	ANDREW KING		BLUEANDREWKING@GMAIL.COM
PROJECT CIVIL ENGINEER	TYLER PEARSON CORNERSTONE CIVIL DESIGN	707-972-7147	CORNERSTONECIVILDESIGN@GMAIL.COM
PROJECT SOILS ENGINEER	BRUNSING ASSOCIATES, INC.	707-528-6108	EOLSBORG@BRUNSING.COM
PROJECT ARCHITECT	MARTIN BREUER RUFF AND ASSOCIATES		MAIL@BREUERDESIGNSF.COM
PROJECT STRUCTURAL ENGINEER	MKM AND ASSOCIATES		ERIC@MKMASSOCIATES.COM

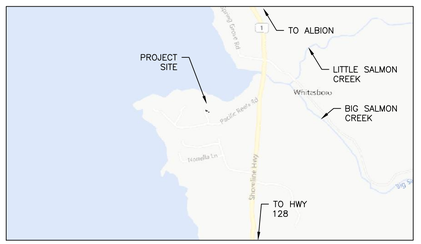
PROJECT DESCRIPTION

GRADING, DRAINAGE, AND EROSION CONTROL IMPROVEMENTS FOR A NEW SINGLE-FAMILY RESIDENCE AND DRIVEWAY



SITE PLAN

SCALE: 1" = 50'



VICINITY MAP

NOT TO SCALE

EROSION AND SEDIMENT CONTROL NOTES

1. PERFORM EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH CHAPTER 16.30 OF THE MENDOCINO COUNTY CODE (MCC).
2. THE APPROVED PLANS SHALL CONFORM TO THE MENDOCINO COUNTY PLANNING AND BUILDING SERVICES (PBS) EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMP'S) GUIDE AS POSTED ON THE MENDOCINO COUNTY WEBSITE.
3. THE PROPERTY OWNER IS RESPONSIBLE FOR PREVENTING STORM WATER POLLUTION GENERATED FROM THE CONSTRUCTION SITE YEAR ROUND. WORK SITES WITH INADEQUATE EROSION PREVENTION AND/OR SEDIMENT CONTROL MAY BE SUBJECT TO A STOP WORK ORDER AND/OR ADDITIONAL INSPECTION FEES TO VERIFY COMPLIANCE WITH MCC.
4. IF DISCREPANCIES OCCUR BETWEEN THESE NOTES, MATERIAL REFERENCED ON THE APPROVED PLANS OR MANUFACTURER'S RECOMMENDATIONS, THEN THE MOST PROTECTIVE SHALL APPLY.
5. AT ALL TIMES THE PROPERTY OWNER IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH THE STATE OF CALIFORNIA NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION AND LAND DISTURBING ACTIVITIES SUCH AS CLEARING, GRADING, EXCAVATION, STOCKPILING, AND RECONSTRUCTION OF EXISTING FACILITIES INVOLVING REMOVAL AND REPLACEMENT.
6. THE PROPERTY OWNER MUST IMPLEMENT AN EFFECTIVE COMBINATION OF EPSC ON ALL DISTURBED AREAS DURING THE RAINY SEASON (OCTOBER 1 – APRIL 30). GRADING AND DRAINAGE IMPROVEMENT SHALL BE PERMITTED DURING THE RAINY SEASON ONLY WHEN ON-SITE SOIL CONDITIONS PERMIT THE WORK TO BE PERFORMED IN COMPLIANCE WITH MCC.
7. DURING THE RAINY SEASON, STORM WATER BMP'S REFERENCED OR DETAILED IN CALTRANS CONSTRUCTION SITE BEST MANAGEMENT PRACTICES MANUAL SHALL BE IMPLEMENTED AND FUNCTIONAL ON THE SITE AT ALL TIMES AND THE AREA OF ERODIBLE LAND EXPOSED AT ANY ONE TIME DURING THE WORK SHALL NOT EXCEED ONE ACRE OR 20 PERCENT OF THE PERMITTED WORK AREA, WHICHEVER IS GREATER, AND THE TIME OF EXPOSURE SHALL BE MINIMIZED TO THE MAXIMUM EXTENT PRACTICABLE.
8. DURING THE NON-RAINY SEASON, ON ANY DAY WHEN THE NATIONAL WEATHER SERVICE FORECAST IS A CHANCE OF RAIN OF 30 PERCENT OR GREATER WITHIN THE NEXT 24 HOURS, STORM WATER BMP'S AS SHOWN ON THE EROSION CONTROL PLAN SHEET OF THIS PLAN SET SHALL BE FUNCTIONAL ON THE SITE TO PREVENT SOIL AND OTHER POLLUTANT DISCHARGES. AT ALL OTHER TIMES, BMP'S SHOULD BE STORED ON SITE IN PREPARATION FOR INSTALLATION PRIOR TO RAIN EVENTS.
9. EPSC BMP'S SHALL BE INSPECTED BY THE PROPERTY OWNER BEFORE FORECASTED STORM EVENTS AND AFTER STORM EVENTS TO ENSURE BMP'S ARE FUNCTIONING PROPERLY. EPSC BMP'S THAT HAVE FAILED OR ARE NO LONGER EFFECTIVE SHALL BE PROMPTLY REPLACED. EPSC BMP'S SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED.
10. THE LIMITS OF GRADING SHALL BE DEFINED AND MARKED ON SITE TO PREVENT DAMAGE TO SURROUNDING TREES AND OTHER VEGETATION. PRESERVATION OF EXISTING VEGETATION SHALL OCCUR TO THE MAXIMUM EXTENT PRACTICABLE. ANY EXISTING VEGETATION WITHIN THE LIMITS OF GRADING THAT IS TO REMAIN UNDISTURBED BY THE WORK SHALL BE IDENTIFIED AND PROTECTED FROM DAMAGE BY MARKING, FENCING, OR OTHER MEASURES.
11. CHANGES TO THE EPSC PLAN MAY BE MADE TO RESPOND TO FIELD CONDITIONS IF THE ALTERNATIVE BMP'S ARE EQUIVALENT OR MORE PROTECTIVE THAN THE BMP'S SHOWN ON THE APPROVED PLANS. ALTERNATIVE BMP'S ARE SUBJECT TO REVIEW AND APPROVAL BY PBS STAFF.
12. DISCHARGES OF POTENTIAL POLLUTANTS FROM CONSTRUCTION SITES SHALL BE PREVENTED USING SOURCE CONTROLS TO THE MAXIMUM EXTENT PRACTICABLE. POTENTIAL POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO: SEDIMENT, TRASH, NUTRIENTS, PATHOGENS, PETROLEUM HYDROCARBONS, METALS, CONCRETE, CEMENT, ASPHALT, LIME, PAINT, STAINS, GLUES, WOOD PRODUCTS, PESTICIDES, HERBICIDES, CHEMICALS, HAZARDOUS WASTE, SANITARY WASTE, VEHICLE OR EQUIPMENT WASH WATER, AND CHLORINATED WATER.
13. ENTRANCE(S) TO THE CONSTRUCTION SITE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF POTENTIAL POLLUTANTS OFFSITE. POTENTIAL POLLUTANTS DEPOSITED ON PAVED AREAS WITHIN THE COUNTY RIGHT-OF- WAY, SUCH AS ROADWAYS AND SIDEWALKS, SHALL BE PROPERLY DISPOSED OF AT THE END OF EACH WORKING DAY OR MORE FREQUENTLY AS NECESSARY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING CONSTRUCTION VEHICLES LEAVING THE CONSTRUCTION SITE ON A DAILY BASIS TO PREVENT DUST, SILT, AND DIRT FROM BEING RELEASED OR TRACKED OFFSITE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AT THE END OF EACH WORKING DAY OR MORE OFTEN, AS NECESSARY.
14. ALL DISTURBED AREAS SHALL BE PROTECTED BY USING EROSION PREVENTION BMP'S TO THE MAXIMUM EXTENT PRACTICABLE, SUCH AS ESTABLISHING VEGETATION COVERAGE, HYDROSEEDING, STRAW MULCH, GEOTEXTILES, PLASTIC COVERS, BLANKETS, OR MATS. TEMPORARY REVEGETATION SHALL BE INSTALLED AS SOON AS PRACTICAL AFTER VEGETATION REMOVAL, BUT IN ALL CASES PRIOR TO OCTOBER 1. PERMANENT REVEGATATION OR LANDSCAPING SHALL BE INSTALLED PRIOR TO FINAL INSPECTION.
15. WHENEVER IT IS NOT POSSIBLE TO USE EROSION PREVENTION BMP'S ON EXPOSED SLOPES, SEDIMENT CONTROL BMP'S SUCH AS FIBER ROLLS AND SILT FENCES SHALL BE INSTALLED TO PREVENT SEDIMENT MIGRATION. FIBER ROLLS AND SILT FENCES SHALL BE TRENCHED AND KEYED INTO THE SOIL AND INSTALLED ON CONTOUR. SILT FENCES SHALL BE INSTALLED APPROXIMATELY 2 TO 5 FEET FROM TOE OF SLOPE.
16. HYDROSEEDING SHALL BE CONDUCTED IN A THREE STEP PROCESS. FIRST, EVENLY APPLY SEED MIX AND FERTILIZER TO THE EXPOSED SLOPE. SECOND, EVENLY APPLY MULCH OVER THE SEED AND FERTILIZER. THIRD, STABILIZE THE MULCH IN PLACE. AN EQUIVALENT SINGLE STEP PROCESS, WITH SEED, FERTILIZER, WATER, AND BONDED FIBERS IS ACCEPTABLE.
17. APPLICATIONS SHALL BE BROADCASTED MECHANICALLY OR MANUALLY AT THE RATES SPECIFIED SEED MIX AND FERTILIZER SHALL BE WORKED INTO THE SOIL BY ROLLING OR TAMPING. IF STRAW IS USED AS MULCH, STRAW SHALL BE DERIVED FROM WHEAT, RICE, OR BARLEY AND BE APPROXIMATELY SIX TO EIGHT INCHES IN LENGTH. STABILIZATION OF MULCH SHALL BE DONE HYDRAULICALLY BY APPLYING AN EMULSION OR MECHANICALLY BY CRIMPING OR PUNCHING THE MULCH INTO THE SOIL. EQUIVALENT METHODS AND MATERIALS MAY BE USED ONLY IF THEY ADEQUATELY PROMOTE VEGETATION GROWTH AND PROTECT EXPOSED SLOPES.

MATERIALS	APPLICATION RATE (POUNDS PER ACRE)
SEED MIX	
BROMUS MOLLIS (BLANDO BROME)	40
TRIFOLIUM HIRTUM (HYKON ROSE CLOVER)	20
FERTILIZER	
6-20-0 AND 15% SULPHUR	500
MULCH	
STRAW	4000
HYDRAULIC STABILIZING'	
M-BINDER OR SENTINEL	75-100
EQUIVALENT MATERIAL	PER MANUFACTURER
NON-ASPHALTIC, DERIVED FROM PLANTS	

18. DUST CONTROL SHALL BE PROVIDED BY CONTRACTOR DURING ALL PHASES OF CONSTRUCTION.
19. STORM DRAIN INLETS SHALL BE PROTECTED FROM POTENTIAL POLLUTANTS UNTIL DRAINAGE CONVEYANCE SYSTEMS ARE FUNCTIONAL AND CONSTRUCTION IS COMPLETE.
20. ENERGY DISSIPATERS SHALL BE INSTALLED AT STORM DRAIN OUTLETS WHICH MAY CONVEY EROSIVE STORM WATER FLOW.
21. SOIL, MATERIAL STOCKPILES, AND FERTILIZING MATERIAL SHALL BE PROPERLY PROTECTED WITH PLASTIC COVERS OR EQUIVALENT BMP'S TO MINIMIZE SEDIMENT AND POLLUTANT TRANSPORT FROM THE CONSTRUCTION SITE.
22. SOLID WASTE, SUCH AS TRASH, DISCARDED BUILDING MATERIALS AND DEBRIS, SHALL BE PLACED IN DESIGNATED COLLECTION AREAS OR CONTAINERS. THE CONSTRUCTION SITE SHALL BE CLEARED OF SOLID WASTE DAILY OR AS NECESSARY. REGULAR REMOVAL AND PROPER DISPOSAL SHALL BE COORDINATED BY THE CONTRACTOR.
23. A CONCRETE WASHOUT AREA SHALL BE DESIGNATED TO CLEAN CONCRETE TRUCKS AND TOOLS. AT NO TIME SHALL CONCRETE PRODUCTS AND WASTE BE ALLOWED TO ENTER COUNTY WATERWAYS SUCH AS CREEKS OR STORM DRAINS. NO WASHOUT OF CONCRETE, MORTAR MIXERS, OR TRUCKS SHALL BE ALLOWED ON SOIL. CONCRETE WASTE SHALL BE PROPERLY DISPOSED.
24. PROPER APPLICATION, CLEANING, AND STORAGE OF POTENTIALLY HAZARDOUS MATERIALS, SUCH AS PAINTS AND CHEMICALS, SHALL BE CONDUCTED TO PREVENT THE DISCHARGE OF POLLUTANTS.
25. TEMPORARY RESTROOMS AND SANITARY FACILITIES SHALL BE LOCATED AND MAINTAINED DURING CONSTRUCTION ACTIVITIES TO PREVENT THE DISCHARGE OF POLLUTANTS.
26. APPROPRIATE VEHICLE STORAGE, FUELING, MAINTENANCE, AND CLEANING AREAS SHALL BE DESIGNATED AND MAINTAINED TO PREVENT DISCHARGE OF POLLUTANTS. NECESSARY.

CONSTRUCTION GENERAL PERMIT NOTES

1. THE PROJECT WILL DISTURB 0.25 ACRES. THEREFORE, A CONSTRUCTION GENERAL PERMIT THROUGH THE STATE WATER QUALITY CONTROL BOARD WILL NOT BE REQUIRED.

SURVEY NOTES

1. TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED ON A FIELD SURVEY PERFORMED ON 9/27/2022 BY CORNERSTONE CIVIL DESIGN.
2. BOUNDARY LINES SHOWN ARE APPROXIMATE BASED ON FIELD TIES AND A PREVIOUS SURVEY BY I.L. WELTY AND ASSOCIATES. A LICENSED SURVEYOR SHOULD BE CONTRACTED IF THE EXACT LOCATION OF THE BOUNDARY LINE LOCATION IN RELATIONSHIP TO THIS TOPOGRAPHIC SURVEY IS NECESSARY.
3. BENCHMARK: THE BASIS OF ELEVATION FOR THE TOPOGRAPHY MAP IS BASED ON AN ASSUMED DATUM. OF CONTROL POINT #1 WITH AN ELEVATION OF 500.00'
4. BASIS OF BEARINGS: THE BASIS OF BEARINGS IS ASSUMED APPROXIMATION USING AERIAL IMAGERY.
5. CONTOUR INTERVAL IS: 1 FOOT
6. UTILITIES SHOWN HEREON ARE BASED UPON PHYSICAL FEATURES OBSERVED AT THE TIME OF THE SURVEY. CORNERSTONE CIVIL DESIGN ACCEPTS NO LIABILITY FOR THE LOCATION, EXISTENCE OR NON-EXISTENCE OF THOSE UNDERGROUND STRUCTURES, UTILITY LINES AND RELATED APPURTENANCES. LOCATION OF UNDERGROUND UTILITIES SHALL BE PERFORMED BY A SUBSURFACE UTILITY LOCATING COMPANY (IF DESIRED).
7. TREE TRUNK DIAMETERS ARE APPROXIMATE AND WERE MEASURED AT CHEST HEIGHT (4'+/-) CONSULT A CERTIFIED TREE ARBORIST WHEN IT IS NECESSARY TO ACCURATELY DETERMINE PERTINENT TREE INFORMATION.
8. ALL TREES SMALLER THAN 4" WERE NOT SURVEYED AND ARE NOT SHOWN ON THIS MAP.
9. THE CONTENT OF THIS MAP WAS DEFINED BY CONTRACT AT THE SPECIFIC REQUEST OF THE CLIENT(S) AND/OR THEIR CONSULTANT(S). CORNERSTONE CIVIL DESIGN ACCEPTS NO LIABILITY FOR USE OF THIS MAP BY ANY ONE OTHER THAN THE CLIENT(S) AND/OR CONSULTANTS FOR WHOM IT WAS PREPARED.
10. ANY EASEMENTS SHOWN ON THIS MAP ARE APPROXIMATE. ONLY EASEMENT SHOWN ON THE RECORD MAPS ARE SHOWN AND THERE MAY BE OTHER EASEMENTS ON THE PROPERTY. IF THE CLIENT WOULD LIKE ALL EASEMENTS SHOWN, A LICENSED SURVEYOR SHOULD BE CONTRACTED.

EARTHWORK QUANTITIES

CUT: 64 CY
FILL: 76 CY
NET: 12 CY IMPORT

1. THE QUANTITIES LISTED ARE THE ENGINEER'S ESTIMATE OF SURFACE GRADING ONLY. THE EARTHWORK QUANTITIES ABOVE HAVE NOT BEEN ADJUSTED TO ACCOUNT FOR:
   1.1. HOUSE FOOTINGS
   1.2. TOPSOIL STRIPPING
   1.3. CLEARING AND GRUBBING INCLUDING REMOVAL OF EXISTING PAVEMENT SECTIONS OR UNACCEPTABLE SOILS.
   1.4. KEYING, BENCHING, OVER-EXCAVATION AND RECOMPACTION
   1.5. TRENCH SPOILS
2. CONTRACTOR IS RESPONSIBLE FOR HIS/HER OWN EARTHWORK QUANTITIES.
3. NO CONTRACTION FACTOR HAS BEEN APPLIED TO THE EARTHWORK NUMBERS. ACTUAL EXPANSION/CONTRACTION AMOUNT MAY BE DIFFERENT DUE TO FIELD CONDITIONS.

FLOOD ZONE NOTES

1. THE SUBJECT PROPERTY IS LOCATED OUTSIDE OF A FEMA FLOOD HAZARD ZONES AS INDICATED BY THE LATEST FEMA FLOOD HAZARD DATA.

BMP INSPECTION NOTE

THERE IS TO BE A BMP INSPECTION PRIOR TO ANY GRADING TAKING PLACE SHOULD THE START OF THE DISTURBANCE TAKE PLACE DURING THE WET SEASON (OCTOBER 15TH TO APRIL 15TH) TO VERIFY THAT THE BMP'S ARE IN PLACE AND THERE ARE BMP MATERIALS ON SITE.

GRADING AND DRAINAGE NOTES

1. PERFORM GRADING AND DRAINAGE IMPROVEMENTS IN ACCORDANCE WITH CHAPTER 18.70 OF THE MENDOCINO COUNTY CODE (MCC) APPLICABLE COUNTY OF MENDOCINO REGULATIONS AND THE GEOTECHNICAL INVESTIGATION BY BRUNSING ASSOCIATES, INC., DATED SEPTEMBER 28, 2022.
2. ALL WORK SHALL BE DONE IN COMPLIANCE WITH THE APPROVED PLANS AND SPECIFICATIONS. THE APPROVED PLANS AND SPECIFICATIONS SHALL NOT BE CHANGED WITHOUT THE WRITTEN APPROVAL OF THE COUNTY OF MENDOCINO PLANNING AND BUILDING SERVICES DEPARTMENT (PBS). PROPOSED MODIFICATIONS TO THE APPROVED PLANS AND SPECIFICATIONS SHALL BE SUBMITTED TO PBS IN WRITING, TOGETHER WITH ALL NECESSARY TECHNICAL INFORMATION AND DESIGN DETAILS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROPERTY OWNER AND ENGINEER OF RECORD. IF APPLICABLE, UPON DISCOVERING DISCREPANCIES, ERRORS, OR OMISSIONS IN THE APPROVED PLANS. PRIOR TO PROCEEDING, THE PROPERTY OWNER SHALL HAVE THE APPROVED PLANS REVISED TO CLARIFY IDENTIFIED DISCREPANCIES, ERRORS, OR OMISSIONS. PBS MAY REQUIRE UNAUTHORIZED WORK TO BE REDONE OR REMOVED TO VERIFY COMPLIANCE WITH THE MCC. PBS MAY INITIATE ENFORCEMENT ACTION AND SEEK THE IMPOSITION OF CIVIL PENALTIES FOR VIOLATIONS OF MCC.
3. THE GRADING OR DRAINAGE PERMIT AND A COPY OF THE APPROVED PLANS SHALL BE MAINTAINED ON THE PROJECT SITE THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.
4. PBS MAY ORDER THAT ANY WORK STOP IMMEDIATELY IF IT IS PERFORMED CONTRARY TO CHAPTER 18.70 OF THE MCC, THE APPROVED PLANS AND SPECIFICATIONS, PERMIT CONDITIONS, OR ANY WORK THAT HAS BECOME HAZARDOUS TO PROPERTY OR THE PUBLIC. A GRADING OR DRAINAGE PERMIT MAY BE SUSPENDED, REVOKED, OR MODIFIED BY PBS IN ACCORDANCE WITH MCC 18.70.140.
5. ISSUANCE OF A GRADING OR DRAINAGE PERMIT BY PBS DOES NOT ELIMINATE THE RESPONSIBILITY OF THE PROPERTY OWNER TO SECURE PERMITS FROM OTHER AGENCIES WITH REGULATORY RESPONSIBILITIES FOR THE USES AND CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE WORK SHOWN ON THE APPROVED PLANS. FAILURE TO OBTAIN ALL REQUIRED PERMITS MAY RESULT IN FINES FROM OTHER AGENCIES.
6. EXISTING DRAINAGE COURSES RECEIVING WATERS FROM THE PROJECT SITE AND LOCATED THROUGHOUT THE PROJECT SITE SHALL REMAIN OPEN AND CLEAR OF DEBRIS TO PROPERLY CONVEY STORM WATER. IF EXISTING DRAINAGE COURSES RECEIVING WATERS FROM THE PROJECT SITE ARE LOCATED IN THE COUNTY RIGHT-OF-WAY AND NEED MAINTENANCE, CONTACT THE MENDOCINO COUNTY DEPARTMENT OF TRANSPORTATION FOR FURTHER ASSISTANCE. IN ANY EVENT, THE PROPERTY OWNER AND/OR CONTRACTOR SHALL BE HELD LIABLE FOR ANY DAMAGE DUE TO OBSTRUCTING NATURAL DRAINAGE PATTERNS.
7. THE CONTRACTOR SHALL CONTACT THE UNDERGROUND SERVICE ALERT (USA), AT 811, AT LEAST TWO WORKING DAYS, BUT NOT MORE THAN 14 CALENDAR DAYS, PRIOR TO EXCAVATION. THE CONTRACTOR SHALL UNCOVER RELEVANT UTILITIES TO VERIFY THEIR LOCATION AND ELEVATION. IF UNEXPECTED OR CONFLICTING UTILITIES ARE ENCOUNTERED DURING EXCAVATION, NOTIFY USA, THE UTILITY OWNER, AND/OR CORNERSTONE CIVIL DESIGN, IF APPLICABLE, IMMEDIATELY. UTILITIES INCLUDE BUT ARE NOT LIMITED TO WATER, SEWER, ELECTRICAL, GAS, TELEPHONE, AND CABLE/TV. THE EXCAVATOR SHALL DELINEATE WITH PAINT OR OTHER SUITABLE MARKINGS THE AREA TO BE EXCAVATED.
8. IN THE EVENT CULTURAL RESOURCES (SUCH AS HISTORICAL, ARCHAEOLOGICAL, AND PALEONTOLOGICAL RESOURCES, AND HUMAN REMAINS) ARE DISCOVERED DURING GRADING OR OTHER CONSTRUCTION ACTIVITIES, WORK SHALL IMMEDIATELY BE HALTED WITHIN THE VICINITY OF TIHE FIND. THE NORTHWEST INFORMATION CENTER SHALL BE NOTIFIED AT 588-8455. A QUALIFIED ARCHEOLOGIST SHALL BE CONSULTED FOR AN ON-SITE EVALUATION. ADDITIONAL MITIGATION MAY BE REQUIRED BY THE COUNTY PER THE ARCHEOLOGIST'S RECOMMENDATIONS. IF HUMAN BURIALS OR HUMAN REMAINS ARE ENCOUNTERED, THE CONTRACTOR SHALL ALSO NOTIFY THE COUNTY CORONER.
9. SHOULD GRADING OPERATIONS ENCOUNTER HAZARDOUS MATERIALS, OR WHAT APPEAR TO BE HAZARDOUS MATERIALS, STOP WORK IMMEDIATELY IN THE CONTAMINATED AREA AND CONTACT 911 OR THE APPROPRIATE AGENCY FOR FURTHER INSTRUCTION.
10. GRADING AND DRAINAGE IMPROVEMENTS SHALL BE SET BACK FROM SITE BOUNDARIES IN COMPLIANCE WITH REQUIREMENTS OF MCC 18.70.110.
11. EXCESS SOIL SHALL BE REMOVED FROM THE PROJECT SITE UNLESS DEPICTED TO REMAIN ONSITE PER THE APPROVED PLAN. THE SITE RECEIVING SOIL MAY REQUIRE A GRADING PERMIT UNLESS EXEMPTED BY MCC 18.70.030.
12. CONTOURS, ELEVATIONS, AND SHAPES OF FINISHED SURFACES SHALL BE BLENDED WITH ADJACENT NATURAL TERRAIN TO ACHIEVE A CONSISTENT GRADE AND NATURAL APPEARANCE. BORDERS OF CUT SLOPES AND FILLS SHALL BE ROUNDED OFF TO A MINIMUM RADIUS OF FIVE FEET TO BLEND WITH THE NATURAL TERRAIN.
13. FILL MATERIAL SHALL NOT INCLUDE ORGANIC, FROZEN, OR OTHER DELETERIOUS MATERIALS. NO ROCK OR SIMILAR IRREDUCIBLE MATERIAL GREATER THAN SIX INCHES IN ANY DIMENSION SHALL BE INCLUDED IN FILLS EXCEPT WHERE APPROVED BY THE SOILS ENGINEER. FILLS SHALL BE CONSTRUCTED IN LIFTS NOT EXCEEDING EIGHT INCHES UNLESS OTHERWISE APPROVED BY THE SOILS ENGINEER. COMPLETED FILLS SHALL BE STABLE, WELL-INTEGRATED, AND BONDED TO ADJACENT MATERIALS AND THE MATERIALS ON WHICH THEY REST. FILLS SHALL BE COMPETENT TO SUPPORT ANTICIPATED LOADS AND BE STABLE AT THE DESIGN SLOPES SHOWN ON THE APPROVED PLANS AND SPECIFICATIONS OR AS DIRECTED BY THE SOILS ENGINEER.
14. GROUND SURFACES SHALL BE PREPARED TO RECEIVE FILL BY REMOVING VEGETATION, TOPSOIL, AND OTHER UNSUITABLE MATERIALS, AND SCARIFYING THE GROUND TO PROVIDE A BOND WITH THE FILL MATERIAL.
15. FILL SHALL NOT BE PLACED ON NATURAL SLOPES STEEPER THAN 2H:1V (50 PERCENT), UNLESS DIRECTED BY THE PROJECT SOILS ENGINEER.
16. FILLS INTENDED TO SUPPORT STRUCTURES OR SURCHARGES SHALL BE COMPACTED TO A MINIMUM OF 90 PERCENT OF MAXIMUM DRY DENSITY, AS DETERMINED BY ASTM D 1557, MODIFIED PROCTOR. A HIGHER COMPACTION PERCENTAGE MAY BE REQUIRED BY THE SOILS ENGINEER.
17. FILLS NOT INTENDED TO SUPPORT STRUCTURES OR SURCHARGES SHALL BE COMPACTED AS FOLLOWS:
    17.1. FILL GREATER THAN THREE FEET IN DEPTH SHALL BE COMPACTED TO THE DENSITY SPECIFIED BY THE SOILS ENGINEER.
    17.2. FILLS NO GREATER THAN THREE FEET IN DEPTH SHALL BE COMPACTED TO THE DENSITY NECESSARY FOR IHE INTENDED USE OR AS DIRECTED BY THE SOILS ENGINEER.
18. CORNERSTONE CIVIL DESIGN IS NOT RESPONSIBLE FOR DETERMINING STREAM AND/OR HABIT CLASSIFICATION OR LOCATION. OWNER IS RESPONSIBLE FOR HIRING A QUALIFIED CONSULTANT TO DELINEATE JURISDICTIONAL STREAMS OR HABITATS ON HIS/HER PROPERTY.

GENERAL UTILITY NOTES

1. EXISTING UNDERGROUND FACILITIES SHOWN ON THESE PLANS ARE APPROXIMATE AND HAVE BEEN LOCATED BASED ON TOPOGRAPHIC FEATURES AND AVAILABLE INFORMATION. CORNERSTONE CIVIL DESIGN, THE OWNER, AND THE CITY/COUNTY ASSUME NO RESPONSIBILITY FOR THE ACCURACY OF THESE FACILITIES OR FOR THE INADVERTENT OMISSION OF RELATED INFORMATION
2. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (USA) TWO DAYS WORKING DAYS PRIOR TO EXCAVATION. THEY CAN BE REACHED AT 1-800-642-2444
3. EXPOSE EXISTING UTILITIES PRIOR TO TRENCHING TO VERIFY THE ALIGNMENT AND ELEVATIONS OF THE UTILITIES AND TO VERIFY DESIGN ASSUMPTIONS. EXISTING UTILITIES MAY REQUIRE RELOCATION AND/OR PROPOSED IMPROVEMENTS MAY REQUIRE GRADE OR ALIGNMENT REVISION DUE TO FIELD CONDITIONS. IF THE EXPOSED UTILITY IS DETERMINED TO BE IN A LOCATION WHICH IS NOT REFLECTED BY THE CONSTRUCTION DOCUMENTS, NOTIFY CORNERSTONE CIVIL DESIGN IN WRITING SO THAT APPROPRIATE ADJUSTMENTS CAN BE MADE.
4. THE CONTRACTOR IS CAUTIONED NOT TO ORDER ITEMS OR INSTALL IMPROVEMENTS UNTIL CONFLICTS ARE RESOLVED. IMPROVEMENTS INSTALLED OR ORDERED PRIOR TO CONFLICT RESOLUTION SHALL BE DONE SOLELY AT THE CONTRACTOR'S RISK AND AT NO EXPENSE TO THE OWNER OR CORNERSTONE CIVIL DESIGN.
5. UTILITY CONFLICTS MAY OCCUR IN THOSE INSTANCES WHERE TWO GRAVITY UTILITIES CROSS AND LACK THE REQUIRED SEPARATION, OR IN THOSE INSTANCE WHERE AN EXISTING UTILITY HAS NOT BEEN IDENTIFIED IN THE CONSTRUCTION DOCUMENTS. REPORT UTILITY CONFLICTS TO THE OWNER'S REPRESENTATIVE IN WRITING AS THEY ARE ENCOUNTERED SO THAT THE OWNER AND OWNER'S REPRESENTATIVE CAN MAKE A DECISION AS TO HOW THE CONTRACTOR SHOULD PROCEED WITH THE WORK.
6. CROSSING UTILITIES WHICH HAVE BEEN IDENTIFIED IN THE CONSTRUCTION DOCUMENTS MAY NOT BE CONSTRUED AS UTILITY CONFLICTS. INSTALL GRAVITY UTILITIES TO THE LINES AND ELEVATIONS IDENTIFIED IN THE CONSTRUCTION DOCUMENTS. INSTALL OTHER UTILITIES ABOVE OR BELOW GRAVITY UTILITIES WHILE COMPLYING WITH THE MINIMUM COVER REQUIREMENTS FOR EACH UTILITY INSTALLED.

REGISTERED PROFESSIONAL ENGINEER
TYLER J. PEARSON
No. 85194
CIVIL
STATE OF CALIFORNIA
Tyler J Pearson

REVISIONS

REV.	DATE	DESCRIPTION	BY

CORNERSTONE CIVIL DESIGN
CIVIL ENGINEERING LAND PLANNING PROJECT MANAGEMENT
149 GAMAY PLACE UKIAH, CA 95482
(707) 972-7147 CORNERSTONECIVILDESIGN@GMAIL.COM

PRELIMINARY-NOT FOR CONSTRUCTION

KING RESIDENCE
COVER SHEET AND NOTES
2731 SEASIDE COURT ALBION, CA
APN 123-340-27

DATE: 5/23/2023
JOB #: 2255

SHEET
C1
OF 3 SHEETS

LEGEND

- 5" PORTLAND CEMENT CONCRETE WITH #3 BARS AT 18" O.C. EACH WAY OVER 4" CLASS 2 AGGREGATE BASE COMPACTED TO 95%
- 4" PORTLAND CEMENT CONCRETE WITH #3 BARS AT 18" O.C. EACH WAY OVER 4" CLASS 2 AGGREGATE BASE COMPACTED TO 95%
- PROPOSED BUILDING
- PROPOSED WOODEN DECK–SEE ARCHITECT PLANS
- RIPRAP ENERGY DISSIPATER PER DETAIL D4 ON SHEET C5
- 90 EXISTING MAJOR CONTOUR
- 89 EXISTING MINOR CONTOUR
- 90 PROPOSED MAJOR CONTOUR
- 89 PROPOSED MINOR CONTOUR
- APPROXIMATE ASSESSOR'S PARCEL LINE
- EARTHEN V–DITCH PER DETAIL ON SHEET C5
- FLOWLINE
- GRADE BREAK

ABBREVIATIONS

BW	BOTTOM OF WALL ELEVATION AT FINISH GRADE (NOT FOOTING ELEV.)
EP	EDGE OF PAVEMENT ELEVATION
FF	FINISH FLOOR OF BUILDING ELEVATION
FG	FINISH GRADE (LANDSCAPE OR DIRT) ELEVATION
FL	FLOWLINE OF SURFACE, GUTTER OR DITCH ELEVATION
FS	FINISH SURFACE (HARDSCAPE) ELEVATION
HP	HIGH POINT ELEVATION
RIM	TOP OF MANHOLE, DRAINAGE INLET, OR UTILITY BOX ELEVATION
INV	PIPE INVERT ELEVATION
TC	TOP OF CURB ELEVATION
TSL	TOP OF BIORETENTION SOIL LAYER ELEVATION
TW	TOP OF WALL ELEVATION

KEYNOTES

1. INSTALL CONCRETE CURB

REGISTERED PROFESSIONAL ENGINEER
TYLER J. PEARSON
No. 85194
CIVIL
STATE OF CALIFORNIA

Tyler J Pearson

REVISIONS

REV.	DATE	DESCRIPTION	BY

CORNERSTONE CIVIL DESIGN
CIVIL ENGINEERING LAND PLANNING PROJECT MANAGEMENT
1491 GAMAY PLACE UKIAH, CA 95482
(707) 972-7147 CORNERSTONECIVILDESIGN@GMAIL.COM

PRELIMINARY-NOT FOR CONSTRUCTION

KING RESIDENCE

GRADING AND DRAINAGE PLAN

2731 SEASIDE COURT ALBION, CA
APN 122-340-27

DATE: 5/23/2023

JOB #: 2255

SHEET
C2
OF 3 SHEETS

AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY

CALL 811 BEFORE YOU DIG

UNDERGROUND SERVICE ALERT (USA)
NOTICE TO CALL A MIN. 48 HOURS PRIOR TO CONSTRUCTION.

LEGEND

PROPOSED STORM DRAIN PIPE INSTALLED IN TRENCH PER DETAIL ON SHEET C5	
DW	DOMESTIC WATER LINE
FW	FIRE SPRINKLER WATER SUPPLY LINE
WJT	WATER JOINT TRENCH (FIRE SPRINKLER SUPPLY AND DOMESTIC WATER LINES) SIZE TBD BY OTHERS
JT	DRY UTILITIES JOINT TRENCH, SEE DETAILS BY OTHERS
SS	SANITARY SEWER LINE 4" PVC SDR-35
RL	SOLID 4" PVC SDR-35 SLOPED AT 1% MIN. CONNECTIONS TO STORM DRAIN SHALL BE MADE WITH 6"X6"X4" WYE FITTING

- ROOF DOWNSPOUT
- FIRE HYDRANT
- WATER VALVE
- WATER METER
- SANITARY SEWER CLEANOUT
- SANITARY SEWER MANHOLE (SSMH)
- STORM DRAIN MANHOLE (SDMH)
- STORM DRAIN DROP INLET (SDDI)
- STORM DRAIN CURB INLET (SDCI)
- JOINT UTILITY POLE
- LIGHT POLE

KEYNOTES

1. GAS AND ELECTRIC METER, COORDINATE LOCATION WITH ARCHITECTURE PLANS

UTILITY GENERAL NOTES

1. CONTRACT SHALL POTHOLE ALL EXISTING UTILITIES TO VERIFY EXACT LOCATION PRIOR TO CONSTRUCTION.
2. PIPE CHASES FOR LANDSCAPE IRRIGATION AND LIGHTING ARE NOT SHOWN ON THESE PLANS AND SHALL BE INSTALLED PRIOR TO PLACING CONCRETE FLATWORK.
3. ALL STORM DRAIN PIPES SHOWN ARE TO BE HDPE DUAL WALL WATER-TIGHT PIPE OR SDR-35, UNLESS NOTED OTHERWISE.
4. FIRE SPRINKLER SUPPLY PIPES SHALL HAVE A MINIMUM OF 36" COVER IN DRIVEWAYS AND 30" COVER IN LANSCAPE AREAS.
5. ALL ONSITE WATER LINES SMALLER THAN 4"ø SHALLBE PVC SCHEDULE 40 UNLESS OTHERWISE NOTED IN A STANDARD OR NOTE.
6. ALL ONSITE WATER LINES 4"ø OR LARGER SHALL BE PVC C900 CL150 UNLESS OTHERWISE NOTED IN A STANDARD OR NOTE.
7. THRUST BLOCKS FOR WATER MAINS SHALL BE SIZED IN ACCORDANCE WITH NFPA 24.
8. ALL FIRE SPRINKLER SERVICE PIPES SHALL BE INSTALLED AND TESTED PER NFPA 24, PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES.
9. THE UNDERGROUND CONTRACTOR SHALL SUBMIT TO THE FIRE INSPECTOR A RECORD-OF-COMPLETION FORM IN ACCORDANCE WITH NFPA 24, AFTER THE ENTIRE FIRE SPRINKLER SERVICE PIPES SYSTEM HAS BEEN INSPECTED AND TESTED TO MEET THE MINIMUM SITE REQUIREMENTS.
10. ALL SEWER LINES SHALL BE BE PVC SDR-35 OR APPROVED EQUIVALENT.

DRAINAGE NOTES

1. ALL STORM DRAIN PIPE SHALL BE SDR-35 OR CORRUGATED DUAL-WALL HDPE PIPE INSTALLED IN TRENCH PER DETAIL U1 ON SHEET C5.
2. PERIMETER FOUNDATION DRAINS, CRAWL SPACE DRAINS AND SLAB UNDERDRAINS ARE NOT SHOWN AND SHALL BE INSTALLED PER THE SOILS REPORT AND AS DIRECTED IN THE FIELD BY A REPRESENTATIVE OF THE SOILS ENGINEER.

STORM DRAIN STRUCTURE TABLE

DI- 1-5	12'X12" NDS CATCH BASIN WITH BLACK ATRIUM GRATE OR APPROVED EQUAL
DI- 6-9	4" PVC RISER (TEE) TO ROUND 4" SATIN BRASS GRATE NDS PART 910B OR APPROVED EQUAL

10 0 5 10 20

SCALE: 1" = 10'

AVOID CUTTING UNDERGROUND UTILITY LINES. IT'S COSTLY

CALL 811 BEFORE YOU DIG

UNDERGROUND SERVICE ALERT (USA)
NOTICE TO CALL A MIN. 48 HOURS PRIOR TO CONSTRUCTION.

REGISTERED PROFESSIONAL ENGINEER
TYLER J. PEARSON
No. 85194
CIVIL
STATE OF CALIFORNIA

Tyler J Pearson

REVISIONS

REV.	DATE	DESCRIPTION	BY

CORNERSTONE CIVIL DESIGN
CIVIL ENGINEERING LAND PLANNING PROJECT MANAGEMENT
1491 GAMAY PLACE UKIAH, CA 95482
(707) 972-7147 CORNERSTONECIVILDESIGN@GMAIL.COM

PRELIMINARY-NOT FOR CONSTRUCTION

KING RESIDENCE

UTILITY PLAN

2731 SEASIDE COURT ALBION, CA
APN 122-340-27

DATE: 5/23/2023
JOB #: 2255

SHEET
C3
OF 3 SHEETS

Brunsing Associates, Inc.

GEOTECHNICAL INVESTIGATION

KING AND MYUNG RESIDENCE
2731 SEASIDE COURT
ALBION, CALIFORNIA

Project Number 13525.01

September 28, 2022

Engineers and Geologists

GEOTECHNICAL INVESTIGATION

KING AND MYUNG RESIDENCE
2731 SEASIDE COURT
ALBION, CALIFORNIA

Project Number – 13525.01

prepared for

Andy King and Eun Myung
3235 Roswell Road NE #705
Atlanta, GA 30305

prepared by

BRUNSING ASSOCIATES, INC.
5468 Skylane Blvd. Suite 201
Santa Rosa, CA 95403
(707) 528-6108

September 28, 2022

Erik E. Olsborg
Engineering Geologist – 1072
eolsborg@brunsing.com

Keith A. Colorado
Geotechnical Engineer – 2894
kcolorado@brunsing.com

TABLE OF CONTENTS

LIST OF PLATES

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

This report presents the results of our geotechnical investigation that Brunsing Associates, Inc. (BAI), performed for the planned King and Myung residence, 2731 Seaside Court, Pacific Reefs Subdivision, Albion, Mendocino County, California. The site is located on an ocean bluff, approximately 0.6 miles south of the community of Albion. The property is situated on the south side of Whitesboro Cove, as shown on the Vicinity Map, Plate 1. BAI previously performed an engineering geologic reconnaissance for this property for a previous owner. The results of our reconnaissance were presented in a report dated December 28, 2007.

Our approach to providing the geotechnical and geologic information necessary to perform this investigation and evaluation utilized our knowledge of the geologic conditions in the site vicinity and our experience with similar projects. Field exploration and laboratory testing for this investigation were directed towards confirming anticipated geotechnical and geologic conditions in order to provide the basis for our conclusions and recommendations.

The scope of our geotechnical services, as outlined in our Professional Service Agreement dated April 11, 2022, consisted of reviewing published maps and aerial photographs, an engineering geologic field reconnaissance, subsurface exploration, laboratory testing on soil and bedrock samples, engineering and geologic analyses, slope stability analysis, evaluation of future effects from sea level rise, and the preparation of this report.

2.0 INVESTIGATION AND LABORATORY TESTING

2.1 Published Research

As part of our investigation, we reviewed published geotechnical literature, including geologic, fault, and seismic hazard maps for the site and vicinity. We also reviewed previous geologic/geotechnical reports prepared by BAI on this and nearby properties. A list of selected published references reviewed for this investigation is presented in Appendix A.

2.2 Previous and Current Reconnaissance

BAI's Principal Engineering Geologist, Erik Olsborg and Staff Geologist, Sarah Lockwood, performed an engineering geologic reconnaissance on June 26, 2007, to evaluate the geologic hazards at the site, primarily buff stability and retreat (erosion) rate, fault rupture potential, the effects of sea-level rise, and seismicity. Later, Olsborg and Lockwood performed a marine reconnaissance by ocean kayak to observe the bluff toe on August 16, 2007. At the same time, they assisted Land Surveyor, Forrest Francis, in his topographic survey of the ocean bluff at the property.

BAI's Principal Engineering Geologist, Erik Olsborg returned to the site, along with Staff Geologist David Stafford on May 13, 2022, to re-evaluate the site for geologic hazards at the property, primarily buff stability and retreat (erosion) rate, fault rupture potential, the effects of sea-level rise, and seismicity. They also marked boring locations and photographed the site.

2.3 Aerial Photograph Studies

Our current investigation was augmented by studying historic, black and white, vertical aerial photograph prints of the site dated 1942, July 5, 1952, June 30, 1963, June 23, 1981, September 10, 1998 (from Google Earth) and April 1, 2000. Color, vertical aerial photographs dated March 25, 1986 and June 13, 1993 were obtained from the California Coastal Records Project (www.californiacoastline.org). Other color, vertical aerial photographs that were obtained from Google Earth are dated June 3, 2003, December 31, 2004, June 11, 2005, April 27, 2006, May 24, 2009, April 24, 2010, May 31, 2012, August 17, 2013, June 9, 2016, July 2, 2018 and June 2, 2021.

In addition to reviewing vertical aerial photographs, we also obtained oblique-angle aerial photographs from the California Coastal Records Project. We qualitatively compared oblique aerial photographs of the site from 1972, October 5, 1979, June 1987, November 14, 2002, October 4, 2005, October 1, 2009, September 27, 2013, and October 4, 2019.

2.4 Subsurface Exploration

Our subsurface exploration was conducted on April 22, 2022. The exploration consisted of drilling, logging and sampling three exploratory test borings with a track-mounted drill rig. The drill rig utilized 6-inch diameter, solid-stem flight augers. Borings B-1 through B-3 were drilled to depths of 13.5 to 15.5 feet below the ground surface. The approximate boring locations are shown on Plate 2.

Our staff geologist made a descriptive log of each boring and obtained relatively undisturbed tube samples of the soil and bedrock materials encountered for visual classification and laboratory testing. Soil and bedrock samples were obtained using 3.0-inch (CA) and 2.5-inch (CM) outside diameter, modified California split-barrel samplers. The inside of the sampler barrels contained liners for retaining the soil and bedrock samples. The samplers were driven by a 140-pound drop hammer falling 30 inches per blow. Blows required to drive the CA and CM samplers were converted to SPT blow counts[1] for correlation with empirical test data, using a conversion factor of 0.64 and 0.79, respectively. Blow counts are presented on the boring logs alongside the sample locations.

Logs of the test borings showing the various soil and bedrock types encountered and the depths at which samples were obtained are presented on Plates 3, 4, and 5. The soils are classified in accordance with the Unified Soil Classification System outlined on Plate 6. The various descriptive properties used to describe the soil and bedrock materials are listed on Plates 7 and 8, respectively.

2.5 Laboratory Testing

Soil and bedrock samples obtained during our subsurface exploration were transported to our laboratory and examined to confirm field classifications. Laboratory tests were performed on selected samples to estimate their pertinent geotechnical engineering characteristics. Laboratory

[1] SPT blow counts provide a relative measure of soil consistency and strength, and are utilized in our engineering analyses.

testing consisted of moisture content, dry density, and triaxial-compression tests. The test results are presented opposite the samples tested on the boring logs. A key to test data is provided on Plate 6. The triaxial compression test data are presented on Plate 9.

3.0 SITE CONDITIONS

The property is situated on an elevated marine terrace on the north side of Salmon Point peninsula, as shown on the topographic Vicinity Map, Plate 1. The terrace was formed during the Pleistocene Epoch, when periods of glaciation caused sea level fluctuations, which created a series of steps, or terraces, cut into the coastal bedrock by wave erosion. Shallow marine sediments (Pleistocene terrace deposits) were deposited on the wave-cut, bedrock platforms while they were submerged beneath the ocean during interglacial sea-level high stands. Some of these marine deposits have been locally eroded as the terraces began to emerge from the ocean due to uplift associated with the San Andreas Fault Zone during the middle and late Pleistocene. Present sea levels were achieved approximately 8,000 years ago.

The property is on the south side of a small, northwest-facing ocean bay (Whitesboro Cove) at the mouth of Big Salmon Creek. Salmon Point peninsula extends another approximately 1/3 mile to the west. On average, the terrace has a very gentle slope gradient of approximately 11.5 horizontal to one vertical ratio (11.5H:1V) down toward the north. The gradient is gentler near Seaside Court (13H:1V), and increases slightly (to 9 to 10H:1V) to the north toward the bluff edge. The terrace is bordered on the north by an approximately 140 feet-high ocean bluff that descends northward at a steep gradient of about 1.2H:1V, with local areas that are 1/2H:1V to near vertical. There is an approximately 25 to 30 feet wide gravel, cobble and boulder "pocket" beach at the toe of the bluff. The upper terrace and the ocean bluff at the property in 2007 and 2022 are shown in Site Photographs A and B, Plate 10. Small sea caves were observed at the toe of the bluff during our August 16, 2007 marine reconnaissance as shown in Site Photographs C and D, Plate 11.

A small, subtle drainage swale traverses the eastern portion of the upper terrace and extends to the bluff edge (Plate 2). A small, notch at the mouth of the swale on the bluff edge indicates that periodically, concentrated surface drainage reaches the bluff edge at this location. Some surface water originating on the easterly adjacent property and driveway likely flows into this drainage channel during periods of heavy rainfall.

Site vegetation on the terrace consists of a moderate cover of grass and weeds on the terrace, with a small thicket of pine trees in the southwest portion of the site adjacent to Seaside Court. The upper approximately three quarters of the bluff face is covered by a very dense growth of weeds and brush. Locally bare areas are present lower on the face and at the bluff toe, exposing soil and rock outcrops.

No surface water was observed on the terrace area during our site visits; however, significant seepage was observed in the parts of the upper bluff face that we were able to explore. The dense vegetation conceals saturated conditions on the upper part of the bluff face. No seepage was observed emanating from the rock outcrops at the bluff toe.

4.0 SITE GEOLOGY AND SOIL CONDITIONS

4.1 Regional Geologic and Seismic Setting

Site bedrock has been identified in the references reviewed as Cretaceous-Tertiary Period Coastal Belt Franciscan Complex sandstone, silty sandstone and minor siltstone/shale. The bedrock exposed in the lower portions of the bluff on the property is gray to dark gray, closely to intensely fractured, moderately hard to hard, and little weathered greywacke sandstone. Sandstone encountered within the upper portions of the bluff is gray to dark gray, occasionally to closely fractured, hard, and moderately weathered. Site bedding orientation, measured in the lower portions of the bluff, consists of a northeast trending strike with a steep dip (50 degrees from horizontal to nearly vertical) to the southeast (generally into the bluff).

Pleistocene Epoch terrace deposits overlie the Franciscan bedrock at the site. Terrace deposits typically consist of poorly consolidated sands and silts with minor clay and gravel. These shallow marine and beach deposits were deposited during Pleistocene sea level fluctuations.

The subject property is within the Coast Ranges geomorphic province, a zone of high seismic activity associated with the active San Andreas Fault system, which passes through the Mendocino County coastal area approximately seven kilometers west of the site. The project site will be subject to strong ground shaking due to future, nearby earthquakes on this fault system during the lifetime of the proposed structure.

4.2 Site Geology and Soils

Cretaceous-Tertiary Franciscan Complex bedrock, consisting of grayish-blue sandstone, was encountered at 15.5 feet below the ground surface (bgs) in borings B-1 and B-2(?). The sandstone encountered in our boring B-1, is crushed to intensely fractured, friable and deeply weathered. Where exposed on the property bluffs, the Franciscan sandstone is dark gray, little fractured, moderately hard to hard and little weathered.

The Pleistocene terrace deposits encountered in our borings consist of orange-gray, tan and brown clayey sands that are medium dense to dense. Tan to orange and gray clean sands (little or no clay or silt) were encountered from 8.5 feet to 15.5 feet (the maximum depth explored) in boring B-2 and 11.0 to 13.5 feet (maximum depth explored) in boring B-3. The clean sands in boring B-2 are dense to very dense and the clean sands in boring B-3 are medium dense. The terrace deposits are covered by 2.75 to 3.0 feet of dark brown, silty sand topsoil with minor roots. The topsoils are very loose to medium dense and porous. The terrace deposits appear very low in expansion potential (tendency for volume change with changes in moisture content).

Most of the bluff face within the property is an old, eroded landslide slump, as evidenced by a steep scarp feature on the upper bluff, and hummocky topography extending down the slope (typical of landslide deposits). In some places, the scarp is soil-covered and re-vegetated, but the eastern arm of the scarp is a nearly continuous exposure of near-vertical bare rock. The slide is approximately 110 to 130 feet across (within the property and extending into the easterly adjacent property) by about 160 feet in length (down the bluff slope).

The vegetated slopes are partially disrupted by slope creep deposits. The slope creep deposits are relatively shallow masses, up to a few feet in thickness, of soil and broken, weathered rock materials. These deposits support vegetation, but the deposits can also periodically move slowly downslope, primarily during, or shortly after prolonged periods of rain. The bluff toe consists of apparently in-place bedrock outcrops approximately 20 to 25 feet in vertical height. The thick landslide deposits rest above these outcrops. Debris that reaches the bluff toes is washed away by ongoing wave action.

Several ancient fault splays or cracks exist in the lower portion of the bluff within the Coastal Belt Franciscan Complex bedrock. The faults do not propagate very far into the bedrock, nor do they displace the overlying terrace deposits, and are therefore considered "inactive". No other evidence of faulting was observed in the property vicinity, and none of the published references that we reviewed show faults on, or trending towards, the property. The active, San Andreas Fault is located offshore, approximately 5 miles southwest of the site.

5.0 DISCUSSION AND CONCLUSIONS

5.1 General

Based on the results of our reconnaissance and subsurface exploration, we conclude that the site is geologically and geotechnically suitable for the proposed residence. The main geological/geotechnical considerations affecting the proposed construction are loose and porous near-surface soils, bluff stability, bluff erosion/retreat rate and strong seismic shaking from future earthquakes. These considerations and their possible mitigation measures are discussed below.

5.2 Loose and Porous Terrace Soils

The areas of our borings are covered by approximately 2.75 to 3 feet of surface soils and subsoils that are loose and porous. The underlying terrace deposit soils are medium dense to very dense silty/clayey sand and clean sand (few fines). Foundations and slabs placed directly upon loose or porous soil could undergo damaging differential settlement. Removing a portion of these soils and replacing with compacted fill can mitigate these detrimental effects.

5.3 Settlement

Assuming foundations are designed and constructed in accordance with our recommendations, we estimate that the maximum post-construction settlement due to foundation loads will be less than ¾- inch. We judge that post-construction differential settlement will be less than ½-inch between adjacent foundations.

5.4 Bluff Retreat

Based upon BAI's observations over the last 15 years, plus the benefit of many additional, historic aerial photographs (we had only the 1963, 1981, and 2000 photographs while doing our

reconnaissance in 2007), we are revising our previous bluff retreat rate. For our analysis, we used qualitative comparisons of the 1942 through 2021 vertical aerial photographs as well as the 1972 through 2019 oblique aerial photographs. Our qualitative comparison of the vertical and oblique aerial photographs shows only minor changes to the bluff edges at the site. Comparing the ocean bluff photographs in 2022 with the 2007 (Plate 10) shows very little has changed in the last 15 years. BAI estimates the average bluff retreat rate to be approximately one to two inches per year instead of the 3.25 inches per year estimated in our 2007 report.

BAI's estimated erosion rate is much less than the average rate given in USGS Open File Report 2007-1133 for this region (approximately 16 inches per year). If the USGS rate were accurate, the bluff edge would have retreated over 92 feet in the last 69 years (1952 to 2021, our earliest, accurate aerial photograph up to the most current). Ninety two feet of bluff loss would be easily visible in the aerial photographs that we reviewed for this project, which clearly is not the case.

5.5 Sea Level Rise Effects on Bluff Retreat

Rapid sea-level rise of approximately 400 - 450 feet occurred between 18,000 and 8,000 years before present, according to "Rising Seas in California", Griggs, et al, 2017. Sea levels have remained relatively constant since that time. However, sea levels have started rising again. The California Coastal Commission (CCC) recently adopted the Science Update, dated November 7, 2018 to the 2015 Interpretive Guidelines for addressing Seal Level Rise in Local Coastal Programs and Coastal Development permits. The Science Update provides sea-level rise projections for the San Francisco coastal area, as follows in Table 1:

Table 1: Sea Level Rise Projections*

(Medium-High Risk Aversion)			Documented Rise	Likely Rise
Time Period	Sea Level Rise (Feet)	Inches	Inches	Inches
2000	0	0		
2022**	0.6	7.0	1.7	
2030	0.8	9.6		3.4***
2040	1.3	15.6		4.6****
2050	1.9	22.8		
2060	2.6	31.2		
2070	3.5	42.0		
2080	4.5	54.0		
2090	5.6	67.2		
2097**	6.2	78.1		
2100	6.9	82.8		

*California Coastal Commission, Sea Level Rise Policy Guidance, 2018
**BAI interpolated
***Assumes little or no increase to the rate of sea level rise over the next 9 years
****Assumes little or no increase to the rate of sea level rise over the next 19 years

Recent sea level rise projections by the California Coastal Commission show that by 2097, the sea level will be as much as approximately 78.1 inches higher than the baseline of 2000.

However, according to the National Oceanic and Atmospheric Administration (NOAA) San Francisco tide gauge, sea level rise of just 1.7 inches has occurred since 2000, rather than the 7.0 inches, projected.

Based upon historic aerial photographs and site observations, the current historic, average bluff retreat rate appears to be one to two inches per year (Table 2). The hard bedrock within the lower bluffs is very erosion resistant. Even with a 25-inch sea level rise by 2062, the ocean wave erosion will still be resisted by hard bedrock. The current bluff retreat rate should continue until at least 2042.

Table 2: Bluff Retreat Rate

Years	Span (years)	Cumulative Sea Level Rise (inches)*	Retreat Rate (inches per year)	Amount of Retreat (inches)
2022-2042	20	11"	2.0"/yr.	40
2042-2062	20	25"	3.0"/yr.	60
2062-2082	20	42"	4.0"/yr.	80
2082-2097	15	78"	5.0"/yr.	60
				240" = 20'

*Projected per California Coastal Commission

5.6 Tsunami Hazard

As typical of the Mendocino County coastal area, the site could be subject to large storm waves or tsunami waves. In February 1960, the Point Cabrillo Light House was damaged by an approximately 65 feet high storm wave (meteorological tsunami, or "meteotsunami"). No such waves are recorded at the light house from 1909, the year it was built, to 1960. Nor have such large waves occurred since 1960. Since the property bluffs are approximately 140 feet in vertical height, impact or inundation from a severe storm surge or tsunami event is considered a low risk for the site.

5.7 Seismicity and Faulting

As is typical of the Mendocino County coastal area, the site will be subject to strong ground shaking during future, nearby, large magnitude earthquakes originating on the active San Andreas Fault, Maacama fault, or possibly other, more distant fault systems. The intensity of ground shaking at the site will depend on the distance to the causative earthquake epicenter, the magnitude of the shock, and the response characteristics of the underlying earth materials. Generally, structures founded in supporting materials and designed in accordance with current building codes are well suited to resist the effects of ground shaking.

No evidence of recent faulting was observed by BAI or shown in the site vicinity on the published geologic maps that we reviewed for this investigation. The presence of ancient faults within the coastal bluffs is common and should not impact the proposed residence due to their inactivity. Therefore, the potential for fault rupture at the site is considered low.

5.8 Slope Stability Analysis

Our bluff stability analyses were performed to correspond, as a minimum, to the guidelines by California Coastal Commission, "Establishing Development Setbacks from Coastal Bluffs", Proceedings, California and the World Ocean '02. The document recommends a factor of safety greater than or equal to 1.5 for static conditions and 1.1 for seismic conditions and a horizontal seismic coefficient of 0.15.

We also followed the guidelines prepared by (1) American Society of Civil Engineers (ASCE) and Southern California Earthquake Center (SC/EC) "Recommended Procedures for Implementation of Division of Mines and Geology Special Publication 117, Guidelines for Analyzing and Mitigating Landslide Hazards in California", dated June 2002 and (2) California Geological Survey (CGS) "Guidelines for Evaluating and Mitigating Seismic Hazards in California" dated 2008.

Cross Section A-A', shown in Appendix B, was created from topographic map shown on Plate 2, our reconnaissance, and data from our subsurface exploration as well as subsurface exploration on neighboring properties. The location of the cross section used for our stability analyses is shown on Plate 2.

From our subsurface exploration, six soil and bedrock units, with different density and strength parameters, were identified within the bluff for our stability analyses. Unit "1" silty sand topsoil, Unit "2" is the clayey sand (terrace deposits), Unit "3" is the sand with few fines, Unit "4" is the deeply to moderately weathered sandstone, Unit "5" is the moderately to little weathered sandstone that was observed in the bluff face and Unit "6" is the old landslide soils. Table 3 summarizes soil and bedrock parameters used.

Table 3: Soil and Bedrock Parameters

Unit	Wet Density (pcf)	Cohesion (psf)	Friction Angle (ϕ)
1	127	120	28
2	123	300	25
3	130	0	36
4	130	1,000	0
4	135	6,400	0
6	110	50	17

The above assigned strengths were determined from strength test results obtained from this site and adjacent sites in the area, as well as from back-analysis of the slope stability calculations. The stability of the bluff slope was analyzed using the computer program SLIDE 5.0 by RocScience, Inc. The results of our stability analyses are presented in Appendix B.

The results of our stability analyses indicate that cross section location A-A' has a factor of safety less than 1.5 within 16 feet of the bluff edge for static conditions and a factor of safety less than 1.1 within 16 feet of the bluff edge for pseudo-static conditions.

5.9 Liquefaction

Liquefaction results in a loss of shear strength and potential soil volume reduction in saturated sandy, silty, silty/clayey, and also coarse gravelly soils below the groundwater table from earthquake shaking. The occurrence of this phenomenon is dependent on many factors, including the intensity and duration of ground shaking, the soil age, density, particle size distribution, and position of the groundwater table.

We have evaluated the liquefaction potential for the site using site modified peak ground acceleration. The results of our analysis indicate the site has a potential for liquefaction during a design earthquake.

Where the probability of liquefaction, factor of safety, was 1.3 or less, we performed an analysis to estimate induced vertical settlement due to liquefaction. This analysis was based on procedures by Idriss and Boulanger, 2008, with 2014 update. The results of our analysis are shown in Table 4 below. Liquefaction analysis results are presented in Appendix C.

Lateral spreading is generally caused by liquefaction of marginally stable soils underlying gently to steeply-inclined slopes. In these cases, the saturated soils move toward an unsupported face, such as an incised river channel or body of water. Based on review of our borings and nearby unsupported slope faces, we conclude that there is a minor potential for lateral spreading in the area and shown in Table 4.

BAI has performed an evaluation of earthquake induced settlement in dry sand. The analysis was based on procedures by Pradel, D.J., 1998, "Procedure to Evaluate Earthquake-Induced Settlements in Dry Sandy Soils" and are shown in Table 4.

To mitigate the concern of vertical settlement due to liquefaction, the planned building should be supported on spread footings underlain by compacted fill or the building can be supported on drilled piers penetrating the underlying bedrock. Recommendations for the foundations are presented in Section 6.0 of this report.

Table 4: Liquefaction Settlement, Densification and Lateral Displacement

Boring	Settlement (inches)	Lateral Displacement (inches)	Settlement in Dry Sand (inches)
B-1	0.2	1.0	0.4
B-2	0	0	0.4
B-3	0.6	3.2	0.4

6.0 RECOMMENDATIONS

6.1 Bluff Edge Setbacks

Based on our aerial photograph analysis and the future effects of sea level rise, we have determined a projected retreat of approximately 20 feet over the next 75 years. Based on our slope stability analysis, 16 feet of additional instability could occur on the ocean bluffs.

Combining the project bluff retreat and potential instability together and assuming a factory of safety of 1.25, we recommend a total bluff setback of 45 feet for improvements.

6.2 Site Grading

6.2.1 Clearing and Stripping

Areas to be graded should be cleared of existing vegetation, rubbish, existing structures, and debris. After clearing, surface soils that contain organic matter should be stripped. In general, the depth of required stripping will be about 2 to 4 inches; deeper stripping and grubbing may be required to remove isolated concentrations of organic matter or roots. The cleared materials should be removed from the site or stockpiled for later use in landscape areas, as appropriate.

6.2.2 Structural Area Preparation

As used in this report, "Structural Areas" refers to the foundation envelopes and the areas extending five feet beyond the foundations, and to pavement area and exterior concrete slabs areas and the areas extending three feet beyond their edges.

Within building areas, existing weak soils should be removed to a depth of at least two feet below existing grades and at least two feet below bottom of planned foundations. Deeper excavating may be necessary to remove isolated very weak soils. Prior to fill placement, a geotextile stabilization fabric, such as Mirafi HP Series, or equal, should be placed over the excavation bottom in accordance with the manufacturer's specifications.

Within pavement areas and exterior concrete, existing weak soils, the upper 18 inches of soil from existing grade, should be removed. Deeper excavations may be necessary to remove isolated, very weak soils, if encountered.

After the recommended excavations are complete, BAI should observe the soils exposed to confirm suitable materials are present. The exposed soils should then be scarified to about six inches deep, moisture conditioned to at least optimum moisture content and compacted to at least 90 percent relative compaction as determined by the ASTM D 1557 test procedure, latest edition. These moisture conditioning and compaction procedures should be observed by BAI to check that the soil is properly moisture conditioned and the recommended compaction is achieved.

The site soils encountered in the test borings are suitable for re-use as compacted fill. Fill material, on-site or imported, should be free of perishable matter and rocks greater than three inches in largest dimension, have an expansion index less than 30 and be approved by BAI before fill placement. Fill should be placed in thin lifts (six to eight inches depending on compaction equipment), moisture conditioned to near optimum moisture content, and compacted to at least 90 percent relative compaction, to achieve planned grades.

6.2.3 Finish Grading

Finished surfaces should be graded to drain away from structures and foundations. A minimum surface drainage gradient of five percent is recommended.

Subgrade soil should be finished true to line and grade to present a smooth, firm, and unyielding surface. Finished surfaces should be maintained moist and free of shrinkage cracks until covered by permanent construction. Fill surfaces allowed to dry out and crack should be re-moisture conditioned to at least optimum moisture content and re-compacted prior to pavement installation.

6.3 Foundation Support

6.3.1 Spread Footings

The proposed structure can be supported on reinforced concrete footings founded in compacted fill. Footings can be designed using an allowable soil bearing pressure of 2,500 pounds per square foot (psf) for dead plus live loads. A 33 percent increase in bearing pressure is allowable for total loads, including wind or seismic loads. Footing elements within compacted fill pad should be founded at least 18 inches below lowest adjacent finish grade with at least 24-inches of compacted fill below the footing. Wall footings should be no less than 12 and 15 inches wide for one and two-story construction, respectively.

No subsurface structures (such as subsurface walls, tanks, other foundations, or utility lines) should extend below the footings, or within a zone defined by a 45-degree angle projected downward from the outside, bottom edges of the footings. Completed foundation excavations should be observed by a representative from BAI prior to the placement of reinforcing steel.

Resistance to lateral loads can be obtained using passive earth pressure against the face of the foundations. An allowable passive pressure of 200 psf per foot of depth below subgrade and frictional resistance of 0.30 times net vertical dead load, are appropriate for footing elements poured neat against supporting natural and approved engineered fill soils, if required. Passive pressure should be neglected within the upper 18 inches where porous and weak soils are not removed.

6.3.2 Drilled Piers

Support for the structure can be supported on a system of drilled cast in place concrete piers interconnected with grade beams. Drilled piers should be at least 12 inches in diameter and should be embedded a minimum of five feet into supporting bedrock, as determined by BAI. The supporting bedrock was encountered at approximately 15 to 16 feet below ground surface. The drilled piers should be at least 21 feet in length. Pier length and diameter should be determined by a structural engineer based on our recommendations.

Pier spacing should be no closer than 3 pier diameters, center to center. The drilled piers should be designed to gain support from skin friction. A skin friction value of 600 pounds per square

foot (psf) of shaft area may be used in the supporting bedrock, for dead loads plus live loads. A skin friction value of 250 pounds per square foot (psf) of shaft area may be used in the supporting soil, below the liquefaction zone, for dead loads plus live loads. For total downward loads due to wind or seismic forces, the pier capacity can be increased by one third. Uplift frictional capacity for piers should be limited to 2/3 of the allowable downward capacity. When final pier depths have been achieved, as determined by BAI, the bottoms of the pier holes should be cleaned of loose materials. BAI should observe the drilling and final clean out of the pier holes, prior to the placement of reinforcing steel and/or concrete.

Resistance to lateral loads can be obtained using passive earth pressure against the face of the foundations. An allowable passive pressure of 400 psf (rectangular distribution) can be used within the bedrock. Passive pressure should be neglected within the liquefaction zone. Passive pressure can be projected over two pier diameters.

If groundwater is encountered during construction, the pier holes should be dewatered prior to placement of reinforcing steel and concrete. Alternatively, if more than six inches of groundwater has entered the pier hole, concrete can be tremied into place with an adequate head to displace water or slurry. Concrete should not be placed by freefall in such a manner as to hit the sidewalls of the excavation.

Caving was encountered in our test borings B-2 at 10.5 feet and B-3 at 1.5 feet. The driller should be prepared to case pier holes where caving occurs. If used, the casing would need to be withdrawn from the pier holes as the pier concrete is placed. Difficult drilling conditions were encountered with the light drilling equipment used for this investigation within hard bedrock. The drilling contractor should be prepared to use rock-coring equipment.

6.4 Seismic Design Criteria

The structure should be designed and/or constructed to resist the effects of strong ground shaking (on the order of Modified Mercalli Intensity IX) in accordance with current building codes. The California Building Code (CBC) 2019 edition indicates that the site classification for the property is Site Class F, due to the potential of liquefaction. BAI is anticipating that the fundamental period of vibration will be equal to or less than 0.5 seconds, for which a site-response analysis is not required in accordance with ASCE 7-16. However, if the structural engineer determines that the fundamental period of vibration is greater than 0.5 seconds, BAI will need to re-evaluate the site and may need to perform a site response analysis. Based on a site response analysis not being required, BAI is using Site Class C for design. Accordingly, CBC indicates that the following seismic design parameters are appropriate for the site:

Table 5: Seismic Design Parameters		
Site Class	=	C
Mapped Spectral Response Acceleration at 0.2 sec	S_S =	2.016g
Mapped Spectral Response Acceleration at 1.0 sec	S_1 =	0.833g
Modified Spectral Response Acceleration at 0.2 sec	S_{MS} =	2.419g
Modified Spectral Response Acceleration at 1.0 sec	S_{M1} =	1.166g
Design Spectral Response Acceleration at 0.2 sec	S_{DS} =	1.613g
Design Spectral Response Acceleration at 1.0 sec	S_{D1} =	0.777g
Site Coefficient	F_a =	1.2
Site Coefficient	F_v =	1.4
Long-period transition period	T_L =	12
Seismic Design Category	=	E

6.5 Concrete Slab Support

If a structural-supported concrete slab is used (i.e., the slab is supported by and able to span between, interconnecting foundation elements without gaining support from underlying soil), then over-excavation of the near-surface weak and porous soil zone is not required. However, topsoil's containing organics should be removed beneath the planned slab (as much as four inches to 12 inches in depth below existing ground surface).

Concrete slabs on grade not supported by foundation elements should be supported on properly compacted fill placed in accordance with our recommendations previously presented in 6.1 Site Grading. The compacted fill can be crushed drain rock or native soils placed in thin lifts and in a manner to prevent segregation; moisture conditioned to near optimum moisture content and compacted to 90 percent relative compaction to provide a firm unyielding surface. The drain rock should not be loose but vibrated in place to ensure a tight inter-locking of the rocks.

Regardless of means of support, interior concrete slab floors should be underlain by at least four inches of clean, free draining ¾ inch crushed rock, to act as a capillary moisture break. An underslab drain should be constructed, as shown on the attached Plate 12. If a soil-supported slab is used, shrinkage cracks within the subgrade soils should be closed by wetting before crushed rock placement.

Where migration of moisture through the floor slab would be detrimental to its intended use, the installation of a vapor retarder membrane should be considered. The moisture/vapor retarder geomembrane, placed upon the gravel layer, should be at least 15 mils thick (i.e., Stego ® Wrap 15-mil Class A, Carlisle RMB 400 15-mil Class A, or equivalent), installed in accordance with the manufacturer's specifications to prevent moisture migration through the seams. With a 15-mil minimum thickness membrane, the 2 inches of wetted sand typically placed upon the membrane may be omitted. Construction of moisture/vapor retarders does not guarantee the prevention of moisture moving through the floor slab. However, this provision should substantially reduce the potential for moisture-vapor problems on the floors and/or future mold and mildew problems.

6.6 Retaining Walls

If retaining walls are utilized, they should be provided with permanent back drainage to prevent buildup of hydrostatic pressure or designed to resist hydrostatic pressures. Drainage and backfill details are presented on Plate 13. In areas where movement of moisture vapor through the wall would be detrimental to its intended use, installation of a vapor retarder membrane should be considered. Construction of vapor retarders does not guarantee the prevention of moisture moving through concrete walls. Quality, placement, and compaction requirements for backfill behind subsurface walls are the same as previously presented for fill. Light compaction equipment should be used near the wall to avoid overstressing the walls. Retaining walls should be designed to resist the lateral earth pressures presented on Plate 14.

In addition to static loads, the retaining walls should also be designed to resist potential seismic loads, in accordance with CBC requirements. For seismic loads, a pressure increment equivalent to an inverted triangular distribution is recommended, varying from 0 (zero) pounds per square foot (psf) at the top of the wall to 30H psf at the bottom of the retaining portion, where "H" is the height of the retaining portion (resultant dynamic thrust acting at 1/3H above the base of the wall).

6.7 Site Drainage

Because surface and/or subsurface water is often the cause of foundation or slope stability problems, care should be taken to intercept and divert concentrated surface flows and subsurface seepage away from the building foundations. Drainage across the lot should be by sheet-flow. Surface grades should maintain a recommended five percent gradient away from building foundations.

A perimeter drain should be constructed as shown on Plate 12. Concrete interior slabs should be provided with underslab drainage as shown on Plate 12.

If a raised wood floor is used, the area under the floor should be graded to drain towards an under house drain with a conduit outlet(s) through the footings/stem walls. Two-inch or four-inch PVC sleeves, or equivalent should be placed within the forms, at the lowest grade within the crawl space and outlet to an approved area, prior to concrete placement.

7.0 ADDITIONAL SERVICES

BAI should review and provide consultation during preparation of final development plans. Prior to construction, BAI should review the final grading plans, and soil related specifications for conformance with our recommendations. During construction, BAI should be retained to stake the bluff edge and observe leach field locations ensure the proper setback. During construction, BAI should be retained to provide periodic observations, together with field and laboratory testing, during site preparation, placement and compaction of fills, if required. Our reviews and tests would allow us to verify conformance of the work to project guidelines, determine that soil conditions are as anticipated, and to modify our recommendations, if necessary.

8.0 LIMITATIONS

This geotechnical investigation was performed in accordance with the usual and current standards of the profession, as they relate to this and similar localities. No other warranty, expressed or implied, is provided as to the conclusions and professional advice presented in this report. Our conclusions are based upon reasonable geological and engineering interpretation of available data.

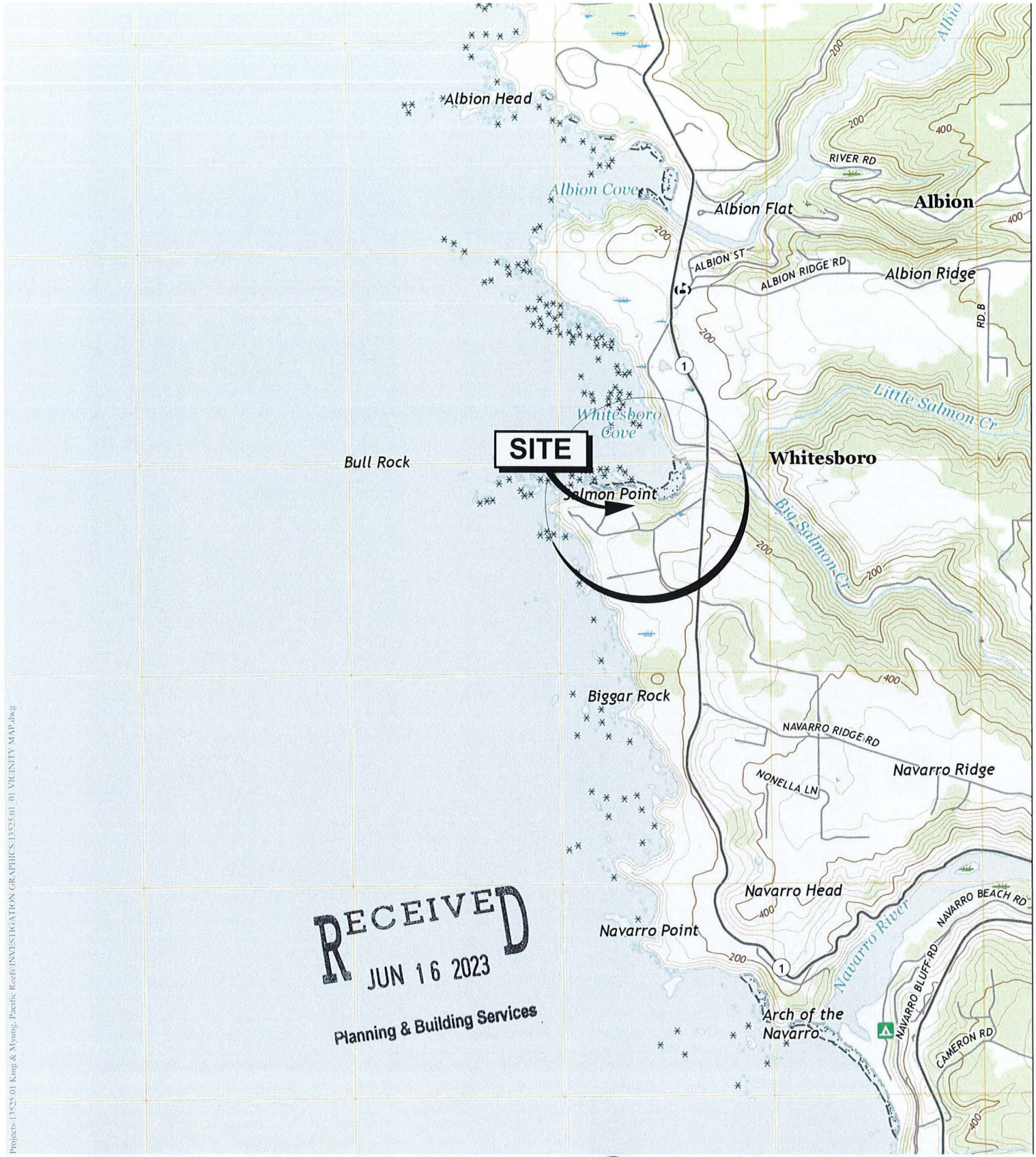
The samples taken and tested, and the observations made, are considered to be representative of the site; however, soil and geologic conditions may vary significantly between test borings and across the site. As in most projects, conditions revealed during construction excavation may be at variance with preliminary findings. If this occurs, the changed conditions must be evaluated by BAI, and revised recommendations be provided as required.

This report is issued with the understanding that it is the responsibility of the Owner, or his/her representative, to ensure that the information and recommendations contained herein are brought to the attention of all other design professionals for the project, and incorporated into the plans, and that the Contractor and Subcontractors implement such recommendations in the field. The safety of others is the responsibility of the Contractor. The Contractor should notify the owner and BAI if he/she considers any of the recommended actions presented herein to be unsafe or otherwise impractical.

Changes in the condition of a site can occur with the passage of time, whether they are due to natural events or to human activities on this, or adjacent sites. In addition, changes in applicable or appropriate codes and standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, this report may become invalidated wholly or partially by changes outside of our control. Therefore, this report is subject to review and revision as changed conditions are identified.

The recommendations contained in this report are based on certain specific project information regarding type of construction and current improvement locations, which have been made available to us. If conceptual changes are undertaken during final project design, we should be allowed to review them in light of this report to determine if our recommendations are still applicable.

PLATES



REFERENCE:
Albion Quadrangle
7.5-Minute Series, USGS, 2018

Latitude: 39.213647
Longitude: -123.771667

NORTH

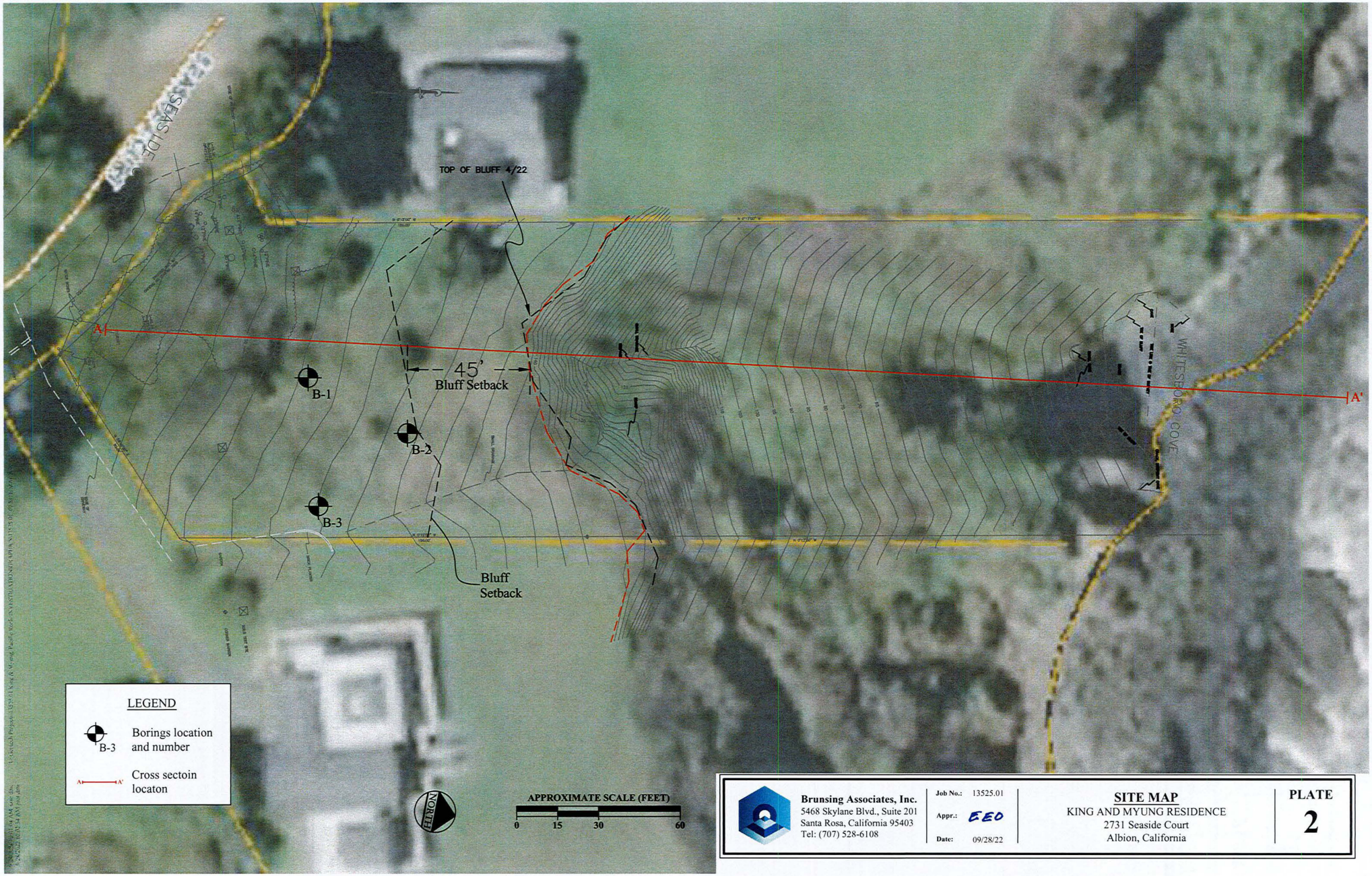
APPROXIMATE SCALE (FEET)
0 1000 2000 4000

Brunsing Associates, Inc.
5468 Skylane Blvd., Suite 201
Santa Rosa, California 95403
Tel: (707) 528-6108

Job No.: 13525.01
Appr.: EEO
Date: 09/28/22

VICINITY MAP
KING AND MYUNG RESIDENCE
2731 Seaside Court
Albion, California

PLATE 1



Brunsing Associates, Inc.
5468 Skylane Blvd., Suite 201
Santa Rosa, California 95403
Tel: (707) 528-6108

Job No.: 13525.01
Appr.: EEO
Date: 09/28/22

SITE MAP
KING AND MYUNG RESIDENCE
2731 Seaside Court
Albion, California

PLATE
2

Log of Boring B-1

Equipment: McMillen X1950H2; 6-inch solid-stem flight auger

Date: 4/22/22 **Logged By:** BNS

Elevation: Not Surveyed **Latitude:** 39.213605 **Longitude:** -123.771736

Sampler Type*	Moisture Content (%)	Dry Density (pcf)	Blows/foot	Depth (ft.)	Sample
				1	DARK BROWN SILTY SAND (SM) with silt very loose to medium dense, damp porous with fine roots
CA	19.4	107	11 **	2	
				3	ORANGE-GRAY-BROWN CLAYEY SAND (SC) with silt medium dense to dense, moist
CM			30/10" **	4	
	23.0	100		5	DARK ORANGE-BROWN CLAYEY SAND (SC) dense, moist to wet with rock fragments
CM			23 **	6	
				7	
CM			37/9" **	8	
				9	ORANGE TO LIGHT TAN CLAYEY SAND (SC) medium dense, wet to saturated
CM	20.3	105	26 **	10	▽
				11	GRAYISH-BLUE SILTY SAND (SM) medium dense, saturated
				12	
				13	
				14	
				15	
CM			28/4" **		GRAYISH-BLUE SANDSTONE crushed to intense fracturing, friable, deeply weathered

Notes:
1. Free water encountered at 10.5 feet
2. No caving

Latitude/Longitude estimated from Google Earth.
* See Soil Classification Chart & Key to Test Data
** Equivalent "Standard Penetration" Blow Counts.
*** Elevations interpolated from Plate 2.

Scale: 1" = 3'

Brunsing Associates, Inc.
5468 Skylane Blvd., Suite 201
Santa Rosa, California 95403
Tel: (707) 528-6108

Job No.: 13525.01
Appr.: EEO
Date: 09/28/22

LOG OF BORING B-1
KING AND MYUNG RESIDENCE
2731 Seaside Court
Albion, California

PLATE 3
SHEET 1 of 1

Log of Boring B-2

Equipment: McMillen X1950H2; 6-inch solid-stem flight auger

Date: 4/22/22 **Logged By:** BNS

Elevation: Not Surveyed **Latitude:** 39.213696 **Longitude:** -123.771689

Sampler Type*	Moisture Content (%)	Dry Density (pcf)	Blows/foot	Depth (ft.)	Sample
				0	DARK BROWN SILTY SAND (SM) very loose, damp
				1	
				2	
CA	25.8	96	27 **	3	ORANGE-BROWN CLAYEY SILTY SAND (SC) with silt medium dense to dense, moist
				4	
CM	20.0	104	28/10" **	5	
				6	
CM			26 **	7	
				8	BLACK TO ORANGE-BROWN SILTY SAND (SM) medium dense, moist with rock fragments TAN TO GRAYISH-BLUE SAND (SP) dense, moist to saturated
CM			36 **	9	
				10	▽
				11	
				12	
CM			40/9' **	13	TAN TO ORANGE SAND (SP) very dense, saturated
				14	
				15	

Notes:
1. Free water encountered at 10.5 feet
2. Caving at 10.5 feet
3. Drilling refusal at 15.5 feet

Latitude/Longitude estimated from Google Earth.
* See Soil Classification Chart & Key to Test Data
** Equivalent "Standard Penetration" Blow Counts.
*** Elevations interpolated from Plate 2.

Scale: 1" = 3'

Brunsing Associates, Inc.
5468 Skylane Blvd., Suite 201
Santa Rosa, California 95403
Tel: (707) 528-6108

Job No.: 13525.01
Appr.: EEO
Date: 09/28/22

LOG OF BORING B-2
KING AND MYUNG RESIDENCE
2731 Seaside Court
Albion, California

PLATE 4
SHEET 1 of 1

Log of Boring B-3

Equipment: McMillen X1950H2; 6-inch solid-stem flight auger

Date: 4/22/22 **Logged By:** BNS

Elevation: Not Surveyed **Latitude:** 39.213613 **Longitude:** -123.771587

Sampler Type*	Moisture Content (%)	Dry Density (pcf)	Blows/foot	Depth (ft.) Sample	
				1	DARK BROWN CLAYEY SILTY SAND (SM) very loose, moist to wet
				2	
CA			13 **	3	ORANGE-BROWN CLAYEY SAND (SC) with silt medium dense, moist
	24.1	100		4	
CA			12 **	5	with rock fragments
				6	
CM	29.9	102	13 **	7	ORANGE TO GRAY CLAYEY SAND (SC) with silt medium dense, saturated
				8	
				9	
				10	
				11	GRAY SAND (SP) medium dense, saturated
				12	
CM			28 **	13	

Notes:
1. Free water encountered at 1.5 feet
2. Caving at 1.5 feet

Latitude/Longitude estimated from Google Earth.
* See Soil Classification Chart & Key to Test Data
** Equivalent "Standard Penetration" Blow Counts.
*** Elevations interpolated from Plate 2.

Scale: 1" = 3'

Brunsing Associates, Inc.
5468 Skylane Blvd., Suite 201
Santa Rosa, California 95403
Tel: (707) 528-6108

Job No.: 13525.01
Appr.: EEO
Date: 09/28/22

LOG OF BORING B-3
KING AND MYUNG RESIDENCE
2731 Seaside Court
Albion, California

PLATE 5
SHEET 1 of 1

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

MAJOR DIVISIONS			SYMBOLS GRAPHIC	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE-GRAINED SOILS	GRAVELS AND GRAVELLY SOILS	CLEAN GRAVELS (Less than 5% fines)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE			GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (Greater than 12% fines)		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS (Less than 5% fines)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
	50% OR MORE OF COARSE FRACTION PASSING THROUGH NO. 4 SIEVE			SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (Greater than 12% fines)		SM	SILTY SANDS, SAND-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE-GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILT, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMOUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

KEY TO TEST DATA

LL - Liquid Limit
PI - Plasticity Index
Consol - Consolidation
EI - Expansion Index
■ Sample Retained
SA - Sieve Analysis
▨ Sample Recovered, Not Retained
☒ Bulk Sample
◯ Sample Not Recovered
CA - California Modified Split Barrel Sampler 3.0-inch O.D.
CM - California Modified Split Barrel Sampler 2.5-inch O.D.
SPT - California Split Barrel Sampler 2.0-inch O.D.
SH - Shelby Tube
RC - Rock Coring
Recovery - Percent Core Recovered
RQD - Rock Quality Designation (length of core pieces >= 4-inches / core length)

Shear Strength, psf ↓ ↓ Confining Pressure, psf

Tx	1564 (1440)	- Unconsolidated Undrained Triaxial
TxCU	1564 (1440)	- Consolidated Undrained Triaxial
DS	2020 (1440)	- Consolidated Drained Direct Shear
FVS	520	- Field Vane Shear
UC	1500	- Unconfined Compression
PP	1500	- Field Pocket Penetrometer
Sat		- Sample saturated prior to test

▽ Initial Groundwater Level Reading
▼ Second Groundwater Level Reading

Brunsing Associates, Inc.
5468 Skylane Blvd., Suite 201
Santa Rosa, California 95403
Tel: (707) 528-6108

Job No.: 13525.01
Appr.: EEO
Date: 09/28/22

SOIL CLASSIFICATION CHART & KEY TO TEST DATA
KING AND MYUNG RESIDENCE
2731 Seaside Court
Albion, California

PLATE 6

RELATIVE DENSITY OF COARSE-GRAINED SOILS

Relative Density	Standard Penetration Test Blow Count (blows per foot)
Very loose	4 or less
Loose	5 to 10
Medium dense	11 to 30
Dense	31 to 50
Very dense	More than 50

CONSISTENCY OF FINE-GRAINED SOILS

Consistency	Identification Procedure	Approximate Shear Strength (psf)
Very soft	Easily penetrated several inches with fist	Less than 250
Soft	Easily penetrated several inches with thumb	250 to 500
Medium stiff	Penetrated several inches by thumb with moderate effort	500 to 1000
Stiff	Readily indented by thumb, but penetrated only with great effort	1000 to 2000
Very stiff	Readily indented by thumb nail	2000 to 4000
Hard	indented with difficulty by thumb nail	More than 4000

NATURAL MOISTURE CONTENT

Dry	No noticeable moisture content. Requires considerable moisture to obtain optimum moisture content* for compaction.
Damp	Contains some moisture, but is on the dry side of optimum.
Moist	Near optimum moisture content for compaction.
Wet	Requires drying to obtain optimum moisture content for compaction.
Saturated	Near or below the water table, from capillarity, or from perched or ponded water. All void spaces filled with water.

* Optimum moisture content as determined in accordance with ASTM Test Method D1557, latest edition.

Where laboratory test data are not available, the above field classifications provide a general indication of material properties; the classifications may require modification based upon laboratory tests.

Brunsing Associates, Inc.
5468 Skylane Blvd., Suite 201
Santa Rosa, California 95403
Tel: (707) 528-6108

Job No.: 13525.01
Appr.: EEO
Date: 09/28/22

SOIL DESCRIPTIVE PROPERTIES
KING AND MYUNG RESIDENCE
2731 Seaside Court
Albion, California

PLATE
7

Generalized Graphic Bedrock Symbols


Claystone


Siltstone


Tuff (Volcanic Ash)

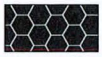

Shale


Chert


Andesite


Sandstone


Serpentine


Basalt


Conglomerate


Greenstone


Schist

Stratification

Bedding of Sedimentary Rocks	Thickness of Beds
Massive	No apparent bedding
Very thick bedded	Greater than 4 feet
Thick bedded	2 feet to 4 feet
Thin bedded	2 inches to 2 feet
Very thin bedded	0.5 inches to 2 inches
Laminated	0.125 inches to 0.5 inches
Thinly laminated	less than 0.125 inches

Fracturing

Fracturing Intensity	Fracture Spacing
Little	Greater than 4 feet
Occasional	1 foot to 4 feet
Moderate	6 inches to 1 foot
Close	1 inch to 6 inches
Intense	0.5 inches to 1 inch
Crushed	less than 0.5 inches

Strength

Soft	Plastic or very low strength.
Friable	Crumbles by hand.
Low hardness	Crumbles under light hammer blows.
Moderate hardness	Crumbles under a few heavy hammer blows.
Hard	Breaks into large pieces under heavy, ringing hammer blows.
Very hard	Resists heavy, ringing hammer blows and will yield with difficulty only dust and small flying fragments.

Weathering

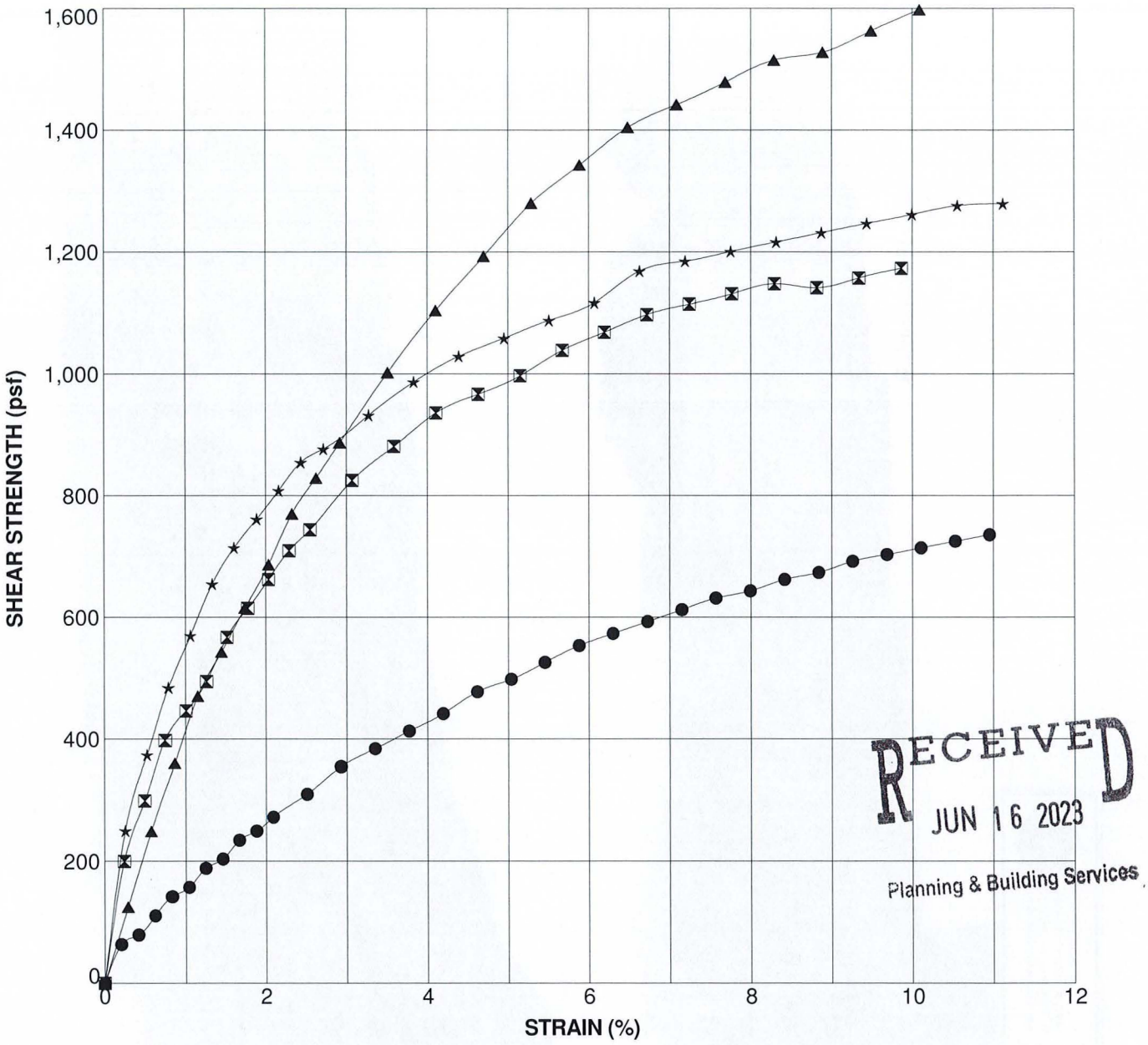
Deep	Moderate to complete mineral decomposition, extensive disintegration, deep and thorough discoloration, many extensively coated fractures.
Moderate	Slight decomposition of minerals, little disintegration, moderate discoloration, moderately coated fractures.
Little	No megascopic decomposition of minerals, slight to no effect on cementation, slight and intermittent, or localized discoloration, few stains on fracture surfaces.
Fresh	Unaffected by weathering agents, no disintegration or discoloration, fractures usually less numerous than joints.

Brunsing Associates, Inc.
5468 Skylane Blvd., Suite 201
Santa Rosa, California 95403
Tel: (707) 528-6108

Job No.: 13525.01
Appr.: EEO
Date: 09/28/22

BEDROCK DESCRIPTIVE PROPERTIES
KING AND MYUNG RESIDENCE
2731 Seaside Court
Albion, California

PLATE 8



Sample Source	Classification	Confining Pressure (psf)	Ultimate Strength (psf)	Strain (%)	Dry Density (pcf)	Moisture Content (%)
● B-1 at 2 ft	DARK BROWN SILTY SAND (SM) with silt	576	736	11.0	107	19.4
⊠ B-1 at 10 ft	ORANGE TO LIGHT TAN CLAYEY SAND (SC)	1728	1173	9.9	105	20.3
▲ B-2 at 5 ft	ORANGE-BROWN CLAYEY SILTY SAND (SC) with silt	864	1598	10.1	104	20.0
★ B-3 at 7 ft	ORANGE TO GRAY CLAYEY SAND (SC) with silt	1152	1279	11.1	102	29.9

Brunsing Associates, Inc.
5468 Skylane Blvd., Suite 201
Santa Rosa, California 95403
Tel: (707) 528-6108

Job No.: 13525.01
Appr.: EEO
Date: 09/28/22

UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST RESULTS

KING AND MYUNG RESIDENCE
2731 Seaside Court
Albion, California

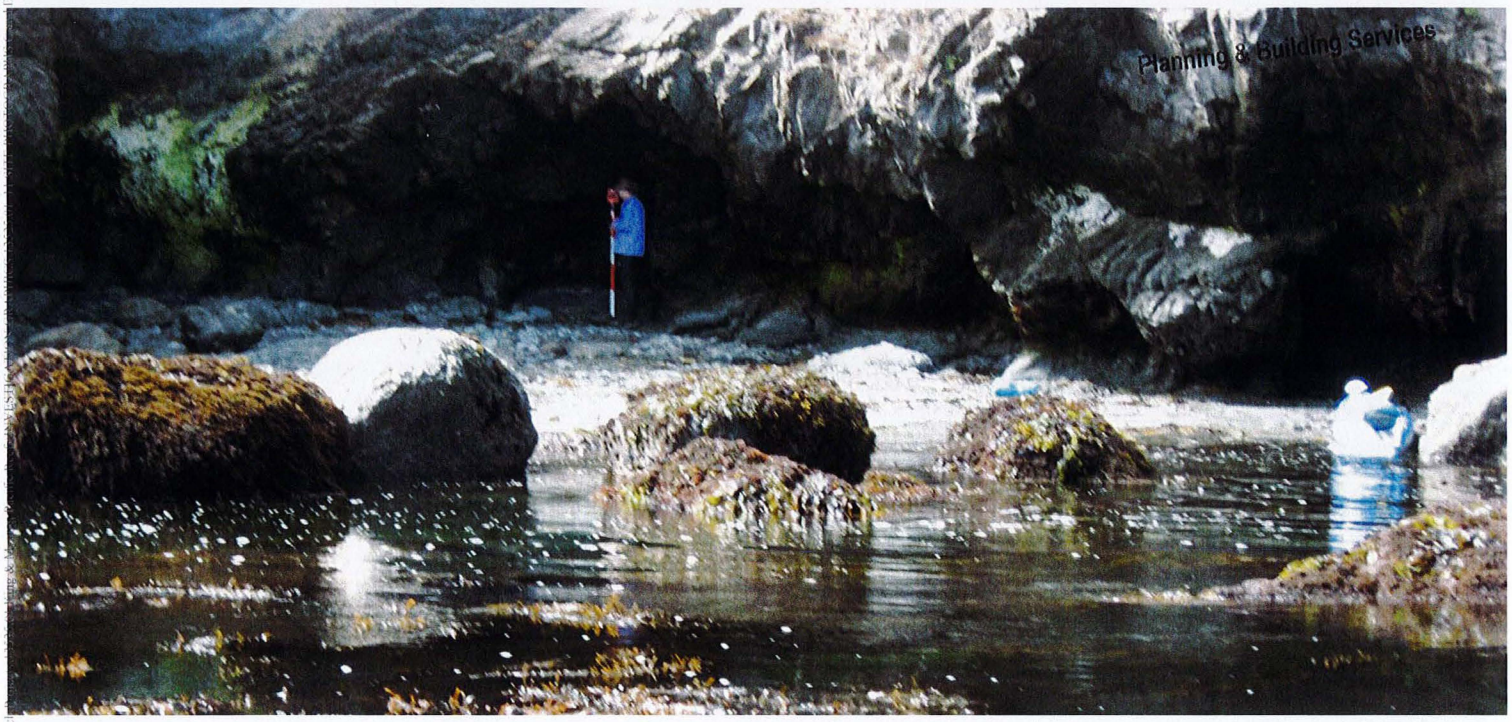
PLATE 9

Site Photograph A
2022

Site Photograph B
2007

Brunsing Associates, Inc. 5468 Skylane Blvd., Suite 201 Santa Rosa, California 95403 Tel: (707) 528-6108	Job No.: 13525.01 Appr.: EEO Date: 09/28/22	**SITE PHOTOGRAPHS A and B** KING AND MYUNG RESIDENCE 2731 Seaside Court Albion, California	**PLATE** **10**

Site Photograph C (2007)



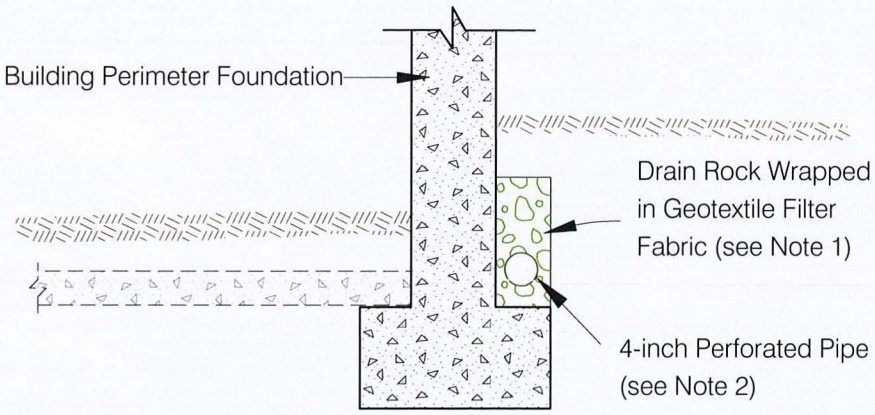
Site Photograph D (2007)

Brunsing Associates, Inc.
5468 Skylane Blvd., Suite 201
Santa Rosa, California 95403
Tel: (707) 528-6108

Job No.: 13525.01
Appr.: EEO
Date: 09/28/22

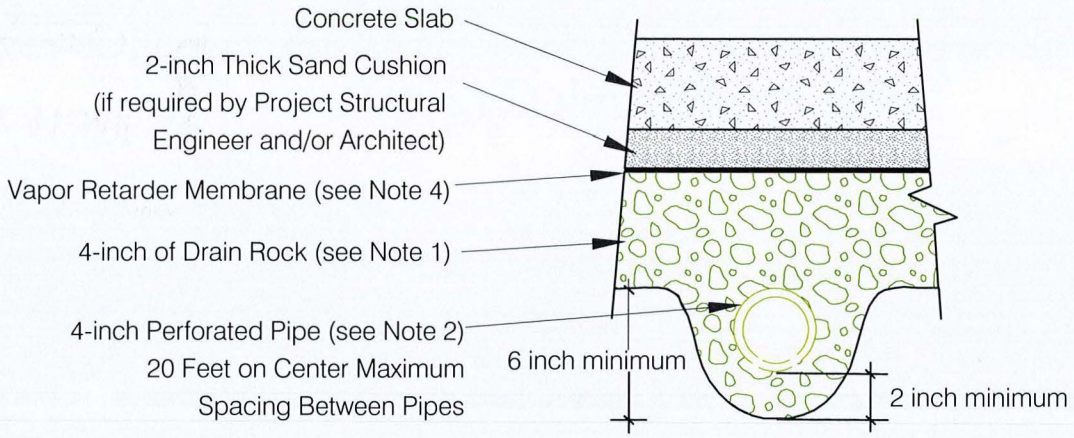
SITE PHOTOGRAPHS C and D
KING AND MYUNG RESIDENCE
2731 Seaside Court
Albion, California

PLATE 11



PERIMETER FOUNDATION DRAINAGE DETAIL

(Not to Scale)



UNDER SLAB DRAINAGE DETAIL

(Not to Scale)

NOTES:

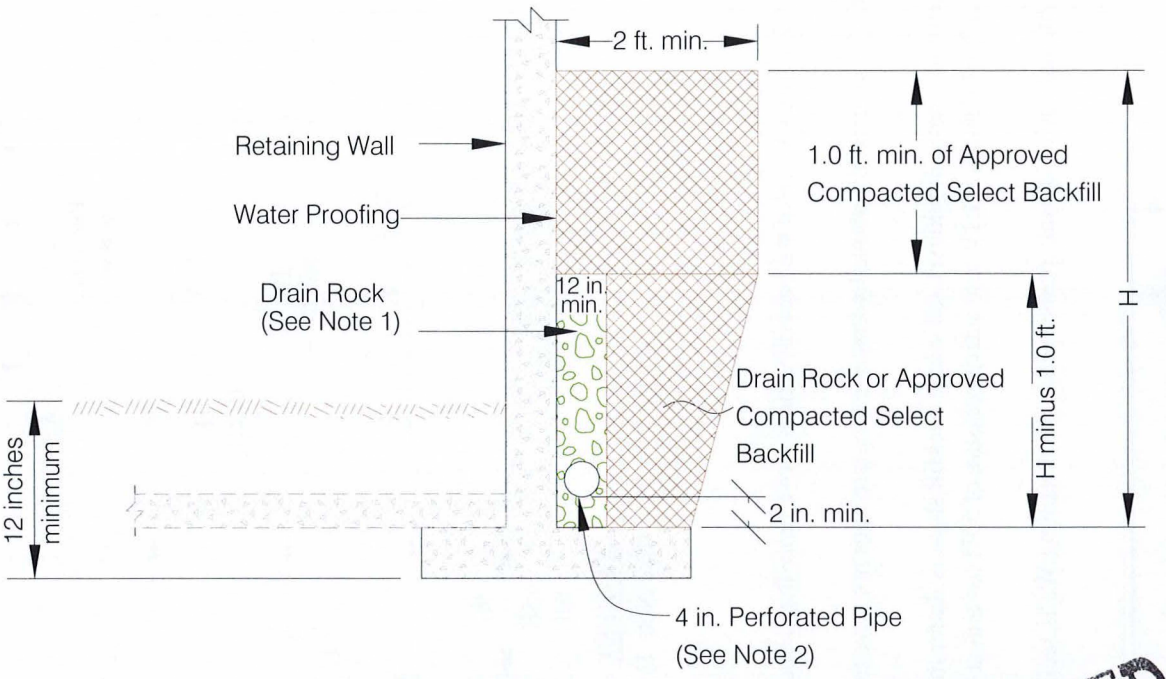
1. Drain rock should be clean, free-draining material graded in size between the No.4 and 3/4 inch sieves. Perimeter foundation drain rock should be wrapped in a non-woven geotextile filter fabric (Mirafi 140N or equivalent) or Class 2 permeable material, without filter fabric, per Caltrans standard specifications, latest edition.
2. Pipe should be SDR 35 or equivalent, perforations placed down, sloped at least 1 percent to gravity outlet, or sump with automatic pump.
3. A clean-out pipe with cap should be installed at the up-slope end of the pipe, pipe elbows should be 45 degrees or less (for "snake" access).
4. Vapor retarder should be at least 15-mils thick and installed in accordance with the manufacturer's specifications.

Brunsing Associates, Inc.
5468 Skylane Blvd., Suite 201
Santa Rosa, California 95403
Tel: (707) 528-6108

Job No.: 13525.01
Appr.: EEO
Date: 09/28/22

PERIMETER FOUNDATION AND UNDER SLAB DRAINAGE DETAILS
KING AND MYUNG RESIDENCE
2731 Seaside Court
Albion, California

PLATE 12



RETAINING WALL DRAINAGE DETAIL
(Not to Scale)

NOTES:

(1) Drain rock should be clean, free-draining material graded in size between the No. 4 and 3/4 inch sieves and should be wrapped in a non-woven geotextile filter fabric (Mirafi 140N or equivalent), or Class 2 permeable material, without filter fabric, per Caltrans standard specifications, latest edition.

(2) Pipe should be SDR 35 or equivalent, placed with perforations down, and sloped at 1 percent to drain to gravity outlet or sump with automatic pump.

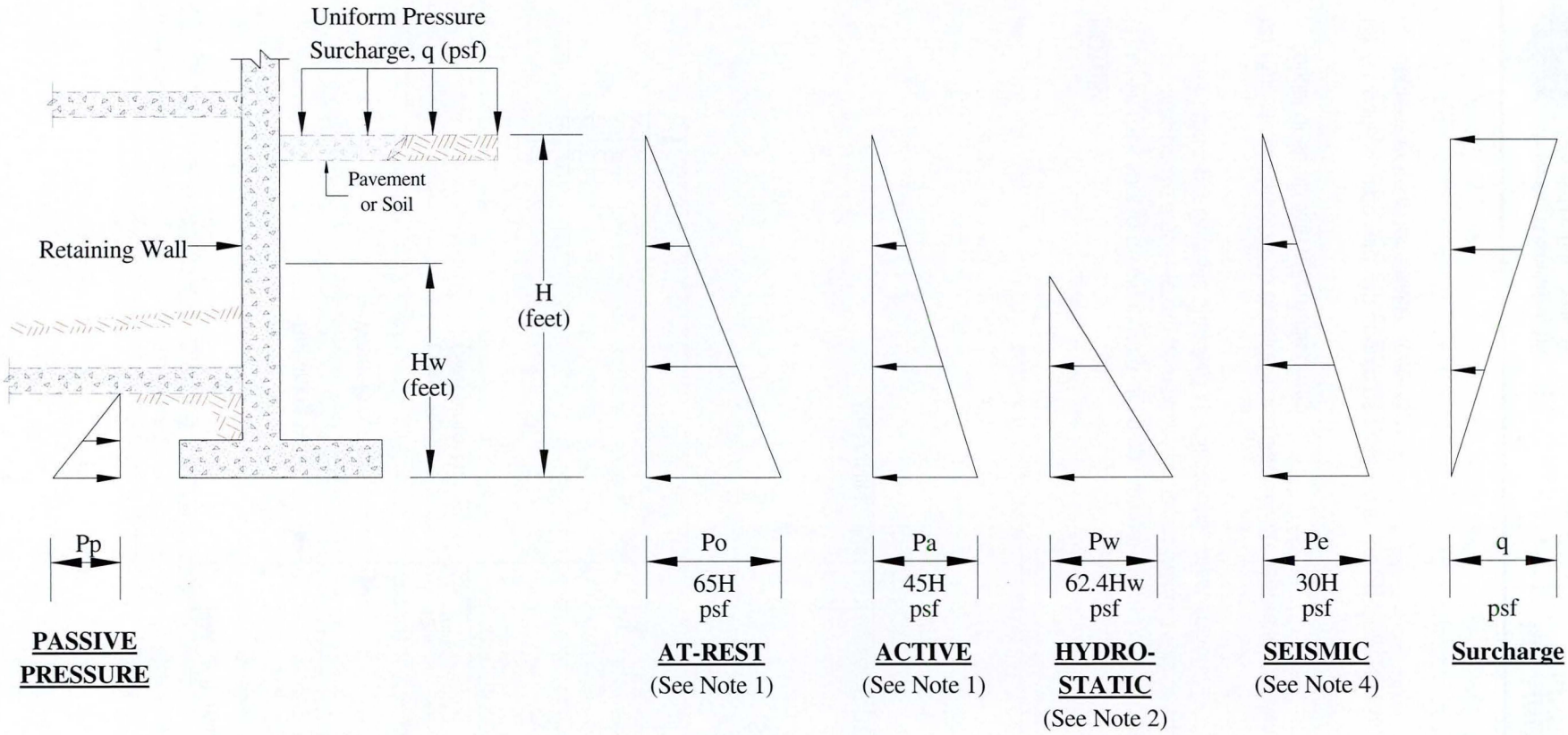
(3) A clean-out pipe with cap should be installed at the up-slope end of perforated pipe, and pipe elbows should be 45 degrees or less (for "snake" access).

Brunsing Associates, Inc.
5468 Skylane Blvd., Suite 201
Santa Rosa, California 95403
Tel: (707) 528-6108

Job No.: 13525.01
Appr.: EEO
Date: 09/28/22

RETAINING WALL DRAINAGE DETAIL
KING AND MYUNG RESIDENCE
2731 Seaside Court
Albion, California

PLATE 13



NOTES:

(1) If the wall at the surface of the backfill cannot move more than about 0.1 percent of its' height, at-rest soil pressures should be used.

(2) If the wall is drained the above hydrostatic pressure does not have to be used. See Plate 13 for drainage and backfill details.

(3) The above pressures should be used where backfill slope is flatter than 3 horizontal to 1 vertical (3H:1V). Where backfill slope is between 3H:1V and 1.5H:1V, use active pressure of 55H psf and at-rest pressure of 87H psf, respectively.

(4) For additional design seismic pressures see the Retaining Walls section of this report.

Brunsing Associates, Inc.
5468 Skylane Blvd., Suite 201
Santa Rosa, California 95403
Tel: (707) 528-6108

Job No.: 13525.01
Appr.: EEO
Date: 09/28/22

RETAINING WALL LATERAL EARTH PRESSURES

KING AND MYUNG RESIDENCE
2731 Seaside Court
Albion, California

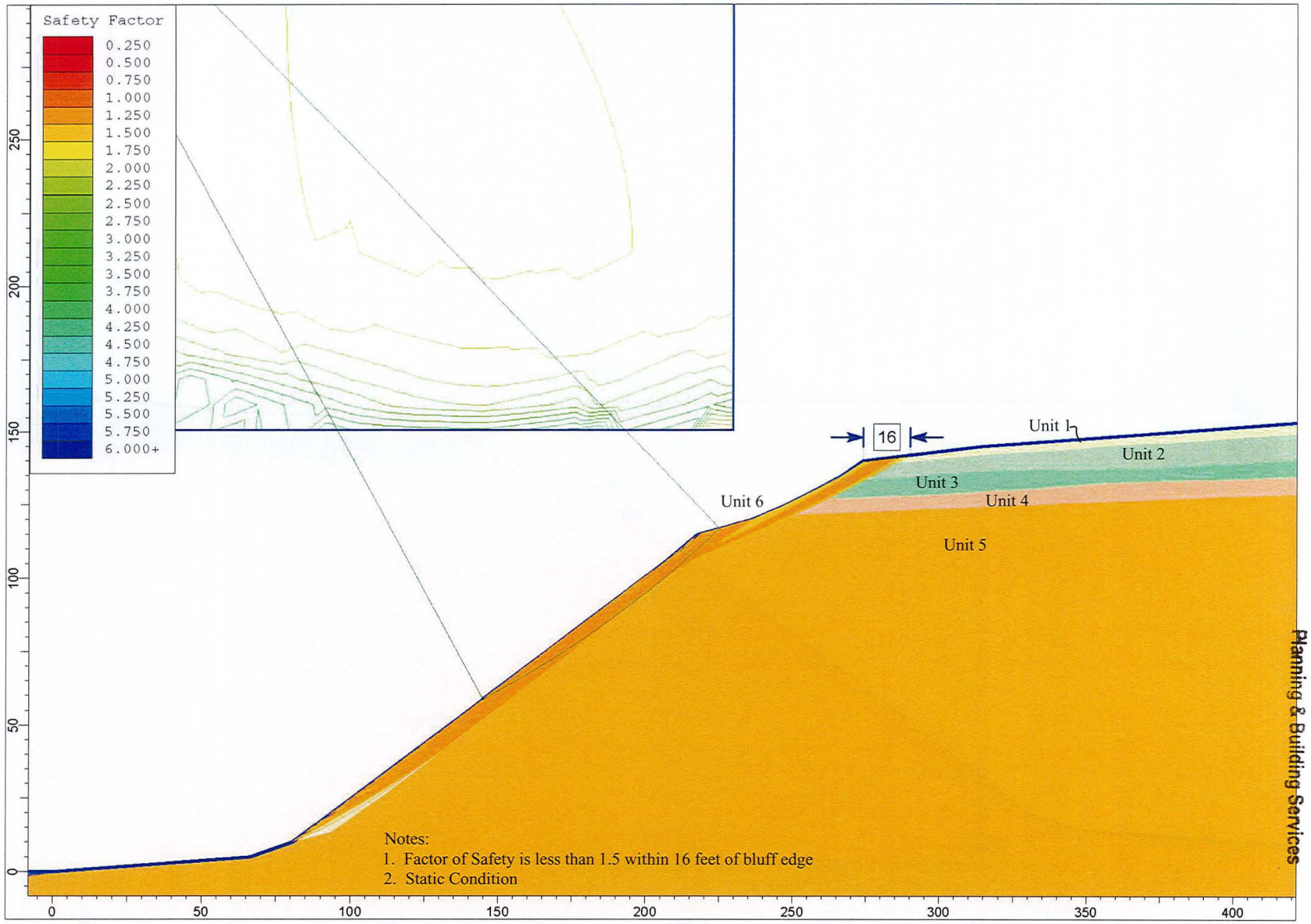
PLATE 14

APPENDIX A
References

- Brunsing Associates, Inc., 2007, Engineering Geologic Reconnaissance, Planned New Residence, Martino Property, 2731 Seaside Court, Pacific Reefs Subdivision, Mendocino County, California
- Hapke, C. J., and Reid, D., 2007, National Assessment of Shoreline Change, Part 4: Historical Coastal Cliff Retreat along the California Coast: United States Geological Survey (USGS) Open File Report (OFR) 2007-1133.
- Jennings, C.W., 1960, Geologic Map of California, Ukiah Sheet: California Division of Mines and Geology (CDMG).
- Jennings, C.W., and Bryant, W.A., 2010, Fault Activity Map: California Geologic Survey, California Geologic Data Map Series, Map No. 6, Scale 1:750,000.
- Johnsson, Mark J. Establishing Development Setbacks from Coastal Bluffs. Proceedings of California and the World Ocean '02. Santa Barbara, 2002.
- Kilbourne, R.T., 1983, Geology and Geomorphic Features Related to Landsliding, Mendocino 7.5 Minute Quadrangle, Mendocino County, California: California Division of Mines and Geology (CDMG), Open File Report 83-15.
- Update to the Sea-level Rise Guidance Document, 2013, Coastal and Ocean Working Group of the California Climate Action Team.
- California Division of Mines and Geology, 1983, Geology and Geomorphic Features Related to Landsliding, Fort Bragg 7.5 Minute Quadrangle, Mendocino County, California, Open File Report (OFR) 83-5 SF.
- California Division of Mines and Geology with the Structural Engineers Association of California Seismology Committee, 1998, Maps of Active Fault Near-Source Zones in California and Adjacent Parts of Nevada: International Conference of Building Officials.
- California Division of Mines and Geology, 1960, Ukiah Sheet: Geologic Map of California.
- Dickinson, W. R., et. al., 2005, Net Dextral Slip, Neogene San Gregorio – Hosgri Fault Zone, Coastal California: Geologic Evidence and Tectonic Implications" Geological Society of America (GSA), Special Paper 391.
- Ted W. Trinkwalder and Ward L. Stover, The March 2011 Tsunami and its Impact on Crescent City Harbor, November/December 2011, Geo Strata.

APPENDIX B

Slope Stability



Notes:
1. Factor of Safety is less than 1.5 within 16 feet of bluff edge
2. Static Condition

RECEIVED
JUN 16 2023
Planning & Building Services

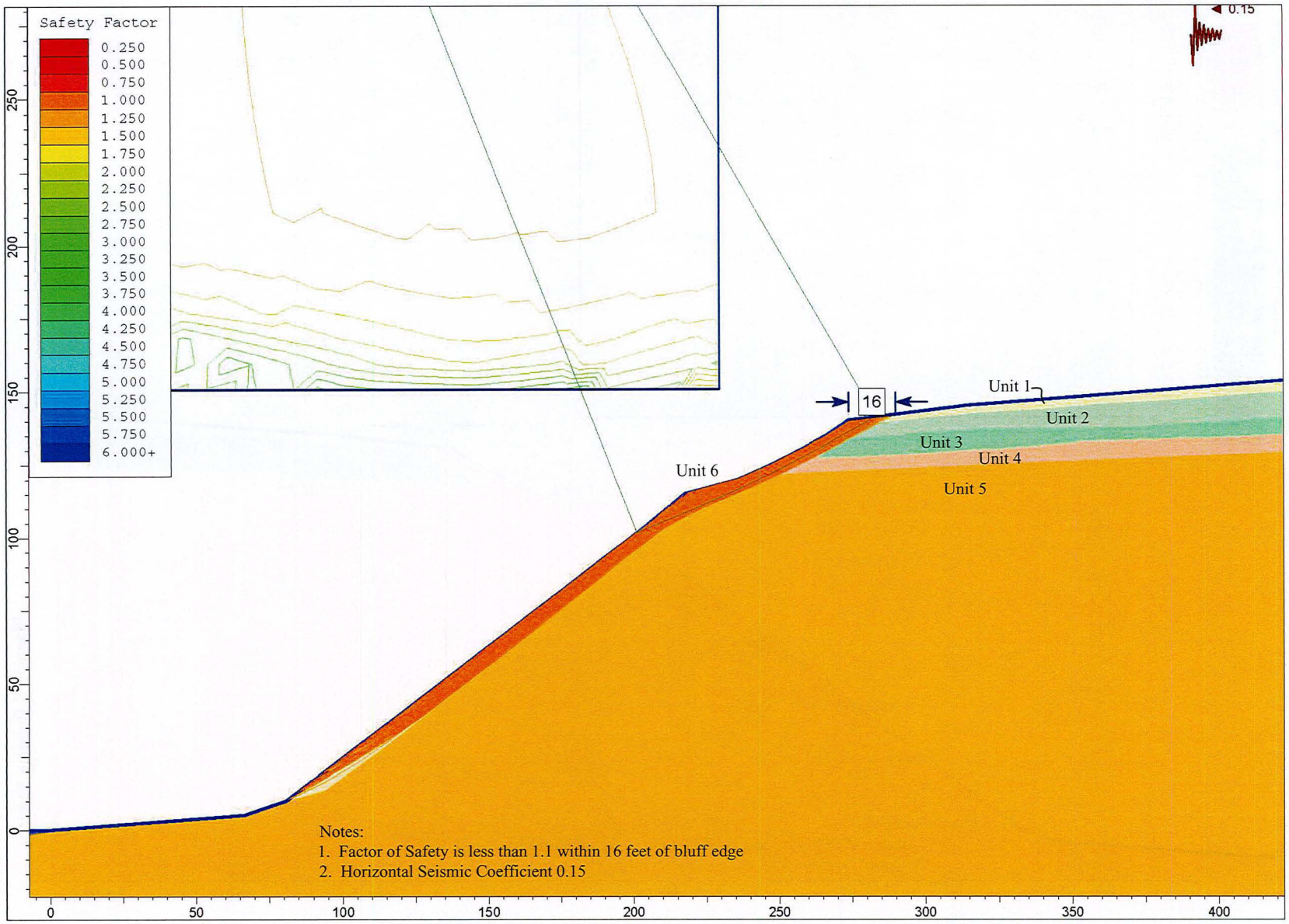
APPROXIMATE SCALE (FEET)
0 25 50 100

Brunsing Associates, Inc.
5468 Skylane Blvd., Suite 201
Santa Rosa, California 95403
Tel: (707) 528-6108

Job No.: 13525.01
Appr.: KAC
Date: 09/28/22

STATIC SLOPE STABILITY CROSS SECTION A-A'
KING AND MYUNG RESIDENCE
2731 Seaside Court
Albion, California

PLATE B1



APPROXIMATE SCALE (FEET)

0 25 50 100

Brunsing Associates, Inc.
5468 Skylane Blvd., Suite 201
Santa Rosa, California 95403
Tel: (707) 528-6108

Job No.: 13525.01
Appr.: KAC
Date: 09/28/22

SEISMIC SLOPE STABILITY CROSS SECTION A-A'
KING AND MYUNG RESIDENCE
2731 Seaside Court
Albion, California

PLATE
B2

APPENDIX C

Liquefaction Analysis

Project: King and Myung
Project #: 13525.01
Date: 9/27/2022
Boring: B-1

Input Parameters:

Peak Ground Accel (g) =	1.038				
Earthquake Magnitude, M =	7.9				
Water Table Depth (m) =	0.6		2.00	(ft)	
Average γ Above Water Table (kN/m^3) =	19.6		125.0	(lb/ft^3)	K_o = 0.5
Average γ Below Water Table (kN/m^3) =	20.4		130.0	(lb/ft^3)	N_c = 19.2
Borehole Diameter (mm) =	152.40		6	(in)	
Requires Correction for Sample Liners (YES/NO):		no			
Rod Lengths Assumed Equal to the Depth Plus	1.5	m (for the above ground extension)			
Gravity Acceleration (m/sec^2)	9.81				
Height of Exposed Face (m)	5		15	(ft)	
Boring Distance from Exposed Face (m)	24		80	(ft)	

Liquefaction Potential

SPT Sample Number	Depth (m)	Depth (ft)	Layer Thickness (m)	Midpoint of Layer (m)	Measured N	Soil Type (USCS)	Flag "nlp"	Sat/Unsat	Fines Content (%)	Energy Ratio, ER (%)	C_E	C_B	C_R	C_S	N_{60}	σ_{vc} (kPa)	σ_{vc}' (kPa)	C_N	$(N_1)_{60}$	ΔN for Fines Content	$(N_1)_{60\text{-}cs}$	Stress Reduct. Coeff, r_d	CSR	MSF_{max}	MSF for Sand	K_σ for Sand	CRR for M=7.5 & σ_{vc}=1atm	CRR	Factor of Safety
1	0.61	2.00	0.61	0.30	11	SM		0	35	80	1.33	1.15	0.75	1.00	12.7	12	12	1.70	21.51	5.5	27.01	1.00	0.677	1.8	0.90	1.10	0.347	N.A.	N.A.
2	0.91	3.00	0.30	0.76	11	SM		1	35	80	1.33	1.15	0.75	1.00	12.7	21	18	1.70	21.51	5.5	27.01	1.00	0.787	1.8	0.90	1.10	0.347	0.34187	0.43
3	1.52	5.00	0.61	1.22	36	SC		1	35	80	1.33	1.15	0.8	1.00	44.2	30	21	1.51	66.49	5.5	72.00	1.00	0.956	2.2	0.85	1.10	2.000	1.86709	1.95
4	2.13	7.00	0.61	1.83	23	SC		1	35	80	1.33	1.15	0.8	1.00	28.2	42	28	1.41	39.89	5.5	45.39	0.99	1.034	2.2	0.85	1.10	2.000	1.86709	1.81
5	2.59	8.50	0.46	2.36	49	SC		1	35	80	1.33	1.15	0.85	1.00	63.9	53	34	1.33	85.23	5.5	90.74	0.99	1.054	2.2	0.85	1.10	2.000	1.86709	1.77
6	3.35	11.00	0.76	2.97	26	SC		1	35	80	1.33	1.15	0.85	1.00	33.9	65	39	1.29	43.67	5.5	49.18	0.99	1.129	2.2	0.85	1.10	2.000	1.87	1.65
7	4.72	15.50	1.37	4.04	30	SM		1	35	80	1.33	1.15	0.95	1.00	43.7	87	47	1.23	53.58	5.5	59.09	0.97	1.228	2.2	0.85	1.10	2.000	1.87	1.52
8	4.88	16.00	0.15	4.80	84	SS		1	35	80	1.33	1.15	0.95	1.00	122.4	102	60	1.15	140.28	5.5	145.79	0.97	1.115	2.2	0.85	1.10	2.000	1.87	1.68

Liquefaction Potential

Liquefaction Induced Settlement and Lateral Spreading

Depth (m)	Depth (ft)	Limiting Shear Strain γ_{lim}	Parameter F_α	Maximum Shear Strain γ_{max}	ΔH_i (m)	ΔLDI_i (m)	ΔLDI_i (in)	Vertical Reconsol. Strain ε_v	ΔS_i (m)	ΔS_i (in)
0.61	2.00	0.069	0.107	0.000	0.61	0.000	0.0	0.000	0.000	0.00
0.91	3.00	0.069	0.107	0.069	0.30	0.021	0.8	0.015	0.005	0.18
1.52	5.00	0.000	-3.473	0.000	0.61	0.000	0.0	0.000	0.000	0.00
2.13	7.00	0.002	-1.220	0.000	0.61	0.000	0.0	0.000	0.000	0.00
2.59	8.50	0.000	-5.192	0.000	0.46	0.000	0.0	0.000	0.000	0.00
3.35	11.00	0.001	-1.522	0.000	0.76	0.000	0.0	0.000	0.000	0.00
4.72	15.50	0.000	-2.345	0.000	1.37	0.000	0.0	0.000	0.000	0.00
4.88	16.00	0.000	-10.589	0.000	0.15	0.000	0.0	0.000	0.000	0.00
					LD =	0.02 (m)	0.8 (in)	S=	0.005 (m)	0.18 (in)

Dry Sand Settlement

τ_{avg} (tsf)	Average Stress (p) (tsf)	Max Shear Modulus (Gmax) (tsf)	a	b	γ (%)	ε_{15} (%)	ε_{Nc} (%)	Dry Sand Settlement (in)
0.085	0.08	387.2	0.127	28424	1.00	0.697	0.779	0.4
0.149	0.13	474.2	0.129	22286	0.00	0.000	0.000	0.0
0.213	0.21	848.8	0.132	16403	0.00	0.000	0.000	0.0
0.298	0.29	861.2	0.135	13404	0.00	0.000	0.000	0.0
0.371	0.35	1195.4	0.138	11930	0.00	0.000	0.000	0.0
0.454	0.46	1108.7	0.142	10220	0.00	0.000	0.000	0.0
0.597	0.65	1399.2	0.149	8319.7	0.00	0.000	0.000	0.0
0.699	0.67	1920.9	0.150	8162.7	0.00	0.000	0.000	0.0
							S=	0.37 (in)

(1) Flag "nlp" – based on laboratory testing of fine content, plasticity index, liquid limits and potential intact moisture content.
"nlp" - no liquefacton potential

Project:	King and Myung
Project #:	13525.01
Date:	9/27/2022
Boring:	B-2

Input Parameters:

Peak Ground Accel (g) =	1.038						
Earthquake Magnitude, M =	7.9						
Water Table Depth (m) =	0.6			2.00	(ft)		
Average γ Above Water Table (kN/m^3) =		19.6		125.0	(lb/ft^3)	Ko =	0.5
Average γ Below Water Table (kN/m^3) =		20.4		130.0	(lb/ft^3)	Nc =	19.2
Borehole Diameter (mm) =	152.40			6	(in)		
Requires Correction for Sample Liners (YES/NO):			no				
Rod Lengths Assumed Equal to the Depth Plus		1.5	m (for the above ground extension)				
Gravity Acceleration (m/sec^2)		9.81					
Height of Exposed Face (m)		5		15	(ft)		
Boring Distance from Exposed Face (m)		15		50	(ft)		

Liquefaction Potential

SPT Sample Number	Depth (m)	Depth (ft)	Layer Thickness (m)	Midpoint of Layer (m)	Measured N	Soil Type (USCS)	Flag "nlp"	Sat/Unsat	Fines Content (%)	Energy Ratio, ER (%)	C_E	C_B	C_R	C_S	N_{60}	σ_{vc} (kPa)	σ_{vc}' (kPa)	C_N	$(N_1)_{60}$	ΔN for Fines Content	$(N_1)_{60-cs}$	Stress Reduct. Coeff, r_d	CSR	MSF_{max}	MSF for Sand	K_σ for Sand	CRR for M=7.5 & σ_{vc}'=1atm	CRR	Factor of Safety
1	0.61	2.00	0.61	0.30	11	SM		0	35	80	1.33	1.15	0.75	1.00	12.7	12	12	1.70	21.51	5.5	27.01	1.00	0.677	1.8	0.90	1.10	0.347	N.A.	N.A.
2	0.91	3.00	0.30	0.76	27	SM		1	35	80	1.33	1.15	0.75	1.00	31.1	21	18	1.57	48.82	5.5	54.33	1.00	0.787	2.2	0.85	1.10	2.000	1.86709	2.00
3	1.68	5.50	0.76	1.30	34	SC		1	35	80	1.33	1.15	0.8	1.00	41.7	32	21	1.50	62.75	5.5	68.26	1.00	1.001	2.2	0.85	1.10	2.000	1.86709	1.86
4	2.29	7.50	0.61	1.98	26	SC		1	35	80	1.33	1.15	0.8	1.00	31.9	46	29	1.39	44.25	5.5	49.75	0.99	1.048	2.2	0.85	1.10	2.000	1.86709	1.78
5	2.59	8.50	0.30	2.44	30	SM		1	35	80	1.33	1.15	0.85	1.00	39.1	55	35	1.32	51.59	5.5	57.10	0.99	1.037	2.2	0.85	1.10	2.000	1.86709	1.80
6	3.81	12.50	1.22	3.20	36	SP		1	5	80	1.33	1.15	0.85	1.00	46.9	70	39	1.29	60.39	0.0	60.39	0.98	1.200	2.2	0.85	1.10	2.000	1.87	1.56
7	4.72	15.50	0.91	4.27	53	SP		1	5	80	1.33	1.15	0.95	1.00	77.2	91	51	1.20	92.39	0.0	92.39	0.97	1.178	2.2	0.85	1.10	2.000	1.87	1.59

Liquefaction Potential

Liquefaction Induced Settlement and Lateral Spreading

Depth (m)	Depth (ft)	Limiting Shear Strain γ_{lim}	Parameter F_α	Maximum Shear Strain γ_{max}	ΔH_i (m)	ΔLDI_i (m)	ΔLDI_i (in)	Vertical Reconsol. Strain ε_v	ΔS_i (m)	ΔS_i (in)
0.61	2.00	0.069	0.107	0.000	0.61	0.000	0.0	0.000	0.000	0.00
0.91	3.00	0.000	-1.945	0.000	0.30	0.000	0.0	0.000	0.000	0.00
1.68	5.50	0.000	-3.141	0.000	0.76	0.000	0.0	0.000	0.000	0.00
2.29	7.50	0.000	-1.569	0.000	0.61	0.000	0.0	0.000	0.000	0.00
2.59	8.50	0.000	-2.177	0.000	0.30	0.000	0.0	0.000	0.000	0.00
3.81	12.50	0.000	-2.457	0.000	1.22	0.000	0.0	0.000	0.000	0.00
4.72	15.50	0.000	-5.347	0.000	0.91	0.000	0.0	0.000	0.000	0.00
					LDI =	0.00 (m)	0.0 (in)	S=	0.000 (m)	0.00 (in)

Dry Sand Settlement

τ_{avg} (tsf)	Average Stress (p) (tsf)	Max Shear Modulus (Gmax) (tsf)	a	b	γ (%)	ε_{15} (%)	ε_{Nc} (%)	Dry Sand Settlement (in)
0.085	0.08	387.2	0.127	28424	1.00	0.697	0.779	0.4
0.149	0.13	598.6	0.129	22286	0.00	0.000	0.000	0.0
0.224	0.23	874.5	0.133	15491	0.00	0.000	0.000	0.0
0.319	0.31	919.0	0.136	12861	0.00	0.000	0.000	0.0
0.381	0.35	1024.4	0.138	11930	0.00	0.000	0.000	0.0
0.485	0.52	1265.7	0.144	9465.9	0.00	0.000	0.000	0.0
0.628	0.65	1624.0	0.149	8319.7	0.00	0.000	0.000	0.0
							S=	0.37 (in)

(1) Flag "nlp" – based on laboratory testing of fine content, plasticity index, liquid limits and potential intact moisture content.
"nlp" - no liquefacton potential

Project: King and Myung
Project #: 13525.01
Date: 9/27/2022
Boring: B-3

Input Parameters:

Peak Ground Accel (g) =	1.038			
Earthquake Magnitude, M =	7.9			
Water Table Depth (m) =	0.6	2.00	(ft)	
Average γ Above Water Table (kN/m³) =	19.6	125.0	(lb/ft³)	Ko = 0.5
Average γ Below Water Table (kN/m³) =	20.4	130.0	(lb/ft³)	Nc = 19.2
Borehole Diameter (mm) =	152.40	6	(in)	
Requires Correction for Sample Liners (YES/NO):	no			
Rod Lengths Assumed Equal to the Depth Plus	1.5	m (for the above ground extension)		
Gravity Acceleration (m/sec²)	9.81			
Height of Exposed Face (m)	5	15	(ft)	
Boring Distance from Exposed Face (m)	27	90	(ft)	

Liquefaction Potential

SPT Sample Number	Depth (m)	Depth (ft)	Layer Thickness (m)	Midpoint of Layer (m)	Measured N	Soil Type (USCS)	Flag "nlp"	Sat/Unsat	Fines Content (%)	Energy Ratio, ER (%)	C_E	C_B	C_R	C_S	N_{60}	σ_{vc} (kPa)	σ_{vc}' (kPa)	C_N	$(N_1)_{60}$	ΔN for Fines Content	$(N_1)_{60\text{-}cs}$	Stress Reduct. Coeff, r_d	CSR	MSF_{max}	MSF for Sand	K_σ for Sand	CRR for M=7.5 & σ_{vc}'=1atm	CRR	Factor of Safety
1	0.61	2.00	0.61	0.30	11	SM		0	35	80	1.33	1.15	0.75	1.00	12.7	12	12	1.70	21.51	5.5	27.01	1.00	0.677	1.8	0.90	1.10	0.347	N.A.	N.A.
2	0.91	3.00	0.30	0.76	13	SM		1	35	80	1.33	1.15	0.75	1.00	15.0	21	18	1.70	25.42	5.5	30.92	1.00	0.787	2.1	0.87	1.10	0.549	0.52367	0.67
3	1.22	4.00	0.30	1.07	13	SC		1	35	80	1.33	1.15	0.75	1.00	15.0	27	21	1.70	25.42	5.5	30.92	1.00	0.864	2.1	0.87	1.10	0.549	0.52367	0.61
4	1.83	6.00	0.61	1.52	12	SC		1	35	80	1.33	1.15	0.8	1.00	14.7	36	24	1.67	24.62	5.5	30.13	1.00	1.001	2.0	0.87	1.10	0.493	0.47358	0.47
5	2.44	8.00	0.61	2.13	13	SC		1	35	80	1.33	1.15	0.8	1.00	15.9	49	31	1.54	24.57	5.5	30.08	0.99	1.061	2.0	0.87	1.10	0.490	0.47092	0.44
6	3.35	11.00	0.91	2.90	20	SC		1	35	80	1.33	1.15	0.85	1.00	26.1	64	37	1.34	35.05	5.5	40.55	0.99	1.148	2.2	0.85	1.10	2.000	1.87	1.63
7	4.11	13.50	0.76	3.73	28	SP		1	5	80	1.33	1.15	0.85	1.00	36.5	81	46	1.23	45.00	0.0	45.01	0.98	1.152	2.2	0.85	1.10	2.000	1.87	1.62

Liquefaction Potential

Liquefaction Induced Settlement and Lateral Spreading

Depth (m)	Depth (ft)	Limiting Shear Strain γ_{lim}	Parameter F_α	Maximum Shear Strain γ_{max}	ΔH_i (m)	ΔLDI_i (m)	ΔLDI_i (in)	Vertical Reconsol. Strain ε_v	ΔS_i (m)	ΔS_i (in)
0.61	2.00	0.069	0.107	0.000	0.61	0.000	0.0	0.000	0.000	0.00
0.91	3.00	0.041	-0.151	0.041	0.30	0.012	0.5	0.008	0.002	0.09
1.22	4.00	0.041	-0.151	0.041	0.30	0.012	0.5	0.008	0.002	0.09
1.83	6.00	0.046	-0.097	0.046	0.61	0.028	1.1	0.009	0.006	0.22
2.44	8.00	0.046	-0.094	0.046	0.61	0.028	1.1	0.009	0.006	0.22
3.35	11.00	0.008	-0.846	0.000	0.91	0.000	0.0	0.000	0.000	0.00
4.11	13.50	0.003	-1.190	0.000	0.76	0.000	0.0	0.000	0.000	0.00
					LD =	0.08 (m)	3.2 (in)	S=	0.016 (m)	0.62 (in)

Dry Sand Settlement

τ_{avg} (tsf)	Average Stress (p) (tsf)	Max Shear Modulus (Gmax) (tsf)	a	b	γ (%)	ε_{15} (%)	ε_{Nc} (%)	Dry Sand Settlement (in)
0.085	0.08	387.2	0.127	28424	1.00	0.697	0.779	0.4
0.149	0.13	496.0	0.129	22286	0.00	0.000	0.000	0.0
0.191	0.17	572.8	0.130	18753	0.00	0.000	0.000	0.0
0.255	0.25	695.4	0.134	14703	0.00	0.000	0.000	0.0
0.340	0.33	802.6	0.137	12372	0.00	0.000	0.000	0.0
0.444	0.46	1039.7	0.142	10220	0.00	0.000	0.000	0.0
0.557	0.56	1192.5	0.146	9038.7	0.00	0.000	0.000	0.0
							S=	0.37 (in)

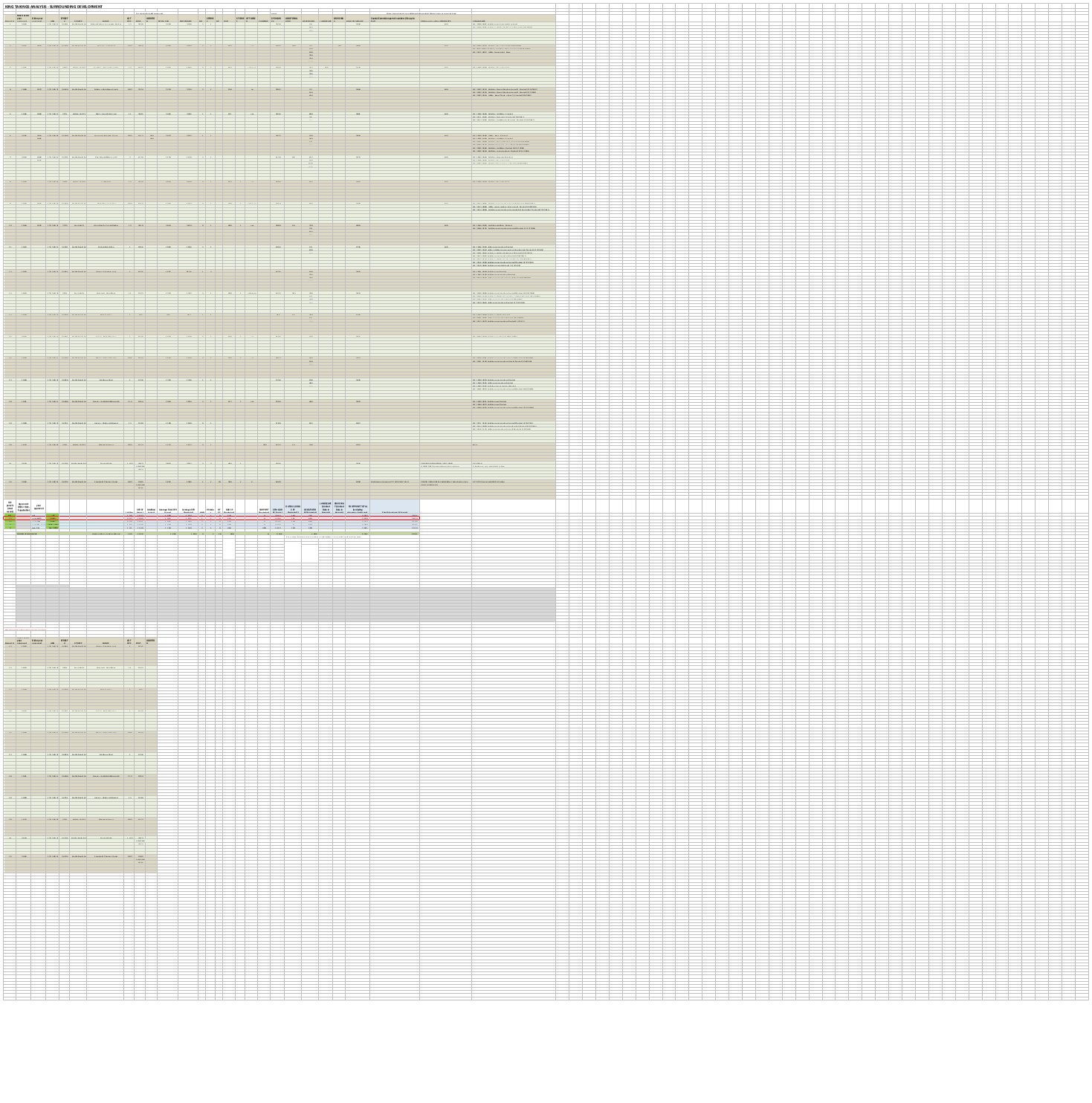
(1) Flag "nlp" – based on laboratory testing of fine content, plasticity index, liquid limits and potential intact moisture content.
"nlp" - no liquefacton potential

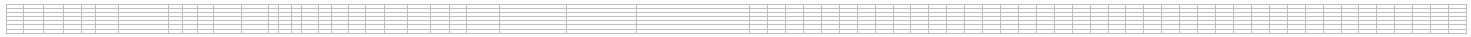
DISTRIBUTION

Four Copies-

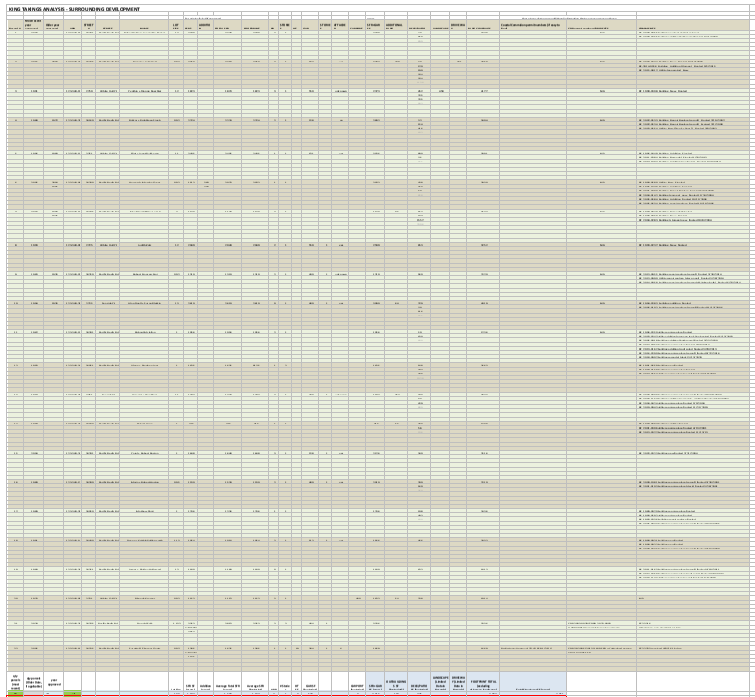
Andrew King and Eun Myung
3235 Roswell Road NE #705
Atlanta, GA 30305
blueandrewking@gmail.com
kissin00@snu.ac.kr

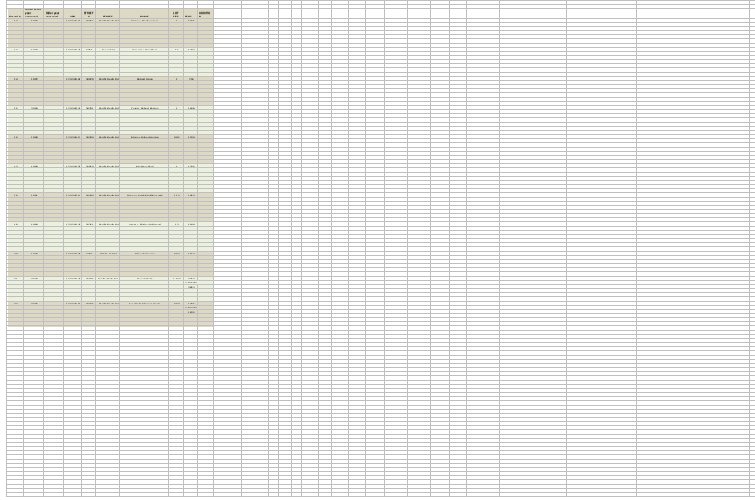
XING TAKINGS ANALYSIS - SURROUNDING DEVELOPMENT





XING YAN DS ANALYSIS - SURROUNDING DEVELOPMENT





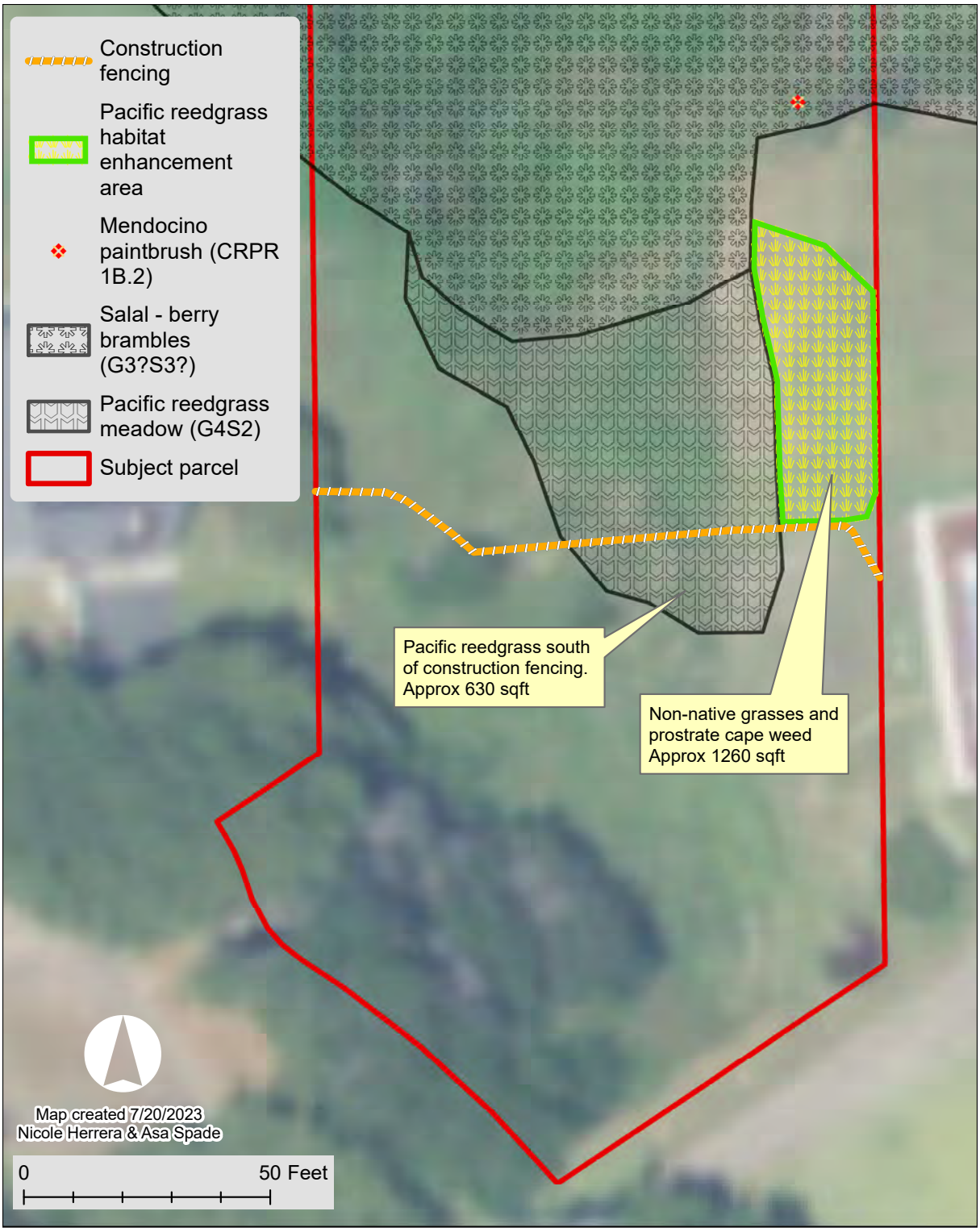


Figure 19. An area of approximately 1260 square feet east of and adjacent to the Pacific reedgrass meadow is vegetated with non-native grassland and prostrate cape weed. This area is an appropriate location for transplanting Pacific reedgrass that is anticipated to be impacted by the project footprint.