COASTAL PERMIT ADMINISTRATOR STAFF REPORT- STANDARD CDP

SEPTEMBER 25, 2025
CDP_2023-0009

PROJECT PLANNER CONTACT
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PROJECT SUMMARY

OWNER/APPLICANT:	James & Denise De Alba 3785 Glen Haven Road Soquel, CA 95437
REQUEST:	Coastal Development Permit for additions to a single-family residence consisting of a new second floor, enlarged bedrooms, an attached garage, and decks; a new water storage tank on a concrete slab; a new outdoor kitchen area; and a new septic system.
LOCATION:	In the Coastal Zone 2± miles north of Caspar, on a private road 600± feet south of its intersection with Pacific Way (CR 436A), located at 33389 Pacific Way, Fort Bragg; APN: 017-320-51.
TOTAL ACREAGE:	3.2± Acres
GENERAL PLAN:	Rural Residential, 5 acre minimum [Rural Residential, 2 acre minimum] (RR:5 [RR:2]) General Plan (Chapter 7 – Coastal Element)
ZONING:	Rural Residential, 5 acre minimum [Rural Residential, 2 acre minimum] (RR:5 [RR:2]) Mendocino County Code Title 20, Division II
CODE REFERENCE:	Family Residential: Single-Family Mendocino County Code (MCC) Section 20.376.010(A)
APPEALABLE	Yes
SUPERVISORIAL DISTRICT:	District 4 (Norvell)
ENVIRONMENTAL DETERMINATION:	Mitigated Negative Declaration
RECOMMENDATION:	Approve with Conditions

PROJECT BACKGROUND & INFORMATION

PROJECT DESCRIPTION: The applicant originally requested authorization to construct a new single-family residence with attached garage, decks, roof-mounted solar panels, and septic system; destroy one existing well and connect a second existing well to the new residence; conduct additional trenching to connect the new residence to grid power; extend the existing driveway and parking area; and convert an existing cabin into an Accessory Dwelling Unit (ADU). The Coastal Permit Administrator held public hearings to consider the original request on March 28 and May 23 of 2024.[1] California Coastal Commission staff expressed several concerns regarding the original request's consistency with the County's Local Coastal Program and Coastal Act.[2] As such, the hearing was continued to a date uncertain. The applicant has since revised the project to address Coastal Commission staff's concerns.

The revised project requests authorization to remodel the existing cabin by enlarging bedrooms, adding a second floor, adding an attached garage, adding decks, and adding roof-mounted solar panels; install a new 3,000 gallon water storage tank on a concrete slab; install an outdoor kitchen area; construct a gravel turnout and hammerhead "T" turnaround in accordance with CAL FIRE State Fire Safe Regulations; and install low symbolic fencing along the edge of Environmentally Sensitive Habitat Areas (ESHAs) to prevent encroachment in accordance with California Department of Fish and Wildlife recommendations. The new residence is no longer requested. No new water line or electrical trenching would occur because the existing cabin is already connected to the existing well and grid power. The driveway and parking area would no longer be extended into ESHA. The cabin would no longer be converted into an ADU but would instead continue to function as the primary single-family residence.

SITE CHARACTERISTICS: The subject parcel was created by Minor Subdivision MS 59-89 in 1992. A fifty (50) foot wide roadway and public utility easement is shown on the parcel map along the eastern edge of the property.[3] A gravel driveway lies within the easement and connects to Pacific Way (CR 436A) through adjacent property to the north. The driveway then follows the southern property boundary until it meets the project site. The site is adjacent to a blufftop overlooking the Pacific Ocean. The property contains two (2) existing wells, two (2) sheds, and an existing cabin. On October 10, 1991, a deed restriction was recorded against the property which established a one hundred (100) foot blufftop setback area and a fifty (50) foot creek setback area wherein any alteration of landforms, removal of vegetation, use of heavy machinery or equipment, or the erection of any structures is prohibited, except public access improvements within the public access easement. On September 20, 1994, an amendment to the deed restriction was recorded which reduced the blufftop setback to fifty (50) feet. The amendment also established a fifteen (15) foot setback from a drainage swale.[4] A stipulated judgement was recorded in 1992 following a settlement regarding a disputed property line between the subject property and adjacent property to the south. A lot line adjustment affirming the stipulated boundary was approved by the Coastal Commission in 1993 which created the current configuration of the subject parcel. The location of the public access easement was also amended to align with the stipulated boundary.[5] On March 10, 1993, an irrevocable offer to dedicate an easement for vertical public access along the southern boundary of the property was recorded. The offer was accepted by the American Land Conservancy in 2003 and subsequently transferred to the Mendocino Land Trust in 2004.[6] The easement continues to be managed by the Mendocino Land Trust as part of the Belinda Point Trail.

Public Services:

Access:	Pacific Way (CR 436A)
Water District:	None
Sewer District:	None
Fire District:	Fort Bragg Unified

[1] Staff report available at https://www.mendocinocounty.gov/home/showpublisheddocument/63214/638446367701100000.
[2] See attachment KK below. Also available at https://www.mendocinocounty.gov/home/showpublisheddocument/63600/638461124496770000.
[3] See attachment W below.
[4] See attachment Z below.
[5] See attachment X below.
[6] See permit number 1-92212, available at https://www.coastal.ca.gov/PDP/.

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

- **1-89-200-W:** Coastal Commission jurisdiction Coastal Development Permit Waiver to drill a water well. Approved 09/15/1989.

- **MS 59-89:** Minor Subdivision to create three (3) parcels of approximately two (2±) acres each from a seven (7) acre parcel and an exception to Mendocino County Code 17-48.5(A)(1)(e)(i) to allow a reduced access easement width. The applicant proposes to create a 16.5 foot, one way accessway extending from Pacific Way to Ocean Drive. Approved 03/11/1991.

- **1-91-060:** Coastal Commission jurisdiction Coastal Development Permit to divide a seven (7) acre parcel into three (3) approximately two (2±) acre parcels and improve access roads to the site by paving with asphalt an approximately two hundred forty (240±) foot long roadway from Pacific Way, rocking an approximately 2,220 foot long roadway from Ocean Drive, and rocking the 460-foot long roadway and turnaround within the subdivision. Approved 09/10/1991.

- **1-92-212:** Coastal Commission jurisdiction Coastal Development Permit to (1) adjust the lot line between two lots resulting in adjusted lots of approximately 2.8 and 13.5 acres, and (2) relocate an offered public access easement approximately twenty (20) feet to the south to accommodate a future building site on one of the parcels. Approved 01/12/1993.

- **1-91-060-A1:** Coastal Commission jurisdiction amendment to Coastal Development Permit 1-91-060 to reduce the existing one hundred (100) foot blufftop setback requirements to fifty (50) feet and move the building envelope accordingly. Approved 08/09/1994.

- **CDB 72-95:** Coastal Development Boundary Line Adjustment to adjust 1.58± acres from APN: 017-320-48 (now 017-320-50) into APN: 017-320-47 (now 017-320-50) and 0.79± acres from APN: 017-320-48 into APN: 017-320-49 (now 017-320-51). Finalized 05/03/1996. This created the current parcel configuration.

AGENCY COMMENTS: On May 26, 2023, 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
Department of Transportation	No Comment
Division of Environmental Health	Comments
Building Inspection Division	No Response
Assessor	No Response
Archaeological Commission	Comments
Sierra Club	No Response
CAL FIRE (Land Use)	Comments
California Dept. of Fish & Wildlife	Comments
California Coastal Commission	Comments
County Addresser	No Comment
Cloverdale Rancheria	No Response
Redwood Valley Rancheria	No Response
Sherwood Valley Band of Pomo Indians	No Response
Fort Bragg Rural Fire District	No Comment

On March 15, 2023, CAL FIRE issued State Fire Safe Regulations Conditions of Approval for the project, including the driveway standard, address standard, and defensible space and fuels modification standard. The conditions of approval require that a turnout be provided near the midpoint of the driveway, and that

either a forty (40) foot radius turnaround or sixty (60) foot hammerhead "T" shall be utilized.[7]

On May 30, 2023, the Planning & Building Services representative for the Mendocino County Archaeological Commission noted that the project should be referred to the Northwest Information Center at Sonoma State University (NWIC) for comment and scheduled for an Archaeological Commission meeting depending on NWIC comments. However, an Archaeological Survey Report was submitted with the application, so the application was not referred to NWIC. Instead, the application was scheduled for the July 12, 2023 Archaeological Commission meeting to review the Survey Report. No cultural resources were identified on the property as a result of the survey. The survey was accepted by the Commission at the July 12 meeting.

On June 8, 2023, the Division of Environmental Health (DEH) noted that a three (3) bedroom septic system permit (Permit No. ST 27862) had been approved and that a proof of water test had been conducted on the property which found three (3) gallons per minute of production. Though the septic permit has been "approved" by DEH, the permit has not yet been issued because its installation requires a Coastal Development Permit.

On January 17, 2024, the California Department of Fish and Wildlife (CDFW) provided comments on the previously proposed development. CDFW recommended that the County (1) adopt the mitigation measures described in the Preliminary MMRP[8] and include them as conditions of approval within the CDP, (2) require installation of low, symbolic fencing along the western Pacific reed grass enhancement areas, (3) require installation of low, symbolic fencing along the southern side of the driveway along the other enhancement area to prevent widening of the driveway within the enhancement area, and (4) encourage the removal of target invasive species to maintain the Pacific reed grass, northern Bishop pine, and other Sensitive Natural Communities on the property through a deed restriction. On April 18, 2025, CDFW provided further comments on the revised, currently proposed development. CDFW recommended that the applicant provide (1) a project description that describes the proposed development and discloses any potential impacts to Sensitive Natural Communities, rare plants, and Species of Special Concern and the measures proposed to avoid, minimize, or mitigate for the impacts to the natural resources, (2) maps or drawings that clearly label the proposed development and the extent of the natural resources that are ESHA and the proposed buffers, and (3) a reduced buffer analysis if ESHA buffers would be less than one hundred (100) feet. Following these comments, County staff attended a site visit with the property owner, CDFW staff, and the biologist retained by the property owner. At the site, the group discussed the information that should be provided to analyze the revisions to the proposed development and their implications regarding impacts to ESHA and other biological resources. The group also discussed CDFW's ongoing recommendations to install low symbolic fencing in certain areas to prevent encroachment into ESHA. The recommended location of symbolic fencing was revised due to the changes to the proposed development. The newly recommended location of symbolic fencing would be along the northern edge of the yard and around an existing clearing where the leach field would be installed. Following the site visit, the applicant submitted a report by the biologist addressing CDFW's recommendations.[9]

On March 15, 2024, the California Coastal Commission provided comments expressing concern regarding the proposed development and its consistency with Local Coastal Program (LCP) and Coastal Act regulations, particularly those related to Environmentally Sensitive Habitat Areas (ESHA), the "Takings Analysis" within a previous staff report for the previously proposed development,[10] the lack of analysis of the least environmentally damaging alternative, mitigation measures, California Environmental Quality Act (CEQA) compliance, and nonconforming uses and structures.[11]

PROJECT ANALYSIS

LOCAL COASTAL PROGRAM CONSISTENCY: The proposed development is subject to the requirements of Mendocino County's Local Coastal Program (LCP), which includes applicable policies

[7] See attachment GG below.
[8] See attachment OO below.
[9] See attachment CC below.
[10] Staff report available at https://www.mendocinocounty.gov/home/showpublisheddocument/63214/638446367701100000.
[11] See attachment KK below. Also available at https://www.mendocinocounty.gov/home/showpublisheddocument/63600/638461124496770000.

within the Coastal Element of the General Plan and applicable regulations within Division II of Title 20 of the Mendocino County Code (the "Coastal Zoning Code"). The proposed development is also subject to the requirements of Chapter 22.12 of Title 22 of the Mendocino County Code for Archaeological Resources.

Land Use and Planning Areas: The property is within the Rural Residential (RR) land use classification. Per Coastal Element Chapter 2.2,

> *"The Rural Residential classification is intended 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."*

"Residential and associated utilities" are a principal permitted use within the RR classification. The proposed development, including additions to the existing residence, would have no impact on agricultural viability because the entirety of the property is within Environmentally Sensitive Habitat Areas (ESHA) or ESHA buffers. Agricultural development is not permitted within ESHA because it is not dependent on ESHA. Therefore, the subject property has no agricultural viability. The property is also within the Hare Creek to Jug Handle Creek Planning Area outlined in Coastal Element Section 4.5. However, none of the policies in this section apply to the proposed development.

Zoning: The property is within the Rural Residential, 5 acre minimum [Rural Residential, 2 acre minimum] (RR:5 [RR:2]) zoning district. Pursuant to Mendocino County Code (MCC) section 20.376.005,

> *"This 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."*

As noted above, the property has no agricultural viability because it is entirely within ESHA or ESHA buffers. Therefore, the proposed development would have no impact on agricultural viability. Pursuant to section 20.376.010, Family Residential Single-Family is a principal permitted use in the RR:5 [RR:2] district. Pursuant to section 20.376.040, the proposed development must be located at least twenty (20) feet from all property lines. The proposed development would meet this requirement. Pursuant to section 20.376.045, the building height limit is twenty-eight (28) feet above natural grade because the property is not within a Highly Scenic Area. The remodeled residence would be twenty-five feet and seven inches (25'-7") above grade. Pursuant to section 20.376.065, the maximum lot coverage for the property is fifteen percent (15%), or 20,791 square feet. The total square footage of the remodeled residence, decks, garage, outdoor kitchen, water tank, existing sheds, septic system, and driveway turnaround would be approximately 9,583 square feet (0.22 acres).[12]

The property is within the Floodplain (FP) Combining District. However, the project site is not within the mapped flood hazard zone. As such, the requirements of MCC Chapter 20.420 and 22.17 do not apply.[13]

Pursuant to section 20.444.015, fences in rear or side yards may not exceed eight (8) feet, while fences in hedges in front yards or side yards having street frontage may not exceed three and one half (3.5) feet. None of the proposed low symbolic fencing would be located within front, rear, or side yards.

Pursuant to section 20.456.010 and 20.456.015, the proposed garage, water tank, and outdoor kitchen area are considered permitted accessory uses because they are customarily associated with, appropriate, incidental, and subordinate to the principal permitted residential use.

Pursuant to section 20.472.010 and 20.472.015, two (2) parking spaces at least nine (9) by twenty (20) feet in size and surfaced, at a minimum, with gravel must be provided for the proposed residential use. The proposed garage would provide one (1) space, while the driveway area would provide ample graveled area for an additional parking space.

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[12] See attachments AA and BB below.

[13] See attachment N below.

The March 15, 2024 letter from the Coastal Commission notes that the supporting application materials describe the existing cabin as a legally non-conforming structure, and that the County's findings should address how any use and/or modification of the existing cabin conforms with the requirements of the Coastal Zoning Code. Pursuant to MCC Section 20.480.005(A), a nonconforming use is a *"use of a structure or land which was lawfully established and maintained prior to the adoption of this Division but which does not conform with the use regulations for the zone in which it is located."* The existing cabin is used as a single dwelling unit. According to the applicant, the cabin has been in place since at least 1954.[14] If true, the establishment would predate the adoption of the Coastal Act and the County's Coastal Zoning Code. However, the use does conform with the use regulations for the Rural Residential zone because single-family residential use is a principal permitted use. Therefore, the cabin is not a nonconforming use. Pursuant to MCC Section 20.480.005(B), a nonconforming structure is *"a structure which was lawfully erected prior to the effective date of the application of these regulations but which, under this Division, does not conform with the standards of yard spaces, height of structures, distance between structures, parking, etc., prescribed in the regulations for the zone in which the structure is located."* Likewise, the existing cabin is not a nonconforming structure because it conforms to the setback, dwelling density, height limit, lot coverage, and other requirements of the Rural Residential zone.

Grading, Erosion, and Runoff: Mendocino County Code (MCC) Chapter 20.492 establishes standards for grading, erosion, sedimentation, and runoff. Pursuant to section 20.492.005, *"the approving authority shall determine the extent to which the following standards should apply to specific projects, and the extent to which additional studies and/or mitigation are required."*

A Geotechnical Investigation for the previously proposed development was prepared by a registered professional Engineering Geologist and Geotechnical Engineer in 2022.[15] The investigation recommended that areas to be graded should be cleared of existing vegetation, rubbish, existing structures, and debris, and that surface soils should be stripped to remove roots. The investigation also recommended that weak soils be removed, and that exposed soils should be scarified, moisture conditioned, and compacted. The investigation also recommended that finished surfaces be graded to drain away from structures and foundations. Drainage across the lot should be by sheet flow.

Grading is expected to have little impact on natural drainage patterns, landforms, and erosion because the site is mostly flat. Stormwater runoff flows would increase due to the additional impervious surface area created by the additions and garage but would be expected to sheet flow across the property and infiltrate through the gravel driveway and surrounding natural vegetation. Staff recommends that the applicable recommendations of the geologist and engineer be incorporated as conditions of approval in addition to standard Best Management Practices during construction.

Environmentally Sensitive Habitat and Other Resource Areas: MCC Chapter 20.496 establishes regulations for Environmentally Sensitive Habitat Areas (ESHAs), which include "*anadromous fish streams, sand dunes, rookeries and marine mammal haul-out areas, wetlands, riparian areas, areas of pygmy vegetation which contain species of rare or endangered plants and habitats of rare and endangered plants and animals*".

Pursuant to MCC Section 20.496.015 and Coastal Element Policy 3.1-2, development proposals that have the potential to impact ESHA are subject to a biological survey. A Natural Resources Study was prepared in 2022 and updated in 2023 for the previously proposed development.[16] Botanical field surveys were conducted in April, June, and July of 2021. A wetland delineation and wildlife scoping surveys were also conducted for the Natural Resources Study. The study found that no special status plant species were present within one hundred (100) feet of existing and previously proposed development. The vegetation alliances and/or associations observed on the property are listed below:

Latin Name	Common Name	ESHA?
Pinus muricata – Pinus radiata Forest and Woodland Alliance	Bishop Pine – Monterey Pine Forest and Woodland	Yes
Eucalyptus spp – Ailanthus altissima –	Eucalyptus – Tree of Heaven – Black	No

[14] See attachment DD below.

[15] See attachment MM below.

[16] See attachment NN below.

Robinia pseudoacacia Forest and Woodland Alliance	Locust Groves	
Pinus contorta ssp contorta Forest and Woodland Alliance	Beach Pine Forest and Woodland	Yes
Lonicera involucrata scrub	Twinberry Scrubland Alliance	Yes
Cytisus scoparius – Genesta Monspessulana – Cotoneaster spp. Shrubland Alliance	Broom Patch	No
Rubus spectabilis – Morella californica Shrubland Alliance Forest and Woodland Alliance	Salmonberry – Wax Myrtle Scrub	Yes
Calamagrostis nutkaensis Herbaceous Alliance	Pacific Reedgrass Meadow	Yes
Holcus lanatus – Anthoxanthum odoratum Herbaceous Semi-Natural Alliance	Common Velvet Grass – Sweet Vernal Grass Meadow	No
Eriophyllum staechadifolium - Erigeron glaucus - Eriogonum latifolium Herbaceous Alliance	Salal-Berry Brambles/Seaside Wooly Sunflower – Seaside Daisy – Buckwheat Patches *Gaultheria shallon – Rubus (ursinus)* Shrubland Alliance	Yes

The Natural Resources Study concluded that the project area has the potential to provide habitat for Obscure bumblebee (*Bombus caliginosus*), Western bumble bee (*Bombus occidentalis*), Western pond turtle (*Actinemys marmorata*), Northern red-legged frog (*Rana aurora aurora*), and Sonoma tree vole (*Arborimus pomo*).

No special status bird nests or nesting activity were observed during surveys. Despite this, the Natural Resources Study concluded that there is a potential for presence of nesting birds in the area during the nesting season, including special status species. The Study also concluded that there is a potential for presence of special status bats within the wooded areas near the project area.

The Natural Resources Study concluded that the Salmonberry – Wax Myrtle Scrub and Twinberry Scrubland Alliance are wetlands. A small drainage about one hundred (100) feet in length was also observed to have standing water and was therefore presumed to be an Army Corps jurisdictional watercourse due to it draining over the bluff and into the Pacific Ocean.

Several avoidance, mitigation, and restoration measures were recommended within the Natural Resources Study, including pre-construction surveys for Sonoma tree vole, bumblebees, birds, bats, and western pond turtle, contractor training for Northern red-legged frog, erosion control and ground disturbance minimization, invasive plant species removal and prevention, and the development of a Bishop pine forest Active Management Plan.

In 2023, a Preliminary Mitigation, Management, Monitoring, and Reporting Plan (the "MMRP") was prepared for invasive plant special removal and Bishop pine forest and Pacific reedgrass meadow enhancement and restoration.[17] The MMRP implements the Natural Resources Study's recommendation to prepare an "Active Management Plan". The MMRP contains several performance goals and success criteria, including removal of invasive, non-native plants throughout the property, natural recruitment of Bishop pine seedlings, reestablishment of native Bishop pine understory, establishment of new Pacific reedgrass meadow, fuel load reduction, pathogen outbreak prevention, monitoring, and reporting. The MMRP contains instructions for implementation of these goals.

According to the MMRP, the previously proposed development would have directly impacted and eliminated approximately 1,550 square feet of Bishop pine forest and 1,640 square feet of Pacific reedgrass meadow. An additional 1,260 square feet of temporary impact would have occurred within the Bishop pine forest to accommodate installation of the septic system.

Pursuant to Section 20.496.020 and Coastal Element Policy 3.1-7, a buffer area shall be established

[17] See attachment OO below.

adjacent to all ESHA. The buffer area shall be a minimum of one hundred (100) feet but may be reduced to a minimum of fifty (50) feet under certain conditions. Due to the extent of the various identified ESHAs, the entire property lies either directly within ESHA or within a fifty (50) foot buffer.

Residential and accessory development is not permitted within ESHA. Pursuant to Section 20.496.020, *"developments permitted within a buffer area shall generally be the same as those uses permitted in the adjacent ESHA"*. Therefore, residential and accessory development is not permitted within ESHA buffers.

Therefore, all proposed development would be inconsistent with County ESHA regulations. This inconsistency cannot be remedied by (1) special conditions, (2) siting development in a different location, or (3) reducing the scale of the project because the entirety of the property is within ESHA or ESHA buffers.

Therefore, under normal circumstances, the County of Mendocino would deny a Coastal Development Permit application for residential and accessory development on this property. However, Public Resources Code Section 30010 forbids the denial of a permit *"in a manner which will take or damage private property for public use, without the payment of just compensation therefor."*

Consequently, the Coastal Act (Public Resources Code Sections 30000 through 30900) imposes on the County the duty to assess whether its action might constitute a "taking". If the County concludes that its action does not constitute a taking, then it may deny the project on finding that its actions are consistent with Section 30010. If the County determines that its action would constitute a taking, then it applies Section 30010 to consider how the project may be approved. In the latter situation, the County may propose modifications to the development to minimize any Coastal Act inconsistencies, while still allowing a reasonable amount of development.

County staff originally concluded that denial of the previously proposed development would constitute a taking. As such, County staff originally recommended approval of the previously proposed development. However, correspondence from California Coastal Commission (CCC) staff asserted that the County's findings were not supported by relevant facts and that the proposed development should be modified. In an attempt to resolve the issues raised by CCC staff, the applicant revised the proposed development, including a letter from a biologist with updated information and recommendations regarding impacts to ESHA under the revised development.[18]

According to the update letter, the identified ESHA have not changed since they were observed in 2023. Whereas the previously proposed development would have resulted in 3,190 square feet of direct impact on ESHA, the revised project would have no direct impact on ESHA because the addition and other structures would be located outside the literal extent of ESHA. However, the revised development would result in approximately 1,307 square feet of development within ESHA buffers and 2,178 square feet of temporary impact of Pacific reedgrass meadow and Bishop pine forest through installation of leach fields. No trees are proposed for removal under the revised development.

The updated letter continues to recommend that pre-construction surveys for Sonoma tree vole, bumblebees, birds, bats, and western pond turtle occur. The updated letter also continues to recommend that contractor training for Northern red-legged frog, invasive plant species removal and prevention, and active management of the Bishop pine forest occur to mitigate temporary impacts to the Bishop pine forest and Pacific reedgrass ESHA. However, the update letter states that the reestablishment of Bishop pine understory habitat and establishment of new Pacific reedgrass meadow habitat are no longer recommended because no permanent impacts to these vegetation alliances would occur under the revised development. The letter also recommends that the success criteria for removal of invasive species and recruitment of Bishop pine seedlings be expanded, as well as minor changes to monitoring and reporting requirements. The letter also recommends that (1) Bishop pine forest understory enhancement and maintenance measures should be incorporated into the buffer enhancement actions except for supplemental plantings due to the lack of permanent impacts, (2) that low-symbolic fencing be installed along the edge of ESHA to deter encroachment, and (3) that pathogen spread minimization, fuel load reduction, monitoring, and reporting measures should be incorporated into the ESHA protection measures as part of the revised development.

[18] See attachment CC below.

As discussed in the Takings Analysis section below, County staff finds that the revised development minimizes inconsistency with the LCP while simultaneously allowing enough development to avoid a regulatory taking. To ensure that the revised development minimizes inconsistency with the LCP, the standards contained in MCC section 20.496.020(A)(4) should be applied for development permitted within ESHA buffer areas.

Pursuant to subsections 20.496.020(A)(4)(a) and (d), development would be compatible with the continuance of adjacent habitat areas because most development would be located outside the literal extent of such areas. Low symbolic fencing would be installed to prevent encroachment into the adjacent habitat areas, and measures would be implemented to promote recruitment of Bishop pine seedlings to mitigate temporary impacts due to leach line installation. Invasive species would be targeted for removal, which would provide an opportunity for native habitat to expand into areas where invasive species are removed.

Pursuant to subsections 20.496.020(A)(4)(b), (c), and (e), the proposed site for the expanded residence, garage, water tank, and outdoor kitchen is the best site because it is clustered among the disturbed areas immediately surrounding the existing residence and lies outside the literal extent of ESHA. The site of the proposed hammerhead turnaround is the only site large enough to accommodate the turnaround that is outside the literal extent of ESHA. As noted in the letter from Carl Rittiman & Associates, the new leach lines must be located in the Bishop pine forest. Other locations are not feasible due to soil profiles and required setbacks to the existing well.[19] As noted in the update letter from the biologist, replanting lost vegetation is no longer necessary because vegetation will no longer be permanently removed. Mitigation measures would be incorporated to account for temporary impacts and impacts to buffer areas, such as the installation of symbolic fencing, removal of invasive species, promoting recruitment of Bishop pine seedlings, and restoration of Bishop pine forest understory.

Pursuant to subsection 20.496.020(A)(4)(f), the driveway must be paved with gravel at a minimum as required by CAL FIRE regulations. The revised development would greatly reduce the amount of vegetation removal by siting development outside the literal extent of ESHA. No trees would be removed under the revised development. Human intrusion into ESHA would be minimized by the installation of symbolic fencing along the edge of ESHA.

Pursuant to subsection 20.496.020(A)(4)(g), (h), and (i), riparian vegetation would not be lost due to development, and the revised development would not be located within a one hundred (100) year flood hazard area. The proposed development would be greater than fifty (50) feet from the identified stream. Pursuant to subsection (j), stormwater runoff would primarily sheet flow across the property towards the Pacific Ocean, including through the stream outfall at the bluff. Pursuant to subsection 20.496.020(A)(4)(k), mitigation measures would be incorporated to minimize potential impacts to ESHA as listed above.

In addition to implementing the mitigation measures recommended by CDFW and the biologists, CCC staff assert that an additional mitigation measure should be added "*requiring as a condition of approval the recordation of a deed restriction that adequately prohibits all development in the ESHA buffer area on the property except for the following types of development: a) removal of non-native vegetation; b) the planting of native vegetation, or c) vegetation clearance if required by CAL FIRE*". CCC staff also recommend that the use of any rodenticides be prohibited to minimize potential impacts of rodenticide use to other environmentally sensitive wildlife species. County staff recommends that these mitigation measures be adopted as conditions of approval.

Hazards Areas: MCC Chapter 20.500 establishes standards to ensure that development minimizes risk to life and property in areas of high geologic, flood, and fire hazard, assures structural integrity and stability, and neither creates not contributes significantly to erosion, geologic instability or destruction of the site or surrounding areas, nor in any way requires the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs. Coastal Element Policy 3.4-1 requires that the County review all applications for Coastal Development Permits to determine threats and impacts from geologic hazards.

Pursuant to section 20.500.015 and Policy 3.4-1, a geologic investigation and report is required prior to development approval due to the property being in an area of known or potential geologic hazards (a blufftop lot). A Geotechnical Investigation for the previously proposed development was prepared by a

[19] See attachment EE below

registered professional Engineering Geologist and Geotechnical Engineer in 2022. Pursuant to section 20.500.020(B)(1) and Policy 3.4-7, the investigation recommended that a bluff setback of thirty-six (36) feet be established. However, the property is already subject to a fifty (50) foot bluff setback established by deed restriction in accordance with 1-91-060-A1. Therefore, the proposed development should continue to maintain a fifty (50) foot setback. Indeed, the revised site plan shows that the currently proposed development would meet the bluff setback requirement.

Pursuant to sections 20.500.020, 20.500.030, and Coastal Element Policies 3.4-3, 3.4-6, 3.4-11, and 3.4-13, the site is not within a mapped earthquake fault zone, tsunami inundation area, existing or historic landslide, or flood hazard area. No retaining walls or bluff armoring structures are proposed. Pursuant to section 20.500.025, CAL FIRE issued State Fire Safe Regulations Conditions of Approval for the project, including the driveway standard, address standard, and defensible space and fuels modification standard. Staff recommends that CAL FIRE requirements be adopted as conditions of approval.

Visual Resources and Special Treatment Areas: MCC Section 20.504.015 and Coastal Element Policy 3.5-1 establish Highly Scenic Areas where certain development criteria apply to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural landforms, to ensure that development is visually compatible with the character of surrounding areas and, where feasible, to restore and enhance visual quality in visually degraded areas. However, the project site is not within a Highly Scenic Area.[20]

Though no exterior lighting is proposed as part of the revised development, staff recommends that the exterior lighting regulations of section 20.504.035 be memorialized as conditions of approval so that these regulations would appear on the deed restriction required by other conditions. Therefore, future owners would be notified of exterior lighting requirements.

Transportation, Utilities, and Public Services: MCC Chapter 20.516 and Coastal Element Policies 3.8-1, 3.8-7, 3.8-9, and 3.9-1 establish criteria to ensure that new development is approved subject to the availability of necessary public services. Pursuant to subsection 20.516.015(A), a satisfactory site for an individual sewage system exists. As noted in a letter from Carl Rittiman & Associates, a three (3) bedroom disposal system was identified for the property as part of the original subdivision process, but the leach field cannot be used because it was constructed within the road easement created by the subdivision. As such, a new three (3) bedroom disposal system would be developed.[21] The location of the new septic tanks and leach lines are shown on the revised site plan. As noted above, DEH has reviewed and approved the design.

Pursuant to subsection 20.516.015(B), approval of the proposed development is contingent upon an adequate water supply during dry summer months. Demonstration of proof of water supply must be made in accordance with DEH's Coastal Groundwater Development Guidelines, which requires that testing must occur within the dry season from August 20 to October 31. According to the guidelines, an adequate water supply is one (1) gallon per minute of production per dwelling unit. Accordingly, a seventeen (17) hour proof of water test was conducted on the existing well on August 23 and 24, 2022. The test found that the well produced 3.1 gallons per minute.[22]

Archaeological and Cultural Resources: MCC Chapter 22.12 and Coastal Element Policy 3.5-10 establishes regulations for archaeological resources. On May 30, 2023, the Planning & Building Services representative for the Mendocino County Archaeological Commission noted that the project should be referred to the Northwest Information Center at Sonoma State University (NWIC) for comment and scheduled for an Archaeological Commission meeting depending on NWIC comments. However, an Archaeological Survey Report was submitted with the application, so the application was not referred to NWIC. Instead, the application was scheduled for the July 12, 2023 Archaeological Commission meeting to review the Survey Report. The survey was conducted in 2021. No cultural resources were identified on the property as a result of the survey. The survey was accepted by the Commission at the July 12 meeting. Due to the negative findings of the survey and acceptance by the Archaeological Commission, the proposed development is not expected to result in any impacts to archaeological or cultural resources. Nevertheless,

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[20] See attachment R below

[21] Septic Permit No. ST27862, available on file at Mendocino County Division of Environmental Health.

[22] See attachment FF below

staff recommends that the "Discovery Clause" be adopted as a standard condition of approval to account for any unanticipated discovery of archaeological resources or human remains. The application was referred to three (3) local tribes, including the Cloverdale Rancheria, Redwood Valley Rancheria, and Sherwood Valley Band of Pomo Indians. No response was received.

Public Access: MCC section 20.528.010 and Coastal Element Policy 3.6-9 establishes Minimum Access Locations where an offer to dedicate an easement for public access shall be required as a condition of permit approval. As noted above, vertical public access to the shoreline has already been established along the southern boundary of the subject property as the Belinda Point Trail managed by the Mendocino Land Trust. The access was established through a condition of permit 1-92-212. The LCP Land Use Map does not identify any proposed public access in the project area.[23] Therefore, the provision of additional public access as a condition of this permit is not warranted.

Takings Analysis: The Fifth Amendment of the United States Constitution provides that private property shall not *"be taken for public use, without just compensation."* Article 1, Section 19 of the California Constitution provides that *"[p]rivate property may be taken or damaged for public use only when just compensation...has first been paid to, or into court for, the owner."*

Federal courts have identified four types of regulatory takings, including (1) permanent physical invasions, (2) denials of all economically beneficial use, (3) general regulatory takings in which the regulation goes too far, and (4) land use exactions (*Lingle v. Chevron U.S.A. Inc., 544 U.S 528, 548 (2005)*). For residential development of this property, the relevant types of regulatory takings include types (2) and (3).

Regulation that denies all economic use is governed by the test first established in the case of *Lucas v. South Carolina Coastal Council, 505 U.S 1003, 1015-16 (1992)* The Court has recognized that these cases are relatively rare because they are applicable only *"in the extraordinary circumstance when no productive or economically beneficial use of land is permitted"* or *"where the government has deprived a landowner of all economically beneficial uses"* or rendered the property *"valueless"*. In California, courts have followed the "valuation rule", where the use of the property that remains after regulation determines whether an owner has been deprived of economically beneficial use. In one case, the court held that an owner was not deprived of all use of their property when they could not demolish an existing building and build a new multistory office building, because they were not barred from remodeling the existing building (see *Terminals Equip. Co. v. City and County of San Francisco, 221 Cal. App. 3d 234 (1990)*).

Whether or not a taking would occur under the Lucas test is ultimately dependent on the type and extent of development that is proposed. In general, when County ESHA regulations are applied to the subject property, the only uses of the property that would be permitted within ESHA and/or ESHA buffers would be uses that are dependent on ESHA or that would not be considered "development" as defined in Section 20.308.035(D) (any "development" requires a Coastal Development Permit). For example, "Passive Recreation" could be considered a use that is dependent on ESHA and may not require "development", such as hiking, fishing, photography, nature study, etc.

If the County were to deny the proposed development, it may not result in a taking under the *Lucas* test because (1) the regulation would not deprive the owner of their right to exclude others from their land, (2) the regulation would not deprive the owner of their right to sell the property, (3) other economically beneficial, ESHA-dependent uses of the property may be possible, and (4) the property would retain economic value due to the presence of an existing residential cabin, access driveway, sheds, and related infrastructure. However, it is likely that very little economic value in the property would remain if the ability to establish a new septic system would were denied. As discussed above, the original septic system was impermissibly constructed within a road easement established by the prior subdivision. Therefore, denying the ability to construct an adequate septic system for the existing cabin could jeopardize the historical residential use of the cabin. Nevertheless, denying the ability to construct a septic system of the proposed size in addition to an expansion of the cabin and several other structures is unlikely to cause a regulatory taking within the meaning of the *Lucas* decision.

Even if the applicable regulations would not deprive the owners of all economically beneficial use, they may nonetheless go too far in placing a public burden on private owners. This category of regulatory taking is

[23] See attachment G below

governed by the case of *Penn Central Transportation Company v. City of New York, 438 U.S. 104 (1978)*. Though this case did not establish a rigid test for takings, it identified several factors of significance to determine whether a taking has occurred, including (1) the economic impact of the regulation on the landowner, (2) the extent to which the regulation interferes with distinct investment-backed expectations, and (3) the nature of the governmental action. In *Kavanau v. Santa Monica Rent Control Board, 16 Cal. 4th 761 (1997)*, the California Supreme Court listed ten (10) additional, nonexclusive factors that could be relevant to determine whether a taking would occur. The factors outlined in *Kavanau* need not be used as a checklist but applied only as appropriate. They include:

(1) Whether the regulation interferes with interests that are sufficiently bound up with the reasonable expectations of the claimant to constitute property for Fifth Amendment purposes.

(2) Whether the regulation affects the existing or traditional use of the property and thus interferes with the property owner's primary expectation.

(3) The nature of the State's interest in the regulation and, particularly, whether the regulation is reasonably necessary to the effectuation of a substantial public purpose.

(4) Whether the property owner's holding is limited to the specific interest the regulation abrogates or is broader.

(5) Whether the government is acquiring resources to permit or facilitate uniquely public functions such as government's entrepreneurial operations.

(6) Whether the regulation permits the property owner to profit and to obtain a reasonable return on investment.

(7) Whether the regulation provides the property owner benefits or rights that mitigate whatever financial burdens the law has imposed

(8) Whether the regulation prevents the best use of the land

(9) Whether the regulation extinguishes a fundamental attribute of ownership.

(10) Whether the government is demanding the property as a condition for the granting of a permit

To understand whether denial of the proposed development would constitute a taking, the County must analyze the project under the tests established by the *Penn Central* & *Kavanau* decisions. The first factor has to do with the economic impact of the regulation on the landowner.

As of 2022, the assessed value of the land alone is $720,000 and the value of existing buildings is $82,000. The value of the cabin alone is $77,000. Other assessed structures include an "outhouse?" at $2,000 and a "pump house" at $3,000. The "pump house" corresponds with Shed #2 on the revised site plan, while the "outhouse?" corresponds with Shed #1. Other assessed structures include the well and decks surrounding the cabin, which are both assessed at $0. According to the assessor, the cabin is 880 square feet in size, including a second-floor loft. According to the assessor, the sheds total 132 square feet. However, the site plan for the previously proposed development states that the sheds total 145 square feet, while the revised site plan states that the sheds total 142 square feet. The assessed square footage will be used for this analysis. Therefore, the assessed value of the cabin and sheds are approximately $87.50 and $37.88 per square foot, respectively. According to the revised site plan, the remodeled residence would total 1,546 square feet, including the second floor. The garage, outdoor kitchen, and water tank would total 640 square feet.

If the same dollar-per-square-foot value for the existing cabin is used for the remodeled cabin, the total value would be $135,275. If the same dollar-per-square-foot value for the existing sheds is used for the new garage, outdoor kitchen, and water tank, the total value would be approximately $24,243. According to the revised site plan, the total square footage of the property is 138,607. According to the site plan for the previously proposed development, the footprint of the existing cabin is 475 square feet. Subtracting the footprint of the existing cabin and sheds results in 138,000 square feet of "unimproved" land, or

approximately $5.22 per square foot. If the proposed development were built, the amount of "unimproved" land would be reduced to 137,000 square feet. Using the same dollar-per-square-foot value, the new value of land alone would be $715,140. When added to the estimated value of the remodeled cabin and accessory structures, the total value of the property after development would be $874,658. Therefore, ESHA regulations would prevent an estimated $72,658 increase in value, or 9.1% (not accounting for existing or proposed decks, parking areas, or septic system). Preventing such an increase in value does not rise to the level of a taking (see *Village of Euclid v. Ambler Realty Co., 272 U.S. 365, 384-85 (1926), William C Haas & Co. v. City and County of San Francisco, 605 F. 2d 1117, 1120 (9th Cir. 1979),* and *HFH, Ltd. v. Superior Court, 15 Cal. 3d 508, 512 (1975)*)[24]. Therefore, the first prong of the *Penn Central* test (the economic impact of the regulation on the landowner) has not been met.

The second prong of the *Penn Central* test is the extent to which the regulation interferes with distinct investment-backed expectations. Therefore, the owner's "investment-backed expectations" must be determined. Information that the County reviews to determine the investment-backed expectations include but are not limited to the purchase price paid for the property, the costs associated with ownership of the property for the last five (5) years, and comparable neighboring properties of similar size, amount of development, and development limitations.

When the owners purchased the property in 2021, several single-family residences had been built in the surrounding area. The owners purchased the property for $802,000 in 2021. As of 2023, the owners had paid $9,112.14 in property tax and $54,479.58 to develop the property since that time.[25]

The County staff report associated with the previously proposed development referenced five (5) comparable neighboring properties to determine the investment-backed expectations, including 33451 Pacific Way (APN 017-320-06), 17410 Ocean Drive (APN 017-320-46), 33401 Pacific Way (APN 017-320-34), 34550 Sunset Way (APN 017-060-11), and 16960 Ocean Drive (APN 017-330-03). However, correspondence from CCC staff notes that *"five unrelated recent nearby developments are presented in the staff report as comparable developments, however four of the examples demonstrate avoidance of developing within ESHA and adherence to the minimum required ESHA buffer setbacks. Only one example authorized development to avoid the potential for a regulatory taking, but allowed for less development than on the subject property, and on a previously undeveloped parcel."* This suggests that the appropriate neighboring properties to evaluate within a takings analysis would be those that also involved the avoidance of a regulatory taking within their respective permits and those that contained existing development at the time of permitting. However, there are no properties that meet both criteria. The only neighboring property that involved a takings analysis within its respective permit history is 34550 Sunset Way, which permitted development of a previously undeveloped property.

Although the neighboring properties discussed in the prior staff report are considered "unrelated", their permit history provide context for the assertion that the owners' investment-backed expectations could not have included the ability to develop a property constrained by sensitive habitats. As noted in CCC staff correspondence, "*when the applicant purchased the property in 2021, there was ample evidence that development of a single-family residence on the parcel might not be possible due to botanical constraints*".

In 2021, 33451 Pacific Way (APN 017-320-06) contained a 3,420 square foot, two-story, single-family residence, a 643 square foot attached garage, a 180 foot driveway, 5,000 gallon water tank, and 162 square-foot cabin originally constructed in the 1950s that had been converted into a "tearoom", all of which were authorized by CDP 40-03. A botanical survey was conducted for CDP 40-03, which found that the site was vegetated by a Closed Cone Coniferous Forest (Northern Bishop Pine Forest), a small unnamed watercourse and associated riparian plant community, Bluff Scrub plant community on the edge of the bluff, and a small area of Coastal Terrace Prairie. Pacific Reedgrass (*Calamagrostis nutkaensis*) was observed on the site. At that time, the Northern Bishop Pine Forest and other plant communities were not considered ESHA. The riparian area was the only area considered ESHA. A 50 foot buffer was established, and the development was located outside of the buffer. When the subject owners purchased 33389 Pacific Way in 2021, the property at 33451 Pacific Way also contained a wooden fence, gate, and 3,500 square feet of repaved driveway authorized in CDP_2016-0040. No additional biological surveys were completed for

[24] In *Euclid v. Ambler*, the court ruled that an alleged 75% diminution in value did not result in a taking. In *William C. Haas & Co. v San Francisco*, the court rejected an alleged 95% diminution in value. In *HFH v Superior Court*, the court rejected an alleged 81% diminution in value.

[25] See attachment HH below.

CDP_2016-0040 and no additional ESHA were identified.[26]

In 2021, 17410 Ocean Drive (APN 017-320-46) contained a 2,931 square foot, two-story single-family residence authorized by CDP 31-01. No biological study was conducted for CDP 31-01 beyond the surveys conducted for Minor Subdivision MS 44-88, which created the parcel. Surveys were conducted in 1986, 1987, and 2001. The surveys identified riparian ESHA and a population of rare Mendocino coast paintbrush. "Bishop pine forest overstory" was present but was not considered ESHA.[27]

In 2021, 33401 Pacific Way (APN 017-320-34) contained a 1,995 square foot single-family residence, 144 square foot covered porch, 200 square foot deck, 572 square foot detached garage, and driveway of unknown size. CDP 9-2011 authorized a 1,120 square foot addition to an existing 875 square foot single-family residence along with construction of the other structures. A floristic survey and ESHA study were completed for the project, which found riparian vegetation associated with a creek along the western boundary of the property and an area of Bishop pine trees. The riparian area was considered an ESHA, but the biologist determined that the area of Bishop pine trees did not meet the criteria for ESHA as Bishop Pine Forest. However, the report noted that an established Northern Bishop Pine Forest was present off the property to the south and west.[28]

Based on the permit history of surrounding properties and associated biological studies, the applicants could have inferred that Bishop Pine Forest and Pacific Reedgrass Meadow may be present on the subject property. Despite these communities not being considered ESHA at the time of development of adjacent properties, there are several examples of both having been considered ESHA for other properties prior to 2021, such as CDP_2020-0012 (Jacobson) and CDP_2018-0014 (Harrison).[29] The extent to which each of these plant communities covered the subject property was unknown until the Natural Resources Study was completed in 2022, but there was a reasonable possibility that ESHA would be present on the site. Therefore, the owners' investment-backed expectations could not have included the entirety of the previously proposed development. However, without knowing the full extent of ESHA coverage, the owners' investment-backed expectations could have included the assumption that some of the disturbed areas surrounding the existing cabin may be greater than fifty (50) feet from ESHA, or that the existing cabin could be repaired or demolished and replaced in the same location.

CCC staff correspondence also noted that the County staff report *"did not demonstrate why the applicant did not reasonably expect to build an alternative development proposal consisting of an addition to the cabin in similar proportion as that which the County permitted at 33401 Pacific Way; this previous development may be a more appropriate comparable development to establish the reasonableness of the applicant's investment backed expectation and better protect ESHA."* This suggests that 33401 Pacific Way is an appropriate neighboring property to include within a takings analysis despite not involving the avoidance of a regulatory taking within its respective permit history. 33401 Pacific Way is similar to 33389 Pacific Way because it is 2.5± acres in size, contains ESHA, contains Bishop pine trees, contained existing structures at the time of issuance of CDP 9-2011, and is within 1/4 mile of the subject property. The following table compares the existing and proposed development of 33389 and 33401 Pacific Way:

Property	Structure Type	Square Footage
33401 (Existing)	Residence	875
33401 (Proposed)	Residence	1,995
33389 (Existing)	Residence	880
33389 (Proposed)	Residence	1,546
33401 (Existing)	Garage	0
33401 (Proposed)	Garage	572
33389 (Existing)	Garage	0
33389 (Proposed)	Garage	440

[26] Permits available on file at Planning & Building Services.
[27] Id.
[28] Id.
[29] Id.

33401 (Existing)	Decks/Porches	0
33401 (Proposed)	Decks/Porches	344
33389 (Existing)	Decks/Porches	297
33389 (Proposed)	Decks/Porches	445
33401 (Existing)	Other Structures	0
33401 (Proposed)	Other Structures	0
33389 (Existing)	Other Structures	132
33389 (Proposed)	Other Structures	332

CDP 9-2011 authorized 2,036 square feet of additional improvements. CDP 9-2011 also authorized *"extending driveway 20' x 20' with gravel surface to proposed garage, relocate septic system to area east of the proposed garage and relocate propane tank to north of the proposed garage."* If 33401 Pacific Way is a more appropriate comparable development to establish the reasonableness of the owners' investment-backed expectation, then the revised development would fall within the owners' investment-backed expectations because the revised development would involve 1,454 square feet of additional improvements. Similarly, the revised development would expand the gravel driveway to accommodate a gravel turnaround and would replace the septic system in a new location. These elements are part of the owners' investment-backed expectations because the turnaround is required by CAL FIRE for adequate emergency vehicle access and the new septic system is necessary to allow continued use of the residence. Therefore, denial of the revised development would interfere with the applicant's investment-backed expectations.

The third prong of the *Penn Central* test is the nature of the governmental action. As noted in Mendocino County Code Section 20.496.010, the purpose of ESHA regulation is to ensure that environmentally sensitive habitat areas, which constitute significant public resources, are protected for both the wildlife inhabiting them as well as the enjoyment of present and future populations. Per Section 20.496.010, ESHA include *"habitats of rare and endangered plants and animals."* As noted in Public Resources Code Section 30001, the Coastal Zone *"is a distinct and valuable natural resource of vital and enduring interest to all the people and exists as a delicately balanced ecosystem"*, and that *"it is necessary to protect the ecological balance of the coastal zone and prevent its deterioration and destruction."* This represents the public interest in ESHA regulations. It is reasonably necessary for Sensitive Natural Communities, such as Bishop pine Forest, to be considered ESHA because these plant communities have been identified as rare or endangered by the California Department of Fish & Wildlife (CDFW), and their protection preserves the biodiversity of the coastal zone. Therefore, the nature of County ESHA regulation is legitimate.

Per factor nine (9) of the *Kavanau* test, ESHA regulations do not interfere with the owners' basic rights to (1) use the property within legal constraints, such as living in or renting the existing cabin, (2) transfer ownership of the property, (3) exclude others, or (4) destroy the property within legal constraints. Per factor two (2) of the *Kavanau* test, ESHA regulations do not interfere with the traditional residential use of the property and the primary expectation that the existing cabin may be used as a residence.

Per factor seven (7) of the *Kavanau* test, ESHA regulations do not permit the property owner to profit and obtain a reasonable return on investment because the entirety of the property is within ESHA or ESHA buffers and only ESHA-dependent uses are allowed within ESHA or ESHA buffers. The only ESHA-dependent use which is permitted in the Rural Residential zoning district is Passive Recreation, which is defined as *"leisure activities that do not require permits pursuant to this Division nor constitute "development" as defined in Section 20.308.035(D), and that involve only minor supplementary equipment"*. The only land improvements that would allow the owners' to profit or obtain a return on investment while avoiding the application of ESHA regulations would be those that do not require a Coastal Development Permit or the disturbance of any land within ESHA or ESHA buffers, such as repairing the existing cabin structure.

Alternatives Analysis: The Coastal Act only instructs the County to construe the applicable Coastal Act policies in a manner that will avoid a regulatory taking. It does not authorize the County to ignore the policies of the Coastal Act regarding this application. Therefore, the County must approve and site a development that is maximally consistent with the Local Coastal Program while simultaneously avoiding a taking. To accomplish this, the County must consider alternatives to the proposed development, including the "no project" alternative. When commenting on the previously proposed development, CCC staff

correspondence noted that *"the applicant should propose, and the County should address in its findings alternative designs that would be less environmentally damaging"*, such as: *"(1) redeveloping the existing structure, (2) alternative house sizes, including an alternative house size that is no larger than the average house size of similarly-constrained property in the surrounding neighborhood, (3) alternative designs that minimize the footprint of the house (and any proposed JADU) on the ground by utilizing the same footprint as the existing cabin and adding an upper story or stories, and (4) alternative floor plans that minimize encroachment into ESHA and ESHA buffer areas"*.

To this end, the agent previously retained by the applicant submitted an Alternatives Analysis that contemplates several different modifications to the previously proposed development.[30] However, the Alternatives Analysis ruled out each of the alternatives recommended by CCC staff. In County staff's opinion, the Alternatives Analysis did not provide legitimate reasons to rule out the alternatives recommended by CCC staff because the Analysis does not explain why the alternatives recommended by CCC staff would result in a regulatory taking. In any case, the applicant has submitted a revised development which presents an alternative that incorporates the recommendations of CCC staff.

The "no project" alternative would likely result in a regulatory taking because it would interfere with the owners' investment-backed expectations, which include the ability to maintain the existing cabin's historical residential use through the installation of a new septic system that does not interfere with easements and the ability to redevelop the existing cabin in a similar fashion to what was permitted at 33401 Pacific Way.

The elements of the previously proposed project that contribute to ESHA impacts include development associated with the leach field, replacement area, septic lines, septic pump chamber, septic tank, main residence, driveway, and parking area. Modifications to these elements that would reduce impacts to ESHA could include (1) reducing the square footage of the elements, (2) changing the orientation of the elements, (3) eliminating the elements, (4) changing the location of the elements, or (5) modifying the design of the elements.

The revised development reduces environmental damage because (1) the septic tank and septic pump chamber are relocated outside the literal extent of ESHA in an area that would reduce the length of septic lines, (2) the new residence, patio, and decks are no longer proposed, (3) the driveway and turnaround are modified such that they remain outside the literal extent of ESHA, and (4) rather than convert the existing cabin into an ADU, the existing cabin is remodeled and expanded to include a second floor, additional rooms, and an attached garage outside the literal extent in ESHA. Overall, the revised development reduces the amount of permanent ESHA impacts from 3,190 to zero (0) square feet and the amount of total building footprint from 4,695 to 2,052 square feet, which is below the average size of building footprints of similarly constrained property in the surrounding neighborhood (33401 Pacific Way, 2,911 square feet). This represents the least environmentally damaging alternative because further reductions in square footage or elimination of elements would further reduce the development footprint below the average house size of similarly constrained property, thus interfering with the owners' investment-backed expectations and potentially resulting in a regulatory taking. Changing the orientation or location of elements would not reduce environmental damage because the elements are already located outside the literal extent of ESHA (except for the leach field) and ESHA buffers cannot be avoided.

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. However, CCC staff correspondence asserts that *"the fact that the development cannot be found consistent with ESHA policies, along, should be considered an unavoidable significant adverse impact on ESHA that requires a statement of overriding considerations which is only possible through preparation of an environmental impact report (EIR) under CEQA"*. County staff disagrees with this assertion, particularly when considering the revised development. CEQA Guidelines Appendix G, section IV poses the following question as a threshold in determining whether a project would have a significant effect on the environment: *"Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?"*. The revised development continues

[30] See attachment GG below.

to conflict with Mendocino County LCP policies regarding ESHA, specifically the buffer requirements of MCC section 20.496.020. However, the revised development does not conflict with this requirement to the extent that it would have a significant adverse effect on the environment when mitigation measures are incorporated. As noted in the *Environmentally Sensitive Habitat and Other Resource Areas* section above and the findings below, the project conflicts with LCP regulations because it does not meet the buffer setback requirements and is not a use that is allowed within ESHA or ESHA buffers, not because the project would significantly degrade ESHA. Although the purpose of the buffer requirement is to protect ESHA, it does not follow that a project's inability to meet the minimum buffer requirements necessarily means that the ESHA will be degraded to the extent that a significant impact would occur within the meaning of CEQA. In this case, the ESHA would not be significantly degraded because the revised development is located outside the literal extent of ESHA (except for the leach field, which would cause temporary impacts to the ESHA) and mitigation measures would be incorporated as described in the *Environmentally Sensitive Habitat and Other Resource Areas* section above.

PROJECT FINDINGS & CONDITIONS OF APPROVAL

Staff recommends, pursuant to the provisions of Chapter 20.532 and Chapter 20.536 of the Mendocino County Code, that the Coastal Permit Administrator approve the proposed project, adopts the Mitigated Negative Declaration, and adopt the following findings and conditions.

FINDINGS:

1. Pursuant to MCC Section 20.532.095(A)(1), the proposed project to construct additions to a single-family residence consisting of a new second floor, enlarged bedrooms, an attached garage, and decks; a new water storage tank on a concrete slab; a new outdoor kitchen area; and a new septic system is not in conformity with the certified local coastal program (LCP). The proposed development does not comply with Coastal Element Policies and Coastal Zoning Code regulations related to Environmentally Sensitive Habitat Areas (ESHA) because the entirety of the property is within fifty (50) feet of at least one (1) ESHA and the proposed residential and accessory uses are not dependent on ESHA. Therefore, the proposed development would not meet ESHA buffer requirements and is not a permitted use within ESHA buffers. However, denial of the proposed development on the basis of its inconsistency with ESHA regulations is likely to result in a regulatory taking because it would interfere with the property owners investment-backed expectations, which include the ability to construct additions to the cabin in a manner that would not exceed the average size of building footprints of similarly constrained property in the surrounding neighborhood. Public Resources Code Section 30010 forbids the denial of a permit *"in a manner which will take or damage private property for public use, without the payment of just compensation therefor."* Therefore, the County must approve a development that would simultaneously avoid a regulatory taking and maximize consistency with the LCP. The proposed development maximizes consistency with the LCP by siting all development outside the literal extent of ESHA (except for the new leach lines which must be located within ESHA due to spatial constraints) and by incorporating mitigation measures to avoid significant degradation of adjacent ESHA, including the removal of invasive vegetation, natural recruitment of native seedlings, deed restricting the property to prevent future impacts to ESHA, installation of symbolic fencing along the edge of ESHA to avoid encroachment, and restoration of understory vegetation. The proposed development is otherwise consistent with applicable policies and regulations of the LCP because it would continue a principal permitted use and accessory uses that would have no impact on agricultural viability of the property, would involve minimal grading that would comply with recommendations of a Geotechnical Investigation, would be located outside of the established fifty (50) foot setback, would not be located within a Highly Scenic Area, would be provided with adequate water supply and septic capacity through an existing well that produces approximately three (3) gallons per minute and a new septic system approved by the Environmental Health Division, would have no impact on archaeological or cultural resources, and would be adjacent to an existing public access easement; and

2. Pursuant to MCC Section 20.532.095(A)(2), the proposed development to construct additions to a single-family residence consisting of a new second floor, enlarged bedrooms, an attached garage, and decks; a new water storage tank on a concrete slab; a new outdoor kitchen area; and a new septic system will be provided with adequate utilities, access roads, drainage, and other necessary facilities. The proposed development would be provided with water supply through an existing well that produces approximately three (3) gallons per minute during dry summer months, a new septic system that has

been approved by the Environmental Health Division, an existing gravel driveway connected to a public road through a roadway easement established by a prior subdivision, a turnaround of adequate size to allow access for emergency vehicles, and drainage via sheet flow across the property and through a stream that outlets at the Pacific Ocean; and

3. Pursuant to MCC Section 20.532.095(A)(3), the proposed development to construct additions to a single-family residence consisting of a new second floor, enlarged bedrooms, an attached garage, and decks; a new water storage tank on a concrete slab; a new outdoor kitchen area; and a new septic system 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 property is within the Rural Residential zone, which is intended to allow residential uses that create minimal impact on agricultural viability. The property has no agricultural viability because it is entirely within ESHA or ESHA buffers. Therefore, the proposed development would have no impact on agricultural viability. Pursuant to section 20.376.010, Family Residential Single-Family is a principal permitted use in the RR:5 [RR:2] district. Pursuant to section 20.376.040, the proposed development must be located at least twenty (20) feet from all property lines. The proposed development would meet this requirement. Pursuant to section 20.376.045, the building height limit is twenty-eight (28) feet above natural grade because the property is not within a Highly Scenic Area. The remodeled residence would be twenty-five feet and seven inches (25'-7") above grade. Pursuant to section 20.376.065, the maximum lot coverage for the property is fifteen percent (15%), or 20,791 square feet. The total square footage of the remodeled residence, decks, garage, outdoor kitchen, water tank, existing sheds, septic system, and driveway turnaround would be approximately 9,583 square feet (0.22 acres); and

4. Pursuant to MCC Section 20.532.095(A)(4), the proposed development to construct additions to a single-family residence consisting of a new second floor, enlarged bedrooms, an attached garage, and decks; a new water storage tank on a concrete slab; a new outdoor kitchen area; and a new septic system, if completed in compliance with the conditions of approval, will not have any significant adverse impacts on the environment within the meaning of the California Environmental Quality Act. 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; and

5. Pursuant to MCC Section 20.532.095(A)(5), the proposed development to construct additions to a single-family residence consisting of a new second floor, enlarged bedrooms, an attached garage, and decks; a new water storage tank on a concrete slab; a new outdoor kitchen area; and a new septic system will not have any adverse impacts on any known archaeological or paleontological resource. On May 30, 2023, the Planning & Building Services representative for the Mendocino County Archaeological Commission noted that the project should be referred to the Northwest Information Center at Sonoma State University (NWIC) for comment and scheduled for an Archaeological Commission meeting depending on NWIC comments. However, an Archaeological Survey Report was submitted with the application, so the application was not referred to NWIC. Instead, the application was scheduled for the July 12, 2023 Archaeological Commission meeting to review the Survey Report. The survey was conducted in 2021. No cultural resources were identified on the property as a result of the survey. The survey was accepted by the Commission at the July 12 meeting. Due to the negative findings of the survey and acceptance by the Archaeological Commission, the proposed development is not expected to result in any impacts to archaeological or cultural resources. Nevertheless, staff recommends that the "Discovery Clause" be adopted as a standard condition of approval to account for any unanticipated discovery of archaeological resources or human remains. The application development was referred to three (3) local tribes, including the Cloverdale Rancheria, Redwood Valley Rancheria, and Sherwood Valley Band of Pomo Indians. No response was received; 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 to construct additions to a single-family residence consisting of a new second floor, enlarged bedrooms, an attached garage, and decks; a new water storage tank on a concrete slab; a new outdoor kitchen area; and a new septic system. The proposed development would have no impact

on solid waste or public roadway capacity because it would not increase the dwelling density of the property; and

7. Pursuant to MCC Section 20.532.095(B)(1), the proposed development is in conformity with the public access and public recreation policies of Chapter 3 of the Coastal Act and the Coastal Element of the General Plan. MCC section 20.528.010 establishes Minimum Access Locations where an offer to dedicate an easement for public access shall be required as a condition of permit approval. Vertical public access to the shoreline has already been established along the southern boundary of the subject property as the Belinda Point Trail managed by the Mendocino Land Trust. The access was established through a condition of permit 1-92-212. The LCP Land Use Map does not identify any proposed public access in the project area. Therefore, the provision of additional public access as a condition of this permit is not warranted; and

8. Pursuant to MCC Section 20.532.100(A)(1)(a), the identified ESHA will not be significantly degraded by the proposed development. No permanent impacts to ESHA would occur because development would be located outside the literal extent to ESHA, except for the leach field. Some temporary impacts would occur due to installation of the leach field, but tree and shrub removal would not be necessary because the leach lines are flexible and can go around existing vegetation. Development would occur within ESHA buffers, which could have negative impacts on the adjacent ESHA, such as noise, pollution, or other human disturbance, wildlife movement, preventing a transition zone, or preventing the adjacent ESHA from expanding into buffer areas. However, the existing cabin is already located within buffer areas and, as such, wildlife that utilizes adjacent ESHA are likely adapted to human activity. In addition, mitigation measures would be incorporated to minimize temporary impacts and impacts to buffers, such as the installation of symbolic fencing along the edge of ESHA to prevent human encroachment and the removal of non-native, invasive vegetation to promote regeneration of native ESHA; and

9. Pursuant to MCC Section 20.532.100(A)(1)(b), there is no feasible less environmentally damaging alternative to the proposed development. The proposed development is smaller than the average development footprint of similarly constrained neighboring parcels. As such, further reductions in the building footprint would likely result in a regulatory taking. All feasible project features would be located outside the literal extent of ESHA, but the entire property is within ESHA buffers. Development would be attached to, or clustered around, the existing cabin. The leach field must be located within the proposed location due to soil profiles, the lack of space available outside of ESHA, and required setbacks from the existing well; and

10. Pursuant to MCC Section 20.532.100(A)(1)(c), all feasible mitigation measures capable of reducing or eliminating ESHA impacts have been adopted, including requiring the recordation of a deed restriction that restricts future development, pre-construction surveys for special-status wildlife species, contractor training, invasive plant species removal, active management of the Bishop pine forest, including understory enhancement, installation of low symbolic fencing along the edge of ESHA, pathogen spread minimization, fuel load reduction, monitoring, and reporting.

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/or use of the property in reliance on such permit has been initiated prior to its expiration. Such permit vesting shall include approved permits associated with this project (i.e. building permits, septic permits, well permits, etc.) and physical construction in reliance of such permits, or a business license demonstrating establishment of a use proposed under this project.

2. 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.

3. 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.

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. 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.

7. 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.

8. 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.

9. Conditions approving this permit shall be attached to or printed on any building permit application and shall be a part of on-site construction drawings.

10. Best Management Practices (BMPs) such as straw bales, fiber rolls, and/or silt fencing structures shall be employed to minimize erosion resulting from construction and to avoid runoff into sensitive habitat areas. Construction fencing shall be utilized to protect sensitive habitat areas. Ground disturbance shall be limited to the minimum necessary. Any staging area shall be clearly marked and located in existing disturbed areas.

11. 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 $3,018.75 or current fee shall be made payable to the Mendocino County Clerk and submitted to the Department of Planning and Building Services within five (5) days of the end of any appeal period. Any waiver of the fee shall be on a form issued by the 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 applicant has the sole responsibility to ensure timely compliance with this condition.

12. **Prior to the issuance of any building permit associated with this Coastal Development Permit, the permittee, as landowner, shall provide evidence of or execute and record a deed restriction, in a form

and content acceptable to the Coastal Permit Administrator and County Counsel, which shall provide that:

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 attorney's fees and costs of the suit) arising out of the design, construction, operation, maintenance, existence or failure of the permitted project. Including, without limitation, all claims made by any individual or entity or arising out of any work permitted in connection with the permitted project; and

c. The landowner agrees that any adverse impacts to the property caused by the permitted project shall be fully the responsibility of the applicant; 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 landowner 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 ocean before they can be removed from the blufftop, the landowner shall remove all recoverable debris associated with these structures from the beach and ocean and lawfully dispose of the material in an approved disposal site. The landowners shall bear all costs associated with such removal; and

f. Future use of the property within Environmentally Sensitive Habitat Areas (ESHA) or ESHA buffers shall be limited to those resource-dependent uses allowed within ESHA or ESHA buffers as outlined in Coastal Zoning Code Section 20.496.020, as may be amended from time to time, except for the following types of development:

    i. Routine maintenance and repairs of the existing residential use within the development footprint and existing structure footprint(s).

    ii. Removal of non-native vegetation.

    iii. Planting native vegetation.

    iv. Vegetation clearance as required by CAL FIRE.

    No future development, as defined in Coastal Zoning Code Section 20.308.035(D), may occur within these areas without issuance of a Coastal Development Permit Amendment or a subsequent Coastal Development Permit.

g. 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.

13. In accordance with Mendocino County Code Section 20.504.035, any exterior lighting installed as part of the project shall conform to the following standards:

a. No light or light standard shall be erected in a manner which exceeds either the height limit designated in this Division for the zoning district in which the light is located or the height of the closest building on the subject property, whichever is the lesser.

b. Where possible, all lights, whether installed for security, safety, or landscape design purposes, shall be shielded or shall be positioned in a manner that will not shine light or allow light glare to exceed the boundaries of the parcel on which it is placed.

c. Security lighting and flood lighting for occasional and/or emergency use shall be permitted in all areas.

d. Minor additions to existing night lighting for safety purposes shall be exempt from a Coastal Development Permit.

e. No lights shall be installed so that they distract motorists.

14. In accordance with Mendocino County Code Chapter 16.04, the existence of an abandoned well is prohibited. A well is considered "abandoned" or permanently inactive if it has not been used for one year unless the owner demonstrates intention to use the well again. In accordance with Section 24400 of the California Health and Safety Code, the well owner shall properly maintain an inactive well as evidence of intention for future use in such a way that the following requirements are met:

    a. The well shall not allow the impairment of quality of water within the well and groundwater encountered by the well.

    b. The top of the well or well casing shall be provided with a cover that is secured by a lock or by other means to prevent its removal without the use of equipment or tools, to prevent unauthorized access, to prevent a safety hazard to humans and animals, and to prevent illegal disposal of wastes in the well. The cover shall be watertight where the top of the well casing or other surface openings to the well are below ground level, such as in a vault or below known levels of flooding. The cover shall be watertight if the well is inactive for more than five consecutive years. A pump motor, angle drive or other surface feature of a well, when in compliance with the above provisions, shall suffice as a cover.

    c. The well shall be marked so as to be easily visible and located and labeled so as to be easily identified as a well.

    d. The area surrounding the well shall be kept clear of brush, debris, and waste materials.

15. The proposed development shall comply with the recommendations contained in the Geotechnical Investigation dated May 24, 2022.

16. The applicant shall comply with those recommendations in the California Department of Forestry and Fire Protection Conditions of Approval (CAL FIRE #30-23) or other alternatives acceptable to the Department of Forestry and Fire Protection. Prior to final inspection of the building permit for the single-family residence, written verification shall be submitted from the Department of Forestry and Fire Protection to the Department of Planning and Building Services that this condition has been met to their satisfaction.

17. **A Sonoma tree vole survey shall occur within two weeks of construction. If tree vole nests are found in trees, the California Department of Fish and Wildlife shall be immediately notified, and steps shall be taken to protect Sonoma tree voles present per California Department of Fish and Wildlife requirements. Should tree voles be found, project commencement shall not occur until the California Department of Fish and Wildlife gives clearance.

18. **Within two weeks prior to any ground disturbance, project contractors will be trained by a qualified biologist in the identification of the Northern red-legged frog. Construction crews will begin each day with a visual search around all stacked or stored materials, as well as in and near the stream corridor and any pools or present water, to detect the presence of Northern red-legged frog. If a Northern red-legged frog is detected, construction or demolition crews cease all ground disturbing activity within 100 feet and will contact the California Department of Fish and Wildlife or a qualified biologist who will provide assistance. Ground disturbing activities within 100 feet will be allowed to proceed after clearance is given from CDFW and/or the qualified biologist. If a rain event occurs during the construction period, all construction-related activities will cease for a period of 48 hours after the rain stops. Prior to resuming construction or demolition activities, trained construction crew member(s) will examine the site for the presence of Northern red-legged frog. If no Northern red-legged frogs are found, construction activities may resume.

19. **Ground disturbance shall be limited to impacts necessary to accommodate the development. If feasible, ground disturbance activities shall occur outside of the summer season, when bumblebees are most active. If ground disturbance must occur during the summer, bumblebee surveys shall occur within two weeks prior to ground disturbance, by a biologist qualified to identify special status bumblebees, and the survey results submitted to the California Department of Fish and Wildlife for approval prior to ground disturbance. If special status bumblebees are found, the California Department of Fish and Wildlife will be consulted for avoidance measures and clearance. To the extent feasible, flowering native vegetation that could provide forage for bumblebees shall be retained at the site. Although bumblebees are generalists and will visit many diverse nectar plants, preferred food sources for Western Bumblebee include but are not limited to *Melilotus*, *Cirsium*, *Trifolium*, *Centaurea*, *Chrysothamnus*, and *Eriogonum* plant species (Koch, et al, 2012). Preferred food plants for Obscure bumblebee include but are not limited to *Baccharis*, *Cirsium*, *Lupinus*, *Lotus*, *Grindelia*, and *Phacelia* species (Koch 2012).

20. **The bird breeding season typically extends from February to August. Ideally, ground disturbing impacts will be done in the non-breeding season between September and January. If these activities cannot be done in the non-breeding season, a qualified biologist shall perform preconstruction breeding bird surveys within 14 days of the onset of ground disturbing impacts or clearing of vegetation. If active breeding bird nests are observed, no ground disturbance activities shall occur within a minimum 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 disturbances. As with birds, bat roost and hibernation sites can change from year to year, so pre-construction or demolition surveys are usually necessary to determine the presence or absence of bat roost sites in a given area. Pre-construction bat surveys do not need to be performed if ground disturbing work is conducted between September 1 and October 31, after young have matured and prior to the bat hibernation period. However, if it is necessary to disturb potential bat roost sites between November 1 and August 31, pre-construction surveys shall be conducted. Pre-construction bat surveys involve surveying trees, rock outcrops, and buildings subject to removal or demolition for evidence of bat use (guano accumulation, or acoustic or visual detections). If evidence of bat use is found, then biologists shall conduct acoustic surveys under appropriate conditions using an acoustic detector, to determine whether a site is occupied. If bats are found, a minimum 50-foot buffer should be implemented around the roost tree. Removal of roost trees should occur in September and October, or after the bats have left the roost.

21. **A visual survey for Western Pond Turtle shall occur between May and July, in the vicinity of the stream and surrounding areas, following the USGS protocol for Western Pond Turtle surveys. If western pond turtles are found, California Department of Fish and Wildlife shall be consulted for guidance on avoidance measures.

22. **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. Silt fencing and orange construction fencing shall be placed and maintained between construction/ground disturbance, and resource areas, to the extent feasible, for all areas where construction will occur within 50 feet of identified special status habitats as shown in Figure 15 within the *Preliminary Mitigation, Management, Monitoring, & Reporting Plan*. Equipment use, and equipment and materials storage and staging shall not occur within the fenced protection areas. Any soil stockpiles will need to be covered or otherwise stabilized to prevent dust impacts. Any bare soil created by the construction phase of the project shall be re-vegetated with native vegetation and/or native seed mixes appropriate to the site for soil stabilization. Low Impact Development techniques such as permeable paving should be utilized to minimize storm water runoff from new impervious surfaces where practical and feasible. Storm water runoff from new impervious surfaces shall be engineered such that it will not result in erosion issues or convey beyond the boundaries of the property.

23. **Landscaping on the parcel shall not include any invasive plants and shall consist of native plants compatible with the adjacent plant communities. Prior to entering the site, the tires and undercarriage

of heavy equipment shall be washed in order to remove any invasive plant seed that may be present.

24. **In accordance with the *Preliminary Mitigation, Management, Monitoring, & Reporting Plan* (MMRP) and the *Updated Project Biological Resources Impacts* letter dated June 18, 2025, the permittee shall:

    a. Remove invasive, non-native plants throughout the parcel. Target species are English ivy (*Hedera helix*), English holly (*Ilex aquifolium*) Scotch broom (*Cytisus scoparius*), Eucalyptus (*Eucalyptus globulus*), iceplant (*Carpobrotus edulis, Carpobrotus chilensis*), Himalayan blackberry (*Rubus armeniacus*), and montbretia (*Crocosmia*). Target non-native, invasive species will be reduced by 95% in the parcel at the end of the five (5) year monitoring period. Some iceplant and other invasive species are growing below the bluff edge and may not be feasibly removed. Invasive plants are only required to be removed in areas that are safely accessible. No new populations of these species or Eucalyptus should be present on the parcel.

    b. Encourage natural recruitment of Bishop pine seedlings. At least one Bishop pine seedling should germinate following natural recruitment implementation activities for each location implementation activities occurred (i.e., if three locations are treated, three trees should germinate). Each new tree should be protected in perpetuity or until natural death or becoming a hazard trees, as determined by a qualified professional. If overcrowding conditions occur due to natural recruitment, trees should be thinned appropriately to allow for the continuance of the most health tree. Each of the naturally occurring Bishop pine and native tree saplings identified prior to construction shall be avoided during construction and retained following construction completion to allow for natural recruitment of Bishop pine forest habitat.

    c. Keep fuel load at a safe level. No more than three (3) fallen trees or standing snags should be retained per acre. Trees, shrubs, and other vegetation should meet current standards for CAL FIRE defensible space, based on distance to constructed buildings. Between zero (0) and thirty (30) feet from structures, all dead plants, grass, and weeds should be removed. Dead or dry leaves and pine needles should be removed from the yard, roof, and rain gutters. Tree branches should be kept ten (10) feet away from chimneys and other trees. Between thirty (30) and one hundred (100) feet from structures, annual grass should be cut or mown to a maximum height of four (4) inches. Horizontal spacing between shrubs and trees should be created. Horizontal and vertical spacing between plants should be created. The amount of spacing will depend on how steep the slope is and the size of the plants. Vertical spacing between grass, shrubs, and trees should be created. Large trees need not be cut and removed if all of the plants beneath them are removed. This eliminates a vertical "fire ladder". Minimum vertical clearance beneath large trees should be six (6) feet.

    d. Prevent pathogen outbreaks by checking trees and vegetation on at least an annual basis for dying vegetation or signs of insect, fungus, or other pathogen infestation. Consult with the University of California Forest Advisor, CAL FIRE tree pathogen specialist, or a qualified tree pathogen specialist as necessary if pathogens are suspected. Findings shall be recorded in annual reports. The infestation shall be noted, detailing the location of the observation, description of the observation, special of what plant it is on, and how widespread that pathogen is. Pictures of the infestation shall be taken. Vegetation treatment and removal measures recommended by the advisor or specialist shall be administered.

    e. Monitor success criteria. The monitoring period shall begin when construction of the proposed development is complete. The monitoring period shall run for a minimum of five (5) years. Failure to meet and maintain the success criteria by the end of the monitoring period shall result in the requirement of one or more additional years of restoration, management, and monitoring until the success criteria are met. The saplings mapped in 2025 and any actively recruited trees shall be monitored.

    f. Produce an annual record of management activities and site performance. The report shall

be submitted to Planning & Building Services annually. The report shall include:

i. Name and contact information of person in charge of monitoring activities, and name and contact information of reporting party.

ii. Color photos of the management areas at the beginning and end of the reporting period.

iii. A summary of any issues encountered and management steps taken during the reporting period.

iv. Level of effort and methods used during that monitoring period to eradicate weeds, improve forest health and conditions for new Bishop pine seedling recruits, keep the fuel load reduced, develop and maintain a Bishop pine forest understory, and minimize disease spread.

v. Any new invasive plant species observed or evidence of pathogen presence.

vi. For active recruitment of tree saplings, include the total number of individuals observed, based on species, and a discussion of observations, including trees lost, tree health, and tree growth.

vii. For the removal of invasive species, include photo documentation and a brief description of the work conducted, including species targeted, when work was done, and an estimated area that is managed.

viii. Discussion about which success criteria are, and are not, on track and provide suggestions for adaptive management to achieve the success criteria.

25. **Invasive plant removal shall be implemented in accordance with the methods outlined in Section 5.1 of the *Preliminary Mitigation, Management, Monitoring, & Reporting Plan* (MMRP). Bishop pine seedling recruitment shall be implemented in accordance with the methods outlined in Section 5.2 of the MMRP.

26. **Native plants present in the herbaceous layer should be retained and maintained to the extent feasible while allowing for small clearings to encourage natural Bishop pine regeneration. Similarly, the native plants present in the shrub layer should be retained and maintained in a well-spaced manner for fire protection purposes as well as to encourage diversity and healthy natural Bishop pine regeneration. Tanoak (*Notholithocarpus densiflorus*), a valuable native tree/shrub found within the Bishop pine forest at the site, should be retained and maintained but can be very aggressive in areas where overstory canopy is removed and no longer holds this species in check. Care should be taken that tan oak does not overgrow and outcompete Bishop pines or become too dense and compromise fire safety. The need for some removal of young tan oaks over the years should be anticipated.

27. **Low, symbolic fencing shall be installed along the edge of ESHA to deter entry. Fencing shall be installed along the northern edge of the yard and around the existing clearing where the leach field is to be installed, as shown on the site plan dated June 16, 2025.

28. **The use of any rodenticide on the property is prohibited.

8/4/25
DATE

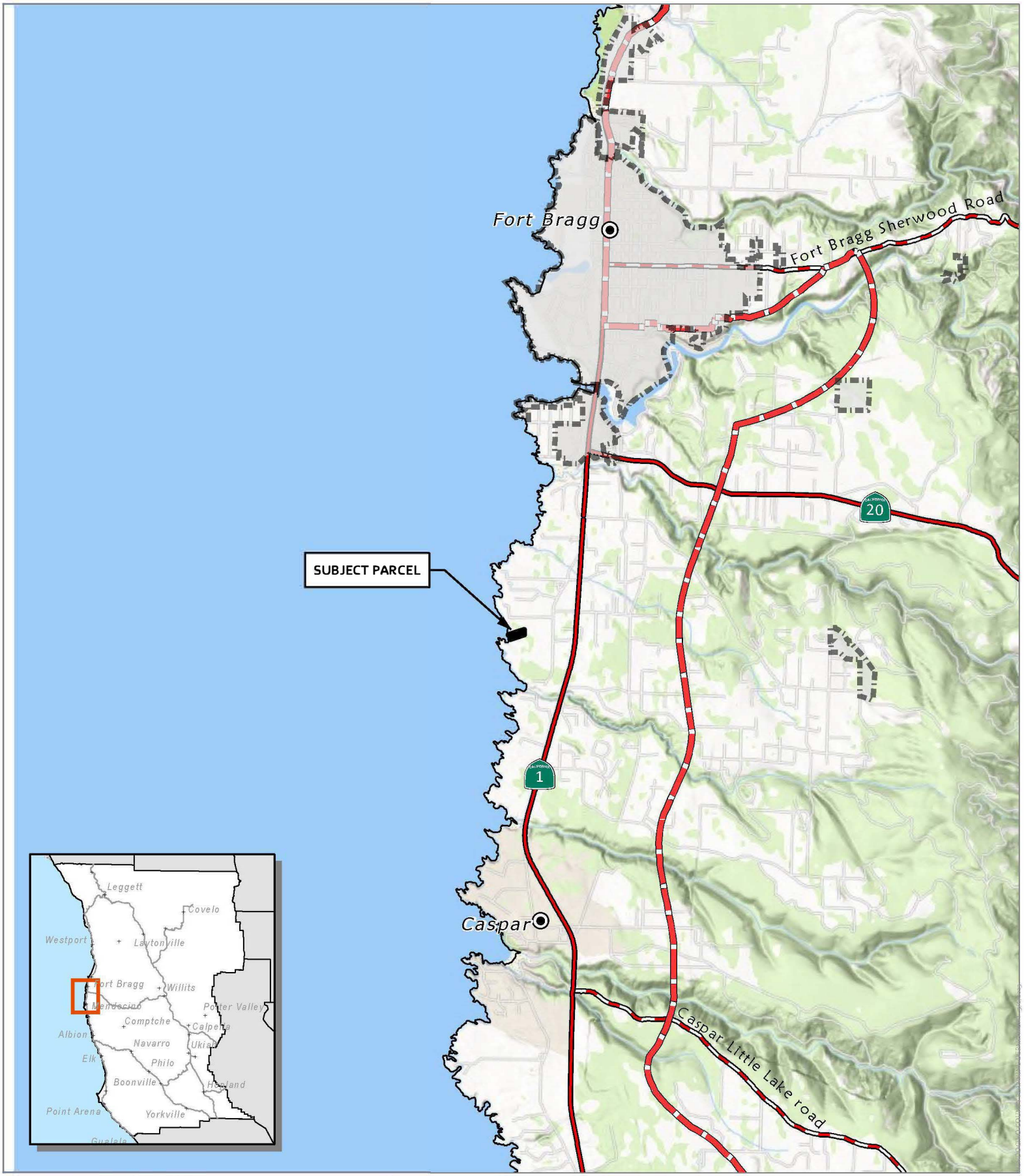
LIAM CROWLEY
PLANNER II

Appeal Period: 10 Days
Appeal Fee: $2,354.00

ATTACHMENTS:

A. Location
B. Aerial Imagery (Vicinity)
C. Aerial Imagery (Detail)
D. Topographic Map
E. Zoning
F. General Plan
G. LCP Land Use Map 14: Beaver
H. LCP Land Capabilities & Natural Hazards
I. LCP Habitats & Resources
J. Post LCP Certification & Appeal Jurisdiction
K. Adjacent Parcels
L. Fire Hazard Zones & Responsibility Areas
M. Wildland-Urban Interface
N. Flood & Tsunami Inundation Zones
O. Wetlands
P. MS4 Stormwater Areas
Q. Coastal Ground Water Resources
R. Highly Scenic Areas
S. Estimated Slope
T. Western Soil Classifications
U. Important Farmlands
V. DWR Crop Type
W. MS 59-89 Parcel Map
X. 1-92-212 Stipulated Boundary Map
Y. 1-92-212 Access Easement Map
Z. 1-91-60-A Deed Restriction Setback Map
AA. Revised Site Plan
BB. Revised Elevations and Floor Plans
CC. 06-18-2025 Biological Update Letter
DD. Cabin Affidavit
EE. Septic System Proposal Abstract
FF. Proof of Water Test Report
GG. CAL FIRE Conditions of Approval
HH. Takings Information
II. Title Report
JJ. Alternatives Analysis
KK. 03-15-2024 CCC Staff Correspondence
LL. Site Photos
MM. Geotechnical Investigation (ONLINE ONLY)
NN. Natural Resources Study (ONLINE ONLY)
OO. MMRP (ONLINE ONLY)

MITIGATED NEGATIVE DECLARATION AND INITIAL STUDY AVAILABLE ONLINE AT:
https://www.mendocinocounty.gov/departments/planning-building-services/boards-and-commissions/public-hearing-bodies/public-hearing-bodies



CASE: CDP 2023-0009
OWNER: DE ALBA, Jim & Denise
APN: 017-320-51
APLCT: Jim & Denise De Alba
AGENT: Tara Jackson, Wynn Coastal Planning
ADDRESS: 33389 Pacific Way, Fort Bragg

Major Towns & Places
City Limits
Coastal Zone Boundary
Highways
Major Roads

0 2,550 5,100 Feet
0 0.5 1 Miles
1:63,360

LOCATION

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



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Public Roads

Private Roads

0 250 500 Feet
0 0.045 0.09 Miles
1:6,000

AERIAL IMAGERY

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0 45 90 Feet
0 0.0075 0.015 Miles
1:1,066

AERIAL IMAGERY

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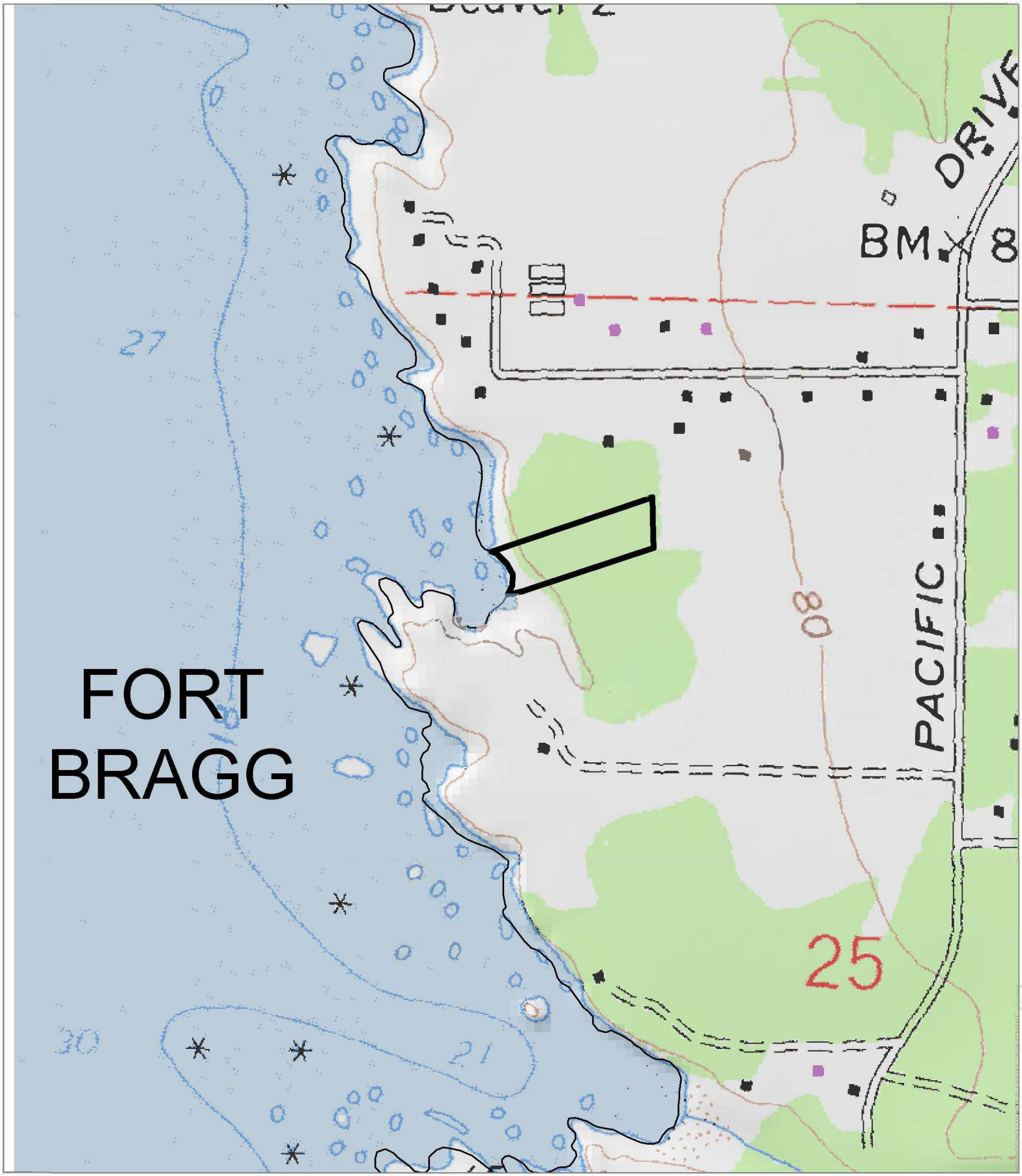
DO NOT USE THIS MAP TO DETERMINE LEGAL PROPERTY BOUNDARIES



CASE: CDP 2023-0009
OWNER: DE ALBA, Jim & Denise
APN: 017-320-51
APLCT: Jim & Denise De Alba
AGENT: Tara Jackson, Wynn Coastal Planning
ADDRESS: 33389 Pacific Way, Fort Bragg

Quadgrid

0 250 500 Feet
0 0.045 0.09 Miles

1:6,000
TOPOGRAPHIC MAP
CONTOUR INTERVAL IS 40 FEET

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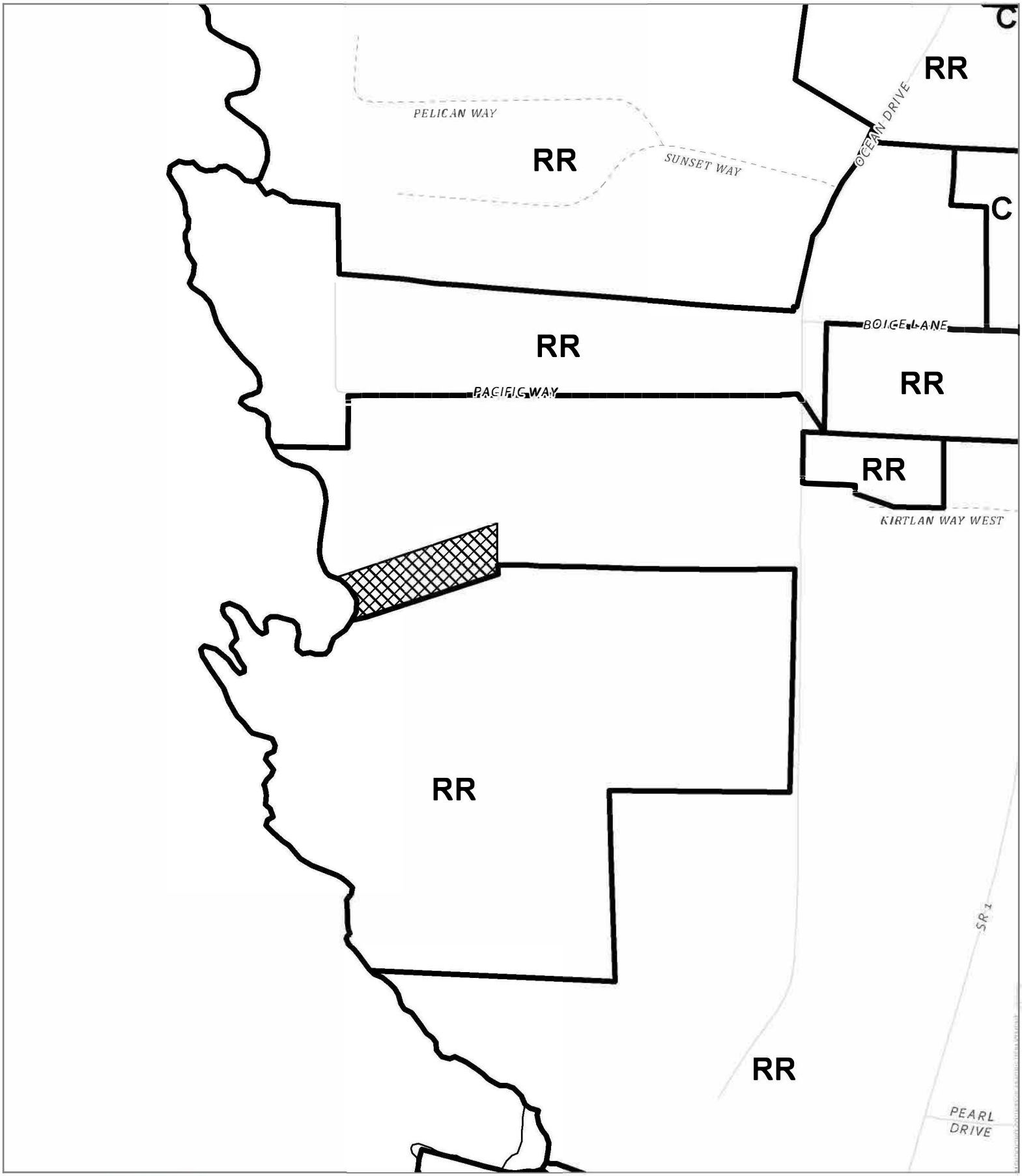

CASE: CDP 2023-0009
OWNER: DE ALBA, Jim & Denise
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Zoning Districts

Public Roads

0 250 500 Feet

0 0.045 0.09 Miles

1:6,000

ZONING

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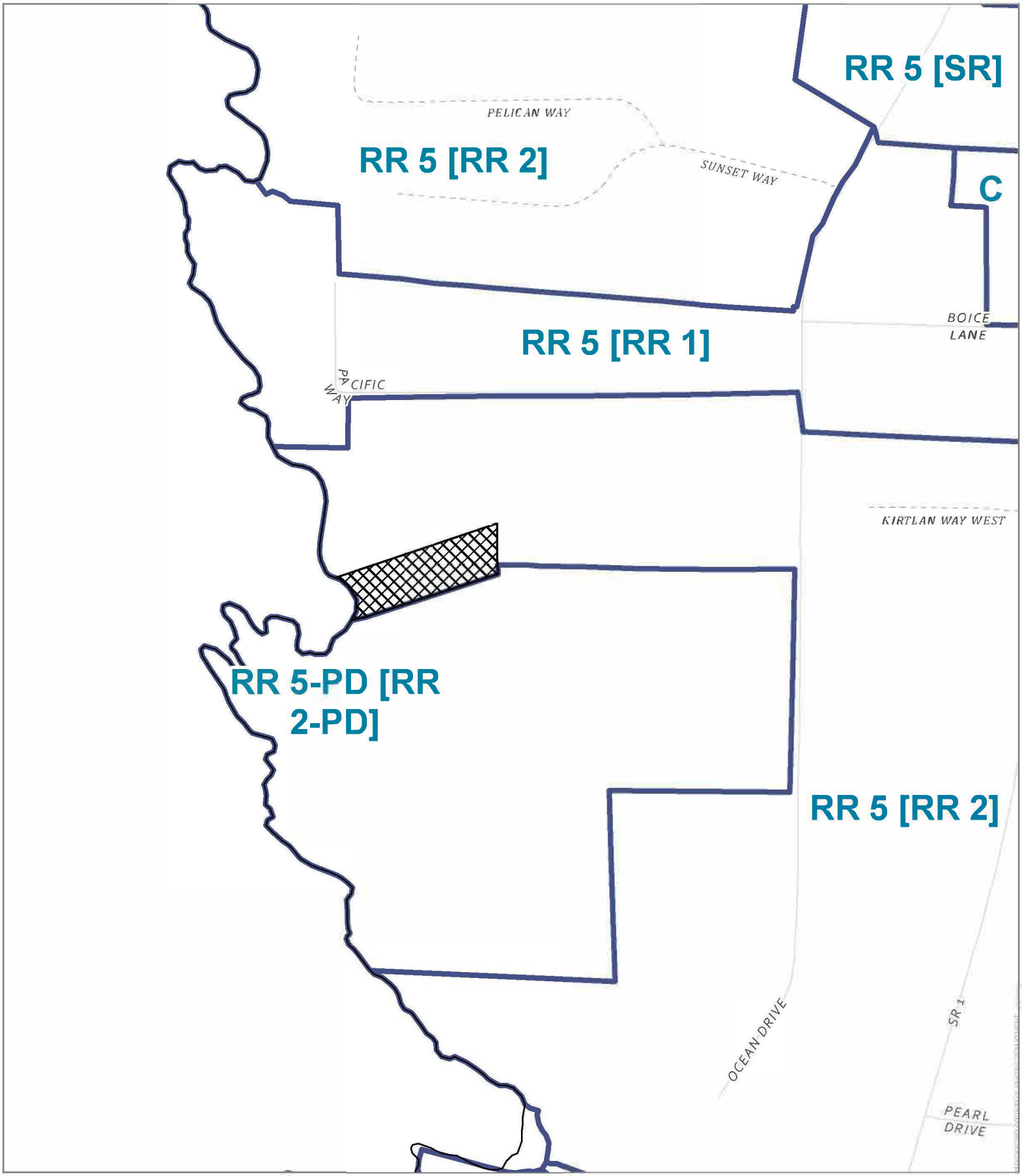

CASE: CDP 2023-0009
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General Plan Classes

Public Roads

0 250 500 Feet
0 0.045 0.09 Miles
1:6,000

GENERAL PLAN

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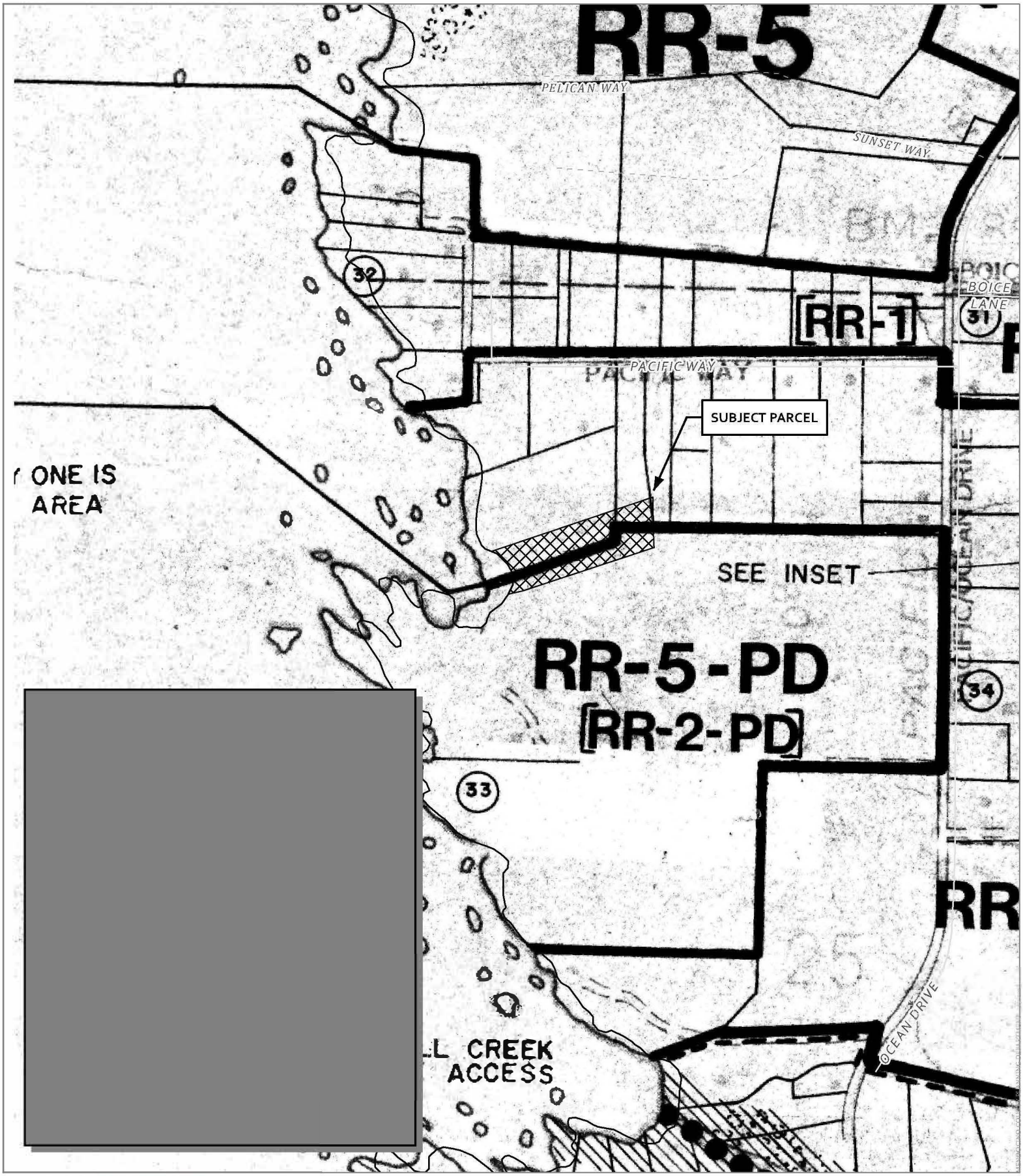

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APLCT: Jim & Denise De Alba
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ADDRESS: 33389 Pacific Way, Fort Bragg

Public Roads

0 250 500 Feet
0 0.045 0.09 Miles
1:6,000

LCP LAND USE MAP 14: BEAVER

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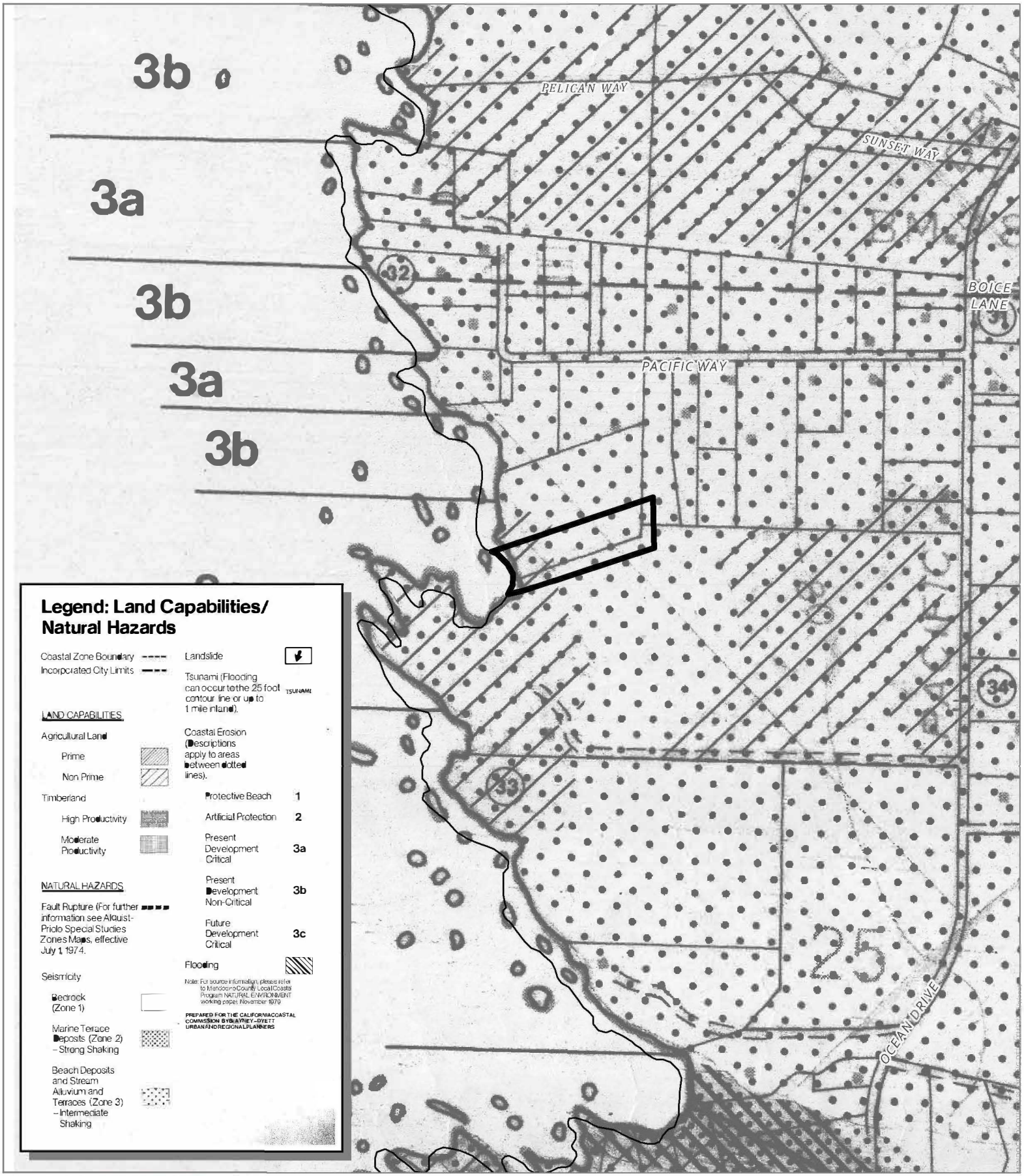

CASE: CDP 2023-0009
OWNER: DE ALBA, Jim & Denise
APN: 017-320-51
APLCT: Jim & Denise De Alba
AGENT: Tara Jackson, Wynn Coastal Planning
ADDRESS: 33389 Pacific Way, Fort Bragg

Public Roads

0 250 500 Feet
0 0.045 0.09 Miles
1:6,000

LCP LAND CAPABILITIES & NATURAL HAZARDS

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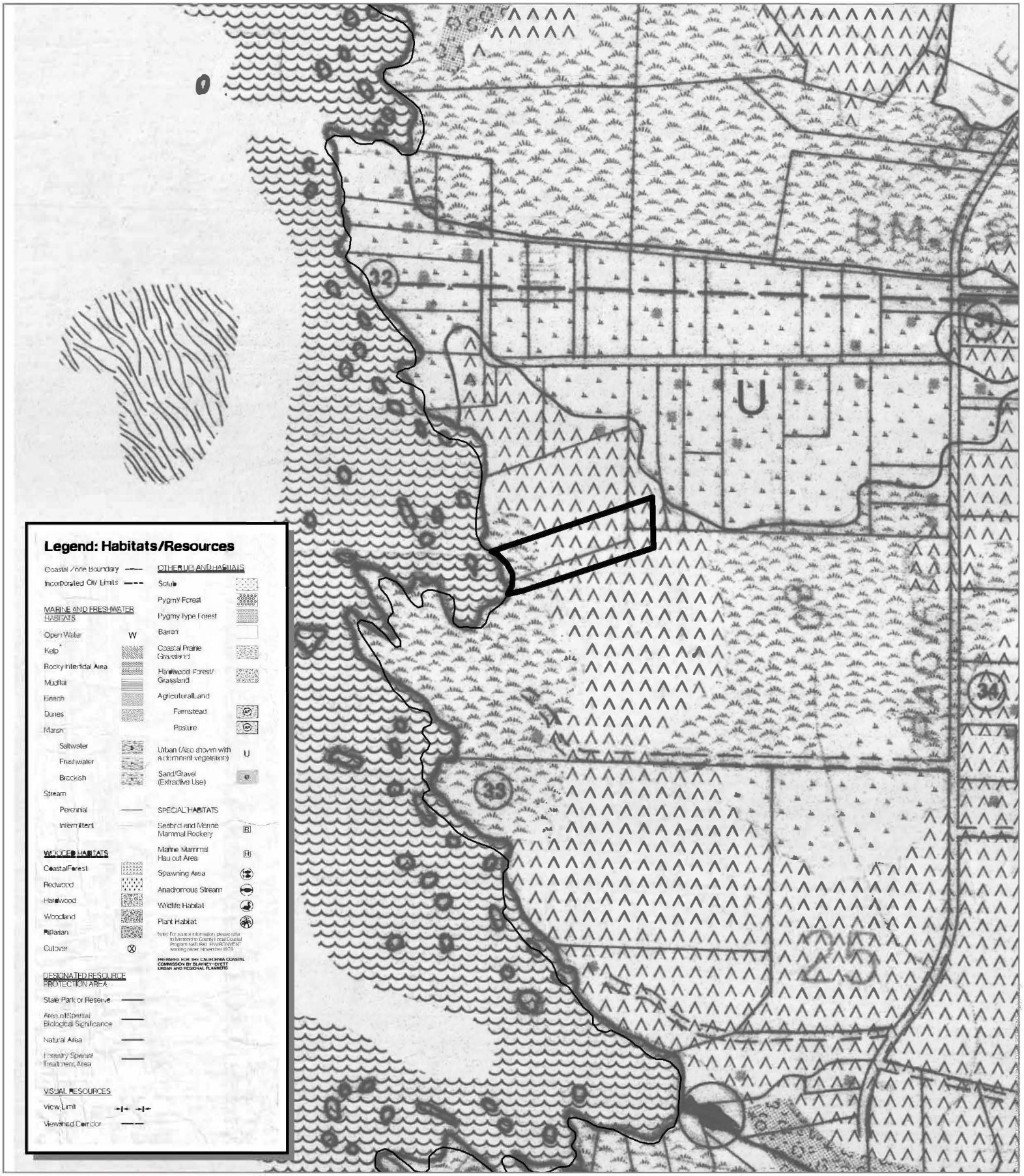

CASE: CDP 2023-0009
OWNER: DE ALBA, Jim & Denise
APN: 017-320-51
APLCT: Jim & Denise De Alba
AGENT: Tara Jackson, Wynn Coastal Planning
ADDRESS: 33389 Pacific Way, Fort Bragg

LCP HABITATS & RESOURCES

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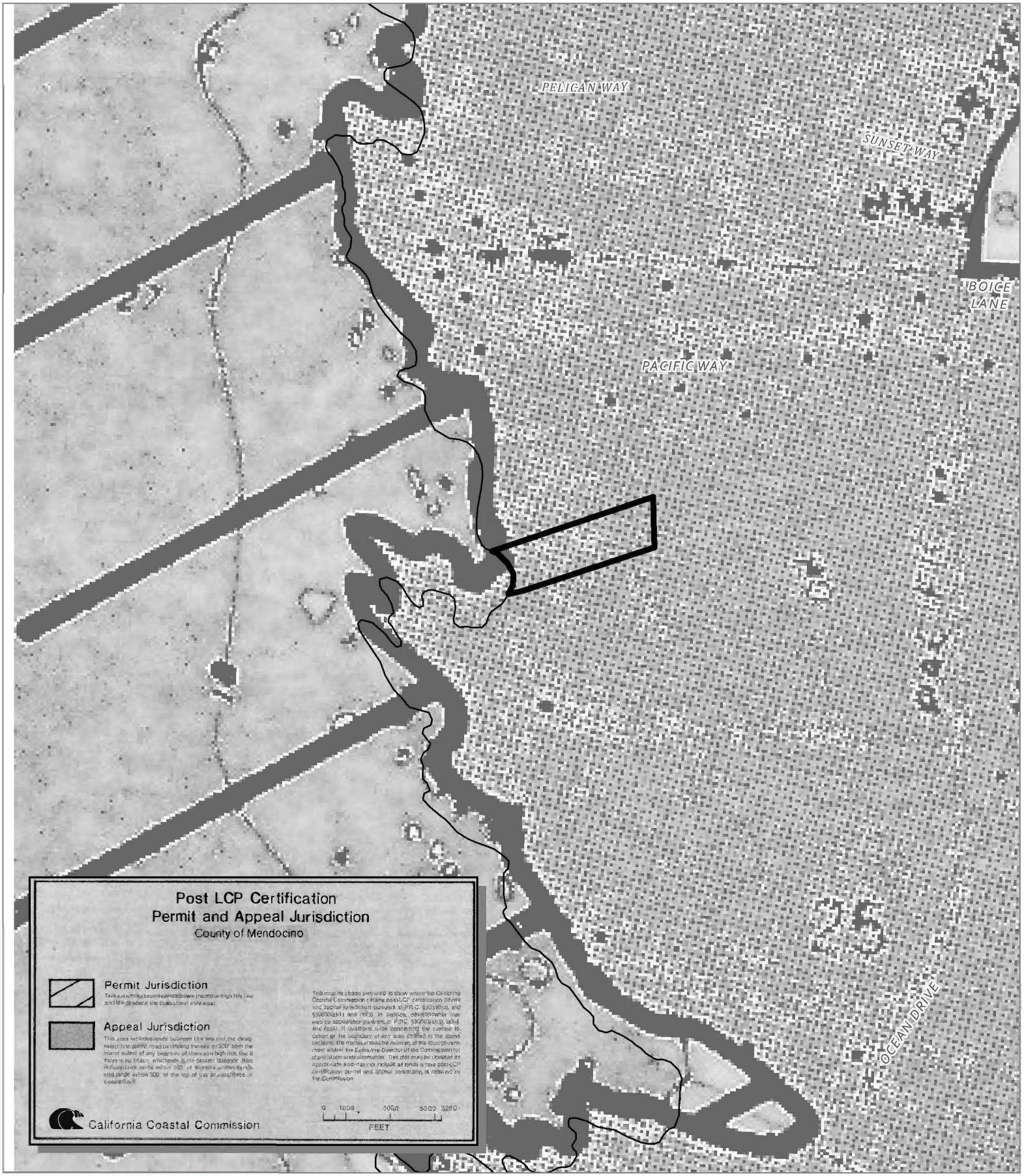

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AGENT: Tara Jackson, Wynn Coastal Planning
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Public Roads

0 250 500 Feet
0 0.045 0.09 Miles
1:6,000

POST LCP CERTIFICATION & APPEAL JURISDICTION

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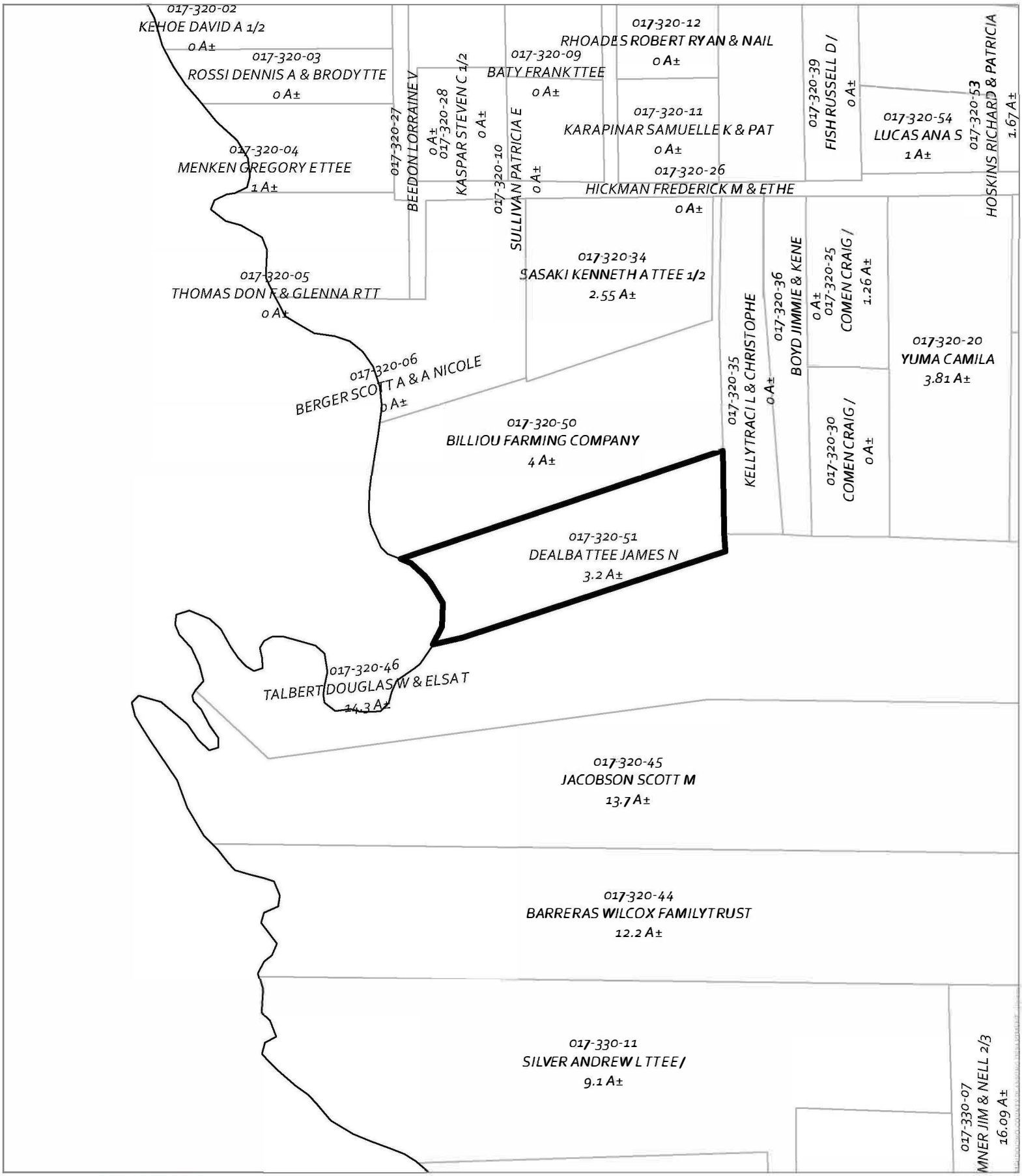

CASE: CDP 2023-0009
OWNER: DE ALBA, Jim & Denise
APN: 017-320-51
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AGENT: Tara Jackson, Wynn Coastal Planning
ADDRESS: 33389 Pacific Way, Fort Bragg

0 125 250 Feet
0 0.02 0.04 Miles
1:3,000

ADJACENT PARCELS

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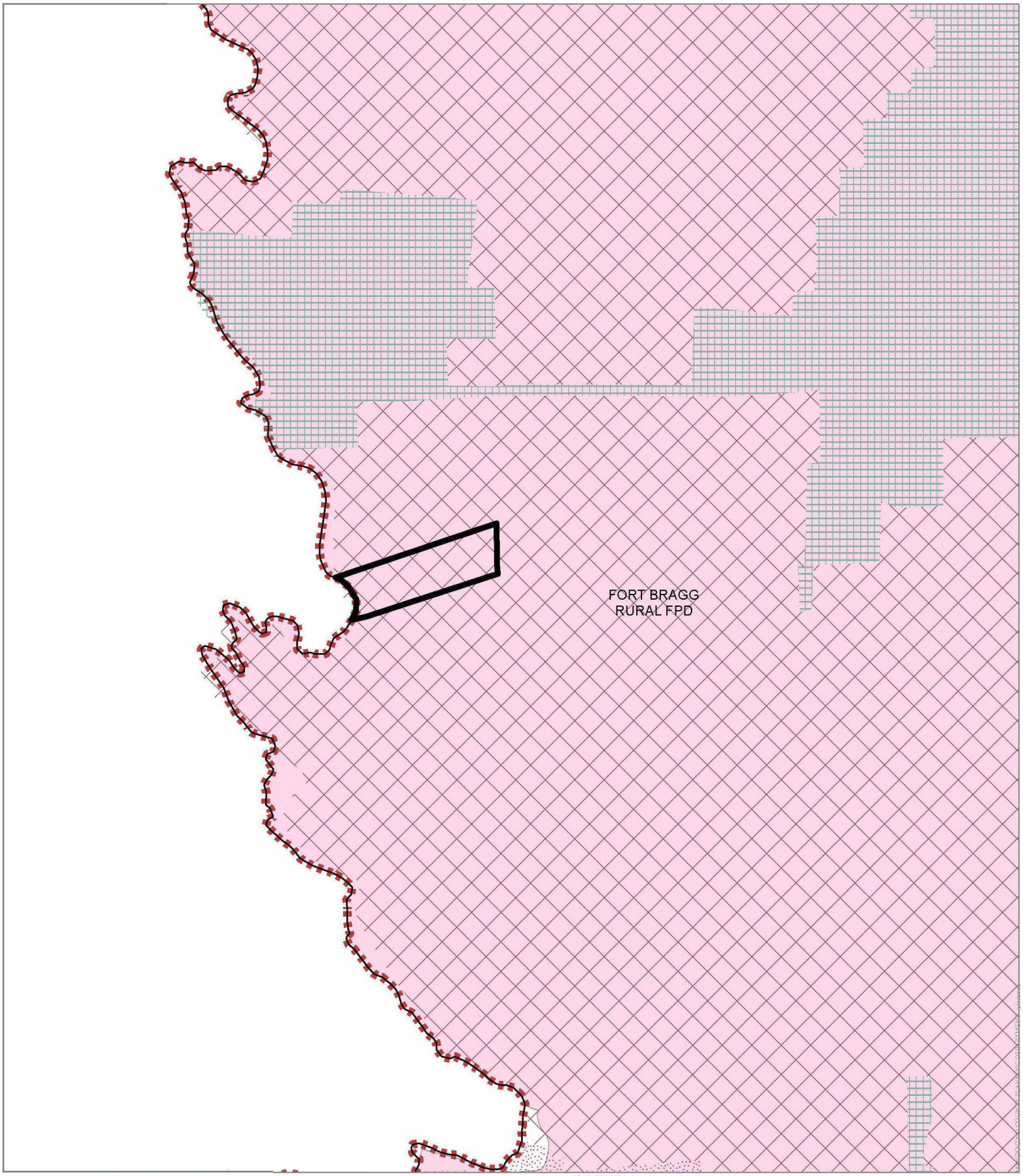

CASE: CDP 2023-0009
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Very High Fire Hazard
High Fire Hazard
Moderate Fire Hazard
County Fire Districts

0 250 500 Feet
0 0.045 0.09 Miles
1:6,000

N W E S

FIRE HAZARD ZONES & RESPONSIBILITY AREAS
STATE RESPONSIBILITY AREA

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ADDRESS: 33389 Pacific Way, Fort Bragg

0 250 500 Feet
0 0.045 0.09 Miles
1:6,000

WILDLAND-URBAN INTERFACE

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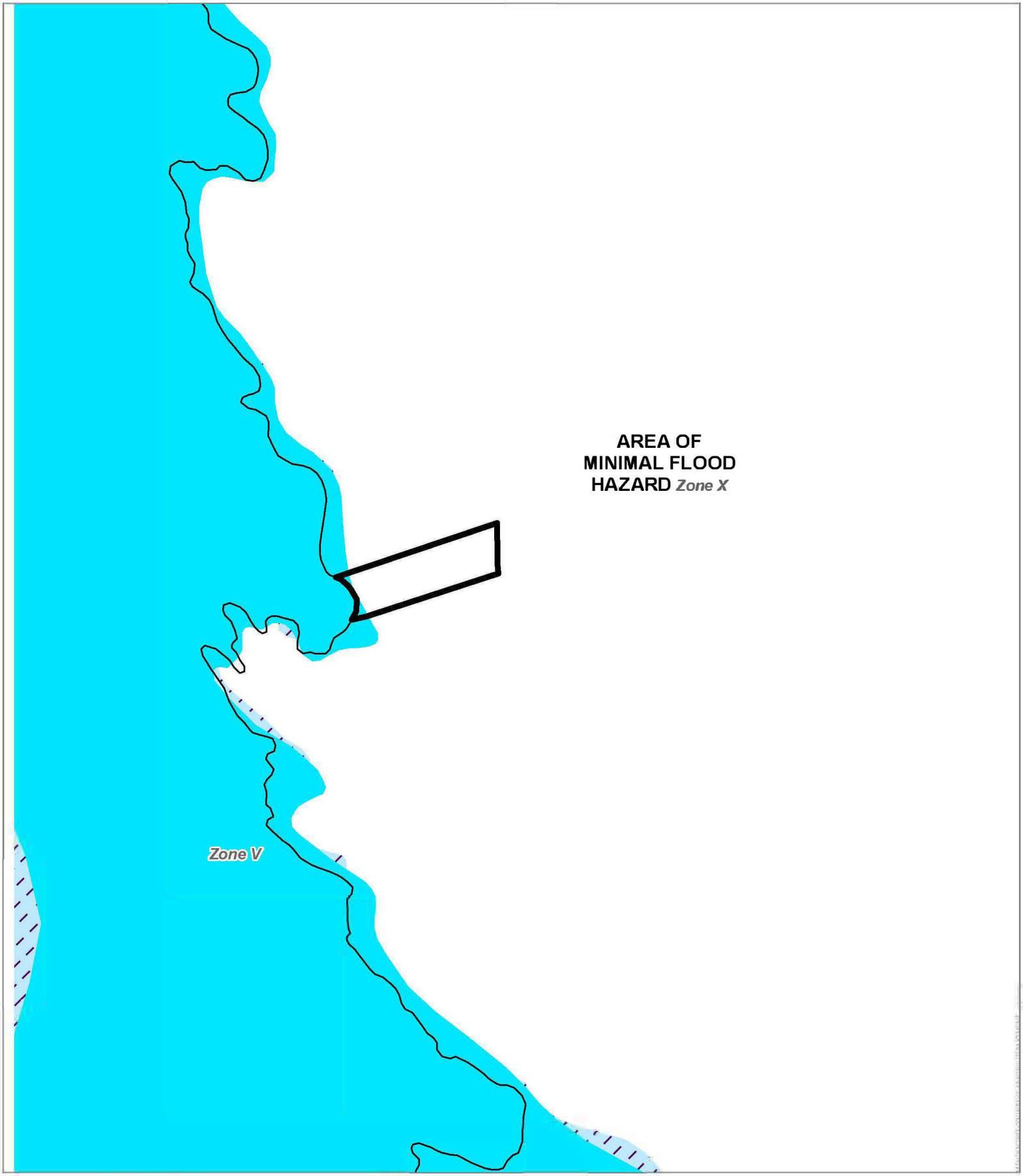

CASE: CDP 2023-0009
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APLCT: Jim & Denise De Alba
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ADDRESS: 33389 Pacific Way, Fort Bragg

Tsunami Inundation Zones

0 250 500 Feet
0 0.045 0.09 Miles
1:6,000

FLOOD & TSUNAMI INUNDATION ZONES

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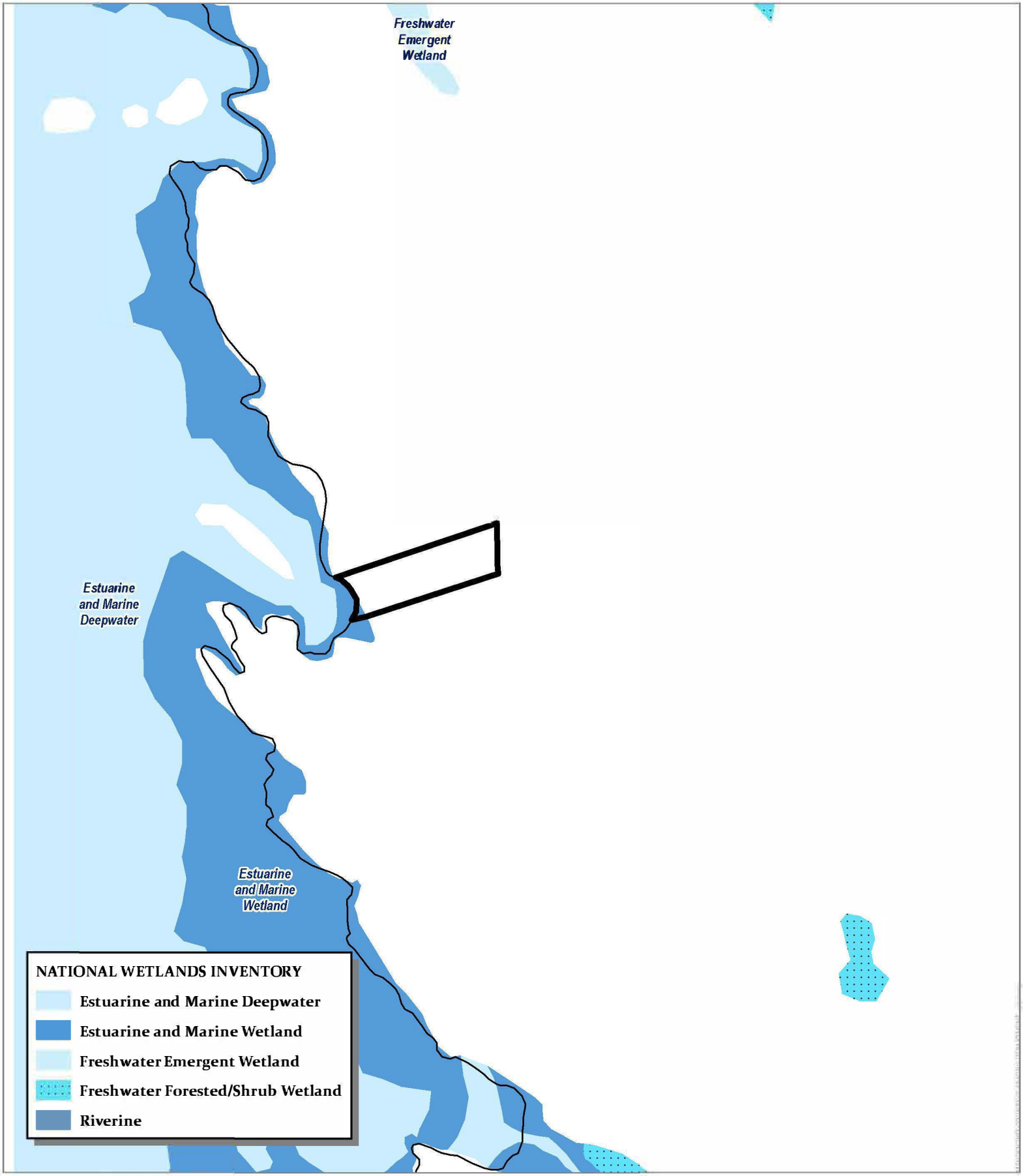

CASE: CDP 2023-0009
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ADDRESS: 33389 Pacific Way, Fort Bragg

0 250 500 Feet
0 0.045 0.09 Miles
1:6,000

WETLANDS

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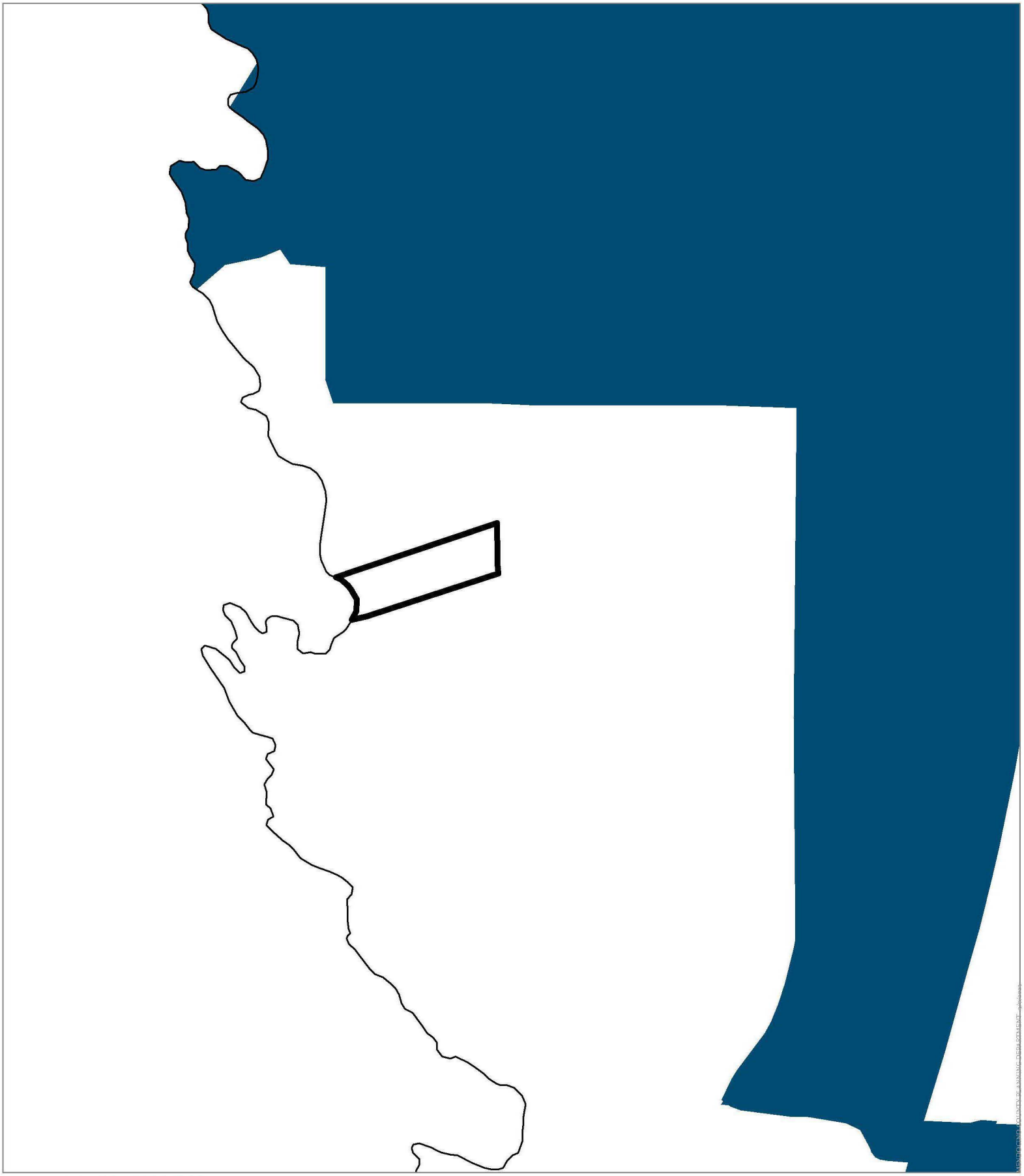

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APN: 017-320-51
APLCT: Jim & Denise De Alba
AGENT: Tara Jackson, Wynn Coastal Planning
ADDRESS: 33389 Pacific Way, Fort Bragg

Fort Bragg Stormwater Areas

0 250 500 Feet
0 0.045 0.09 Miles
1:6,000

N W E S

MS4 STORMWATER AREAS

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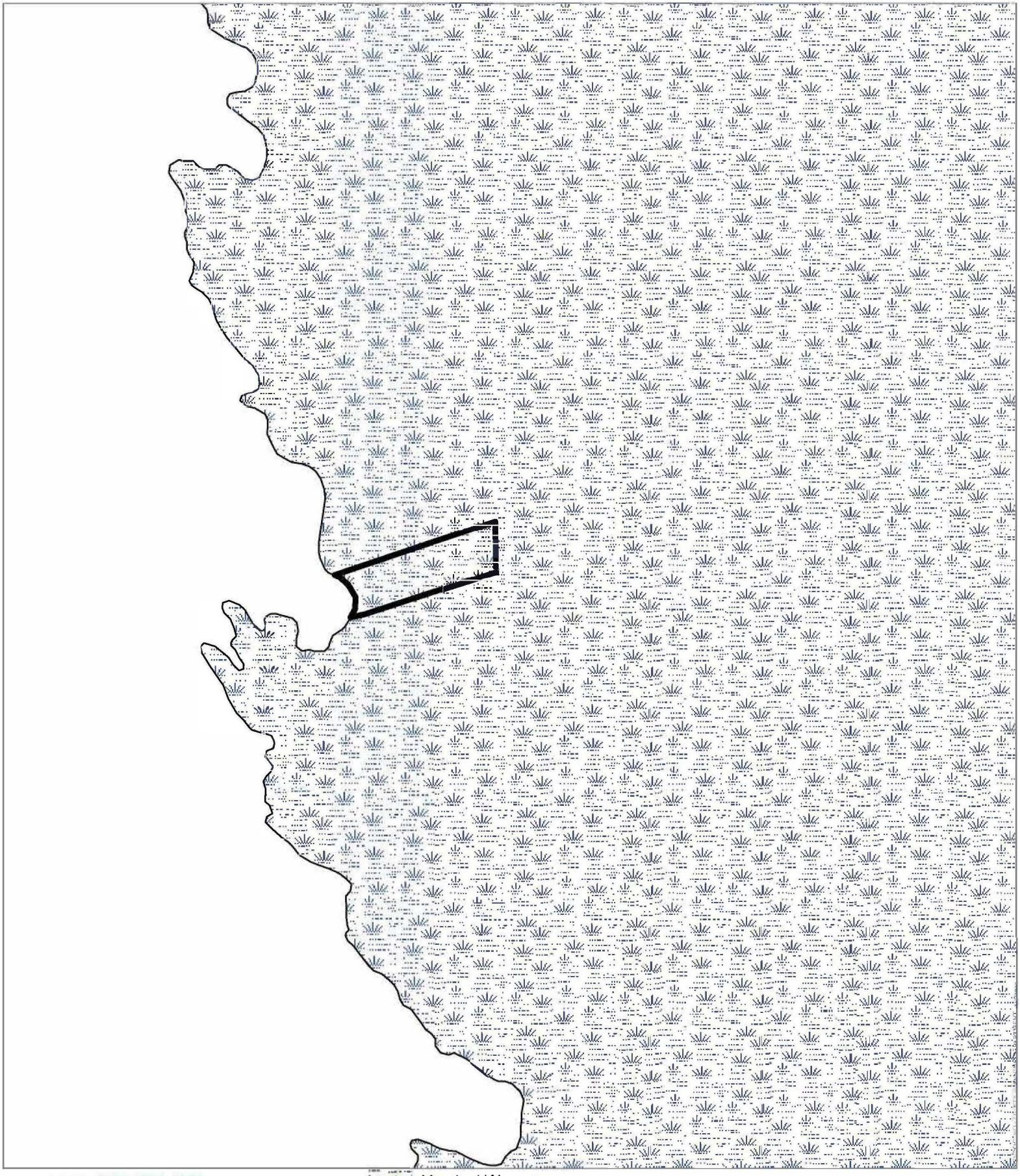

Marginal Water Resources

0 250 500 Feet

0 0.045 0.09 Miles

1:6,000

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COASTAL GROUND WATER RESOURCES

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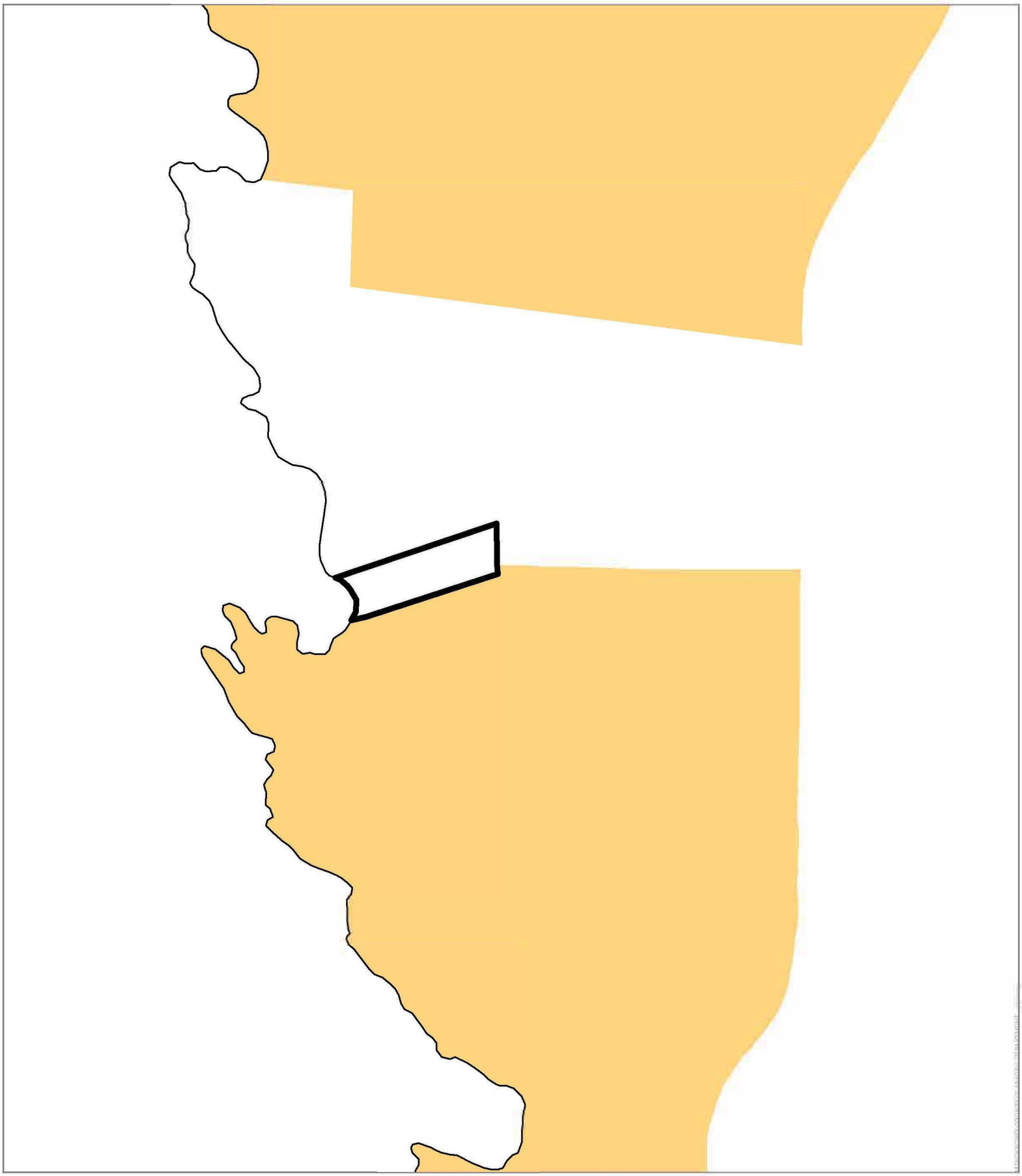

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AGENT: Tara Jackson, Wynn Coastal Planning
ADDRESS: 33389 Pacific Way, Fort Bragg

Highly Scenic Area

0 250 500 Feet
0 0.045 0.09 Miles
1:6,000

HIGHLY SCENIC AREAS

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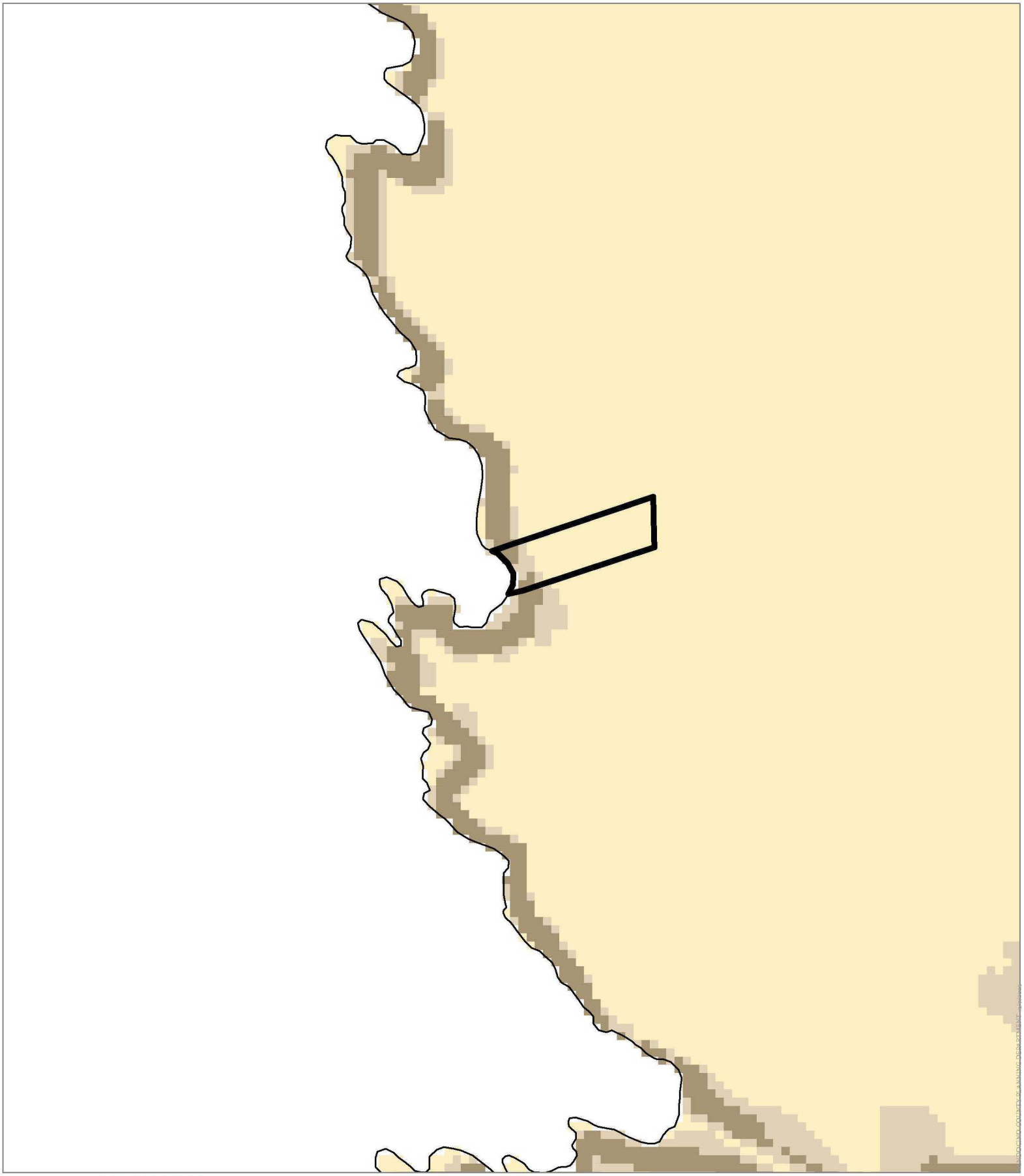

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APN: 017-320-51
APLCT: Jim & Denise De Alba
AGENT: Tara Jackson, Wynn Coastal Planning
ADDRESS: 33389 Pacific Way, Fort Bragg

0° - 14°
15° - 32°
33° - 72°

0 250 500 Feet
0 0.045 0.09 Miles
1:6,000

ESTIMATED SLOPE

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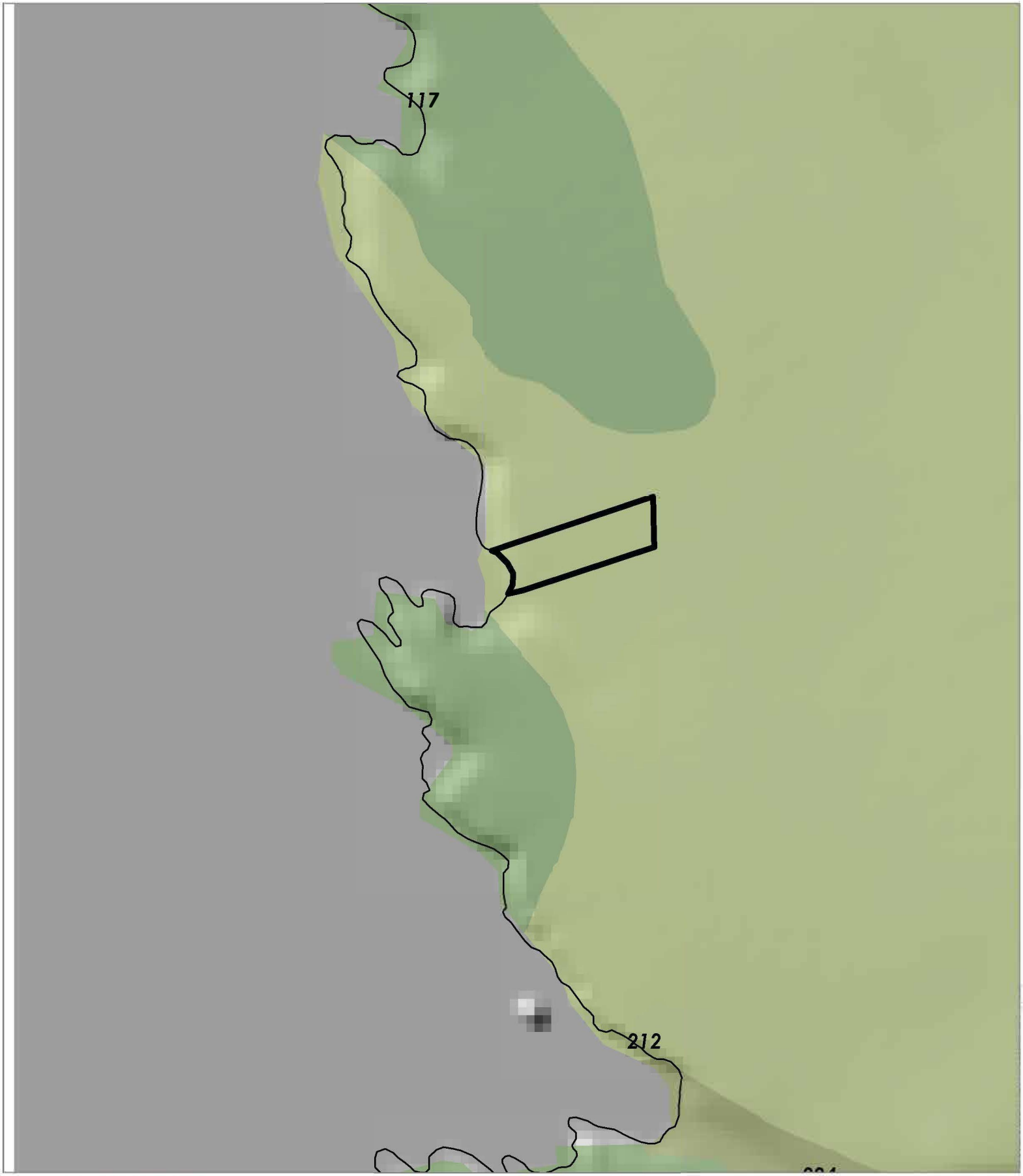

CASE: CDP 2023-0009
OWNER: DE ALBA, Jim & Denise
APN: 017-320-51
APLCT: Jim & Denise De Alba
AGENT: Tara Jackson, Wynn Coastal Planning
ADDRESS: 33389 Pacific Way, Fort Bragg

0 250 500 Feet
0 0.045 0.09 Miles
1:6,000

WESTERN SOIL CLASSIFICATIONS

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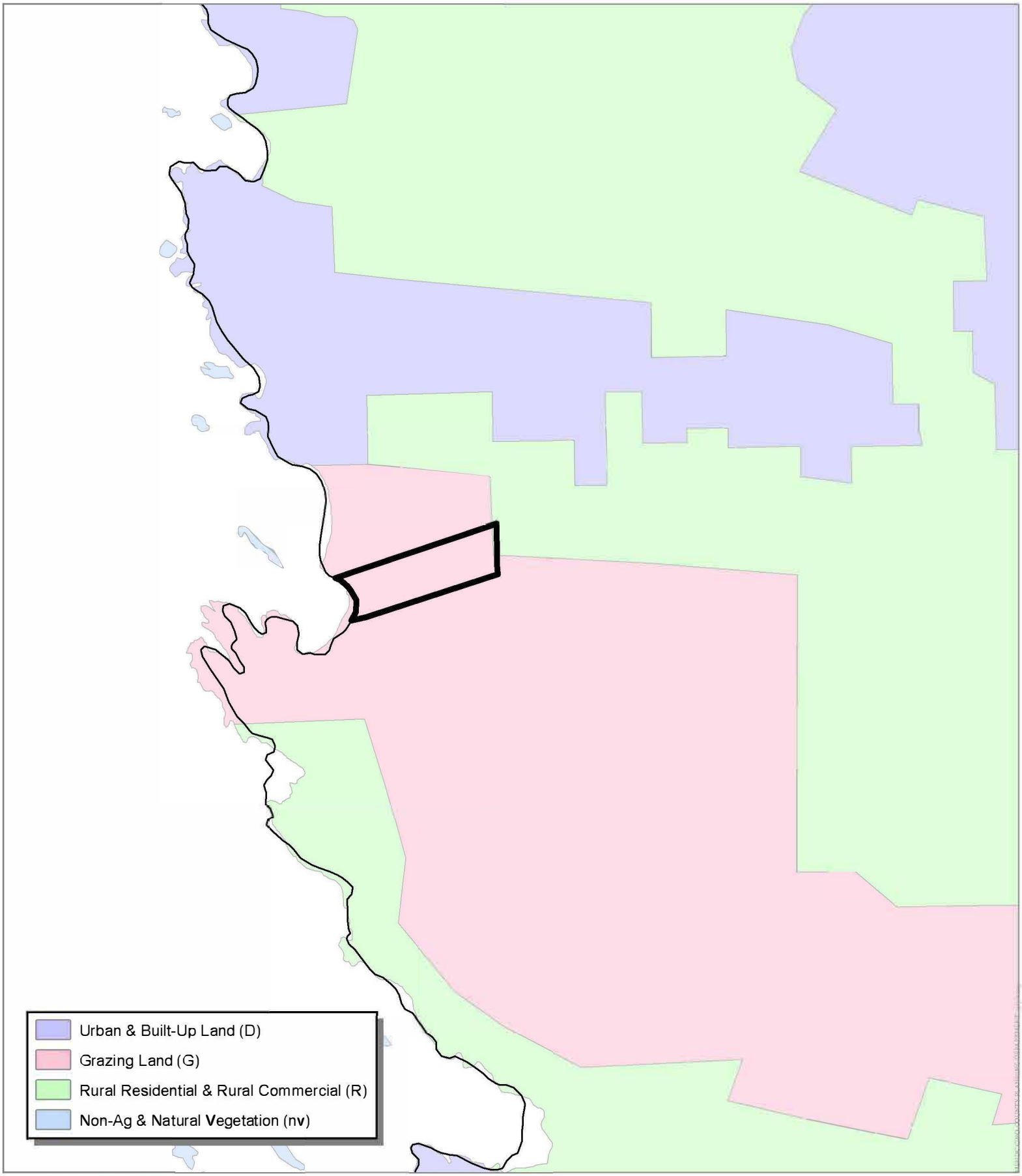

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AGENT: Tara Jackson, Wynn Coastal Planning
ADDRESS: 33389 Pacific Way, Fort Bragg

0 250 500 Feet
0 0.045 0.09 Miles
1:6,000

IMPORTANT FARMLANDS

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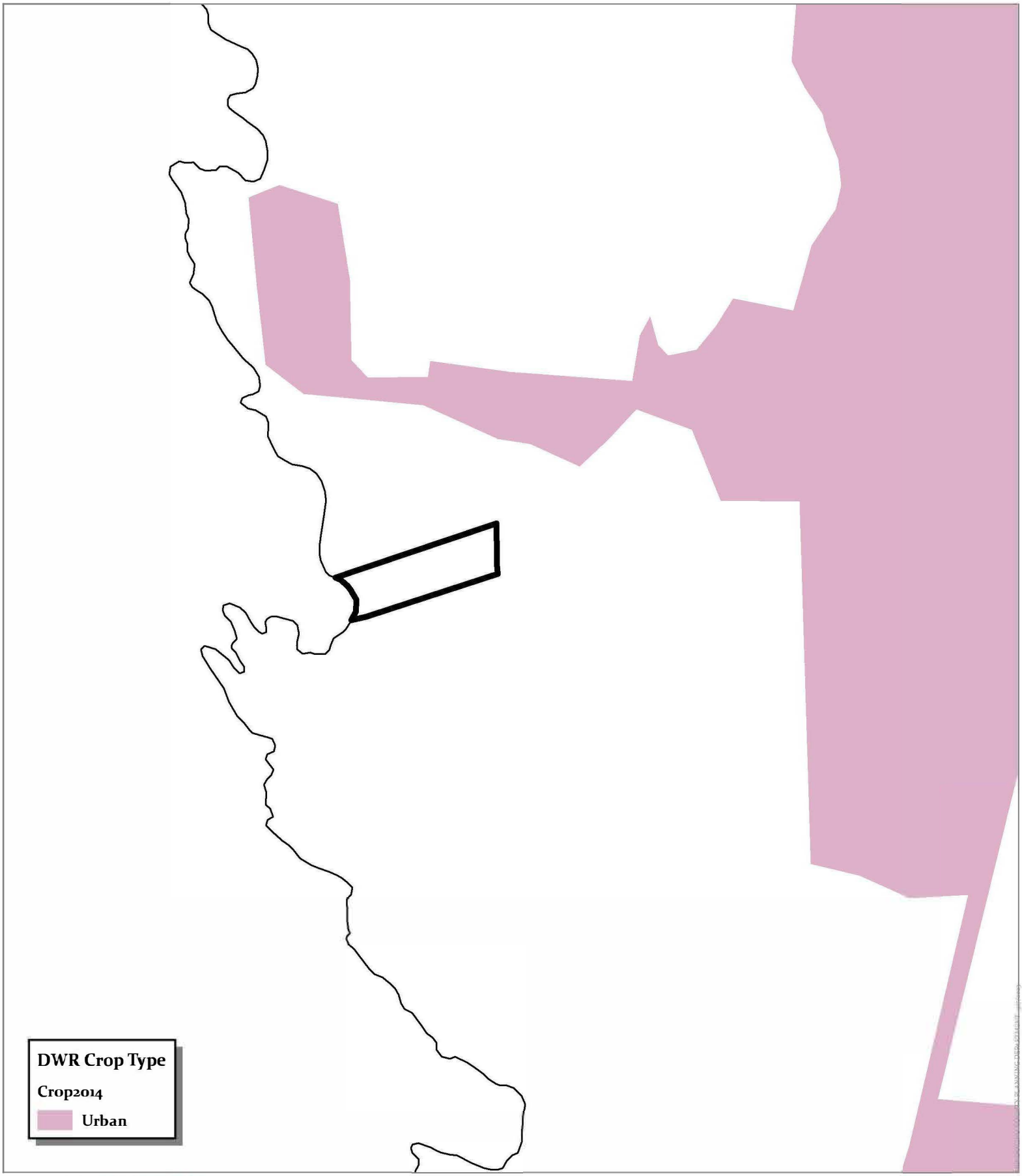

CASE: CDP 2023-0009
OWNER: DE ALBA, Jim & Denise
APN: 017-320-51
APLCT: Jim & Denise De Alba
AGENT: Tara Jackson, Wynn Coastal Planning
ADDRESS: 33389 Pacific Way, Fort Bragg

0 250 500 Feet
0 0.045 0.09 Miles
1:6,000

DWR CROP TYPE

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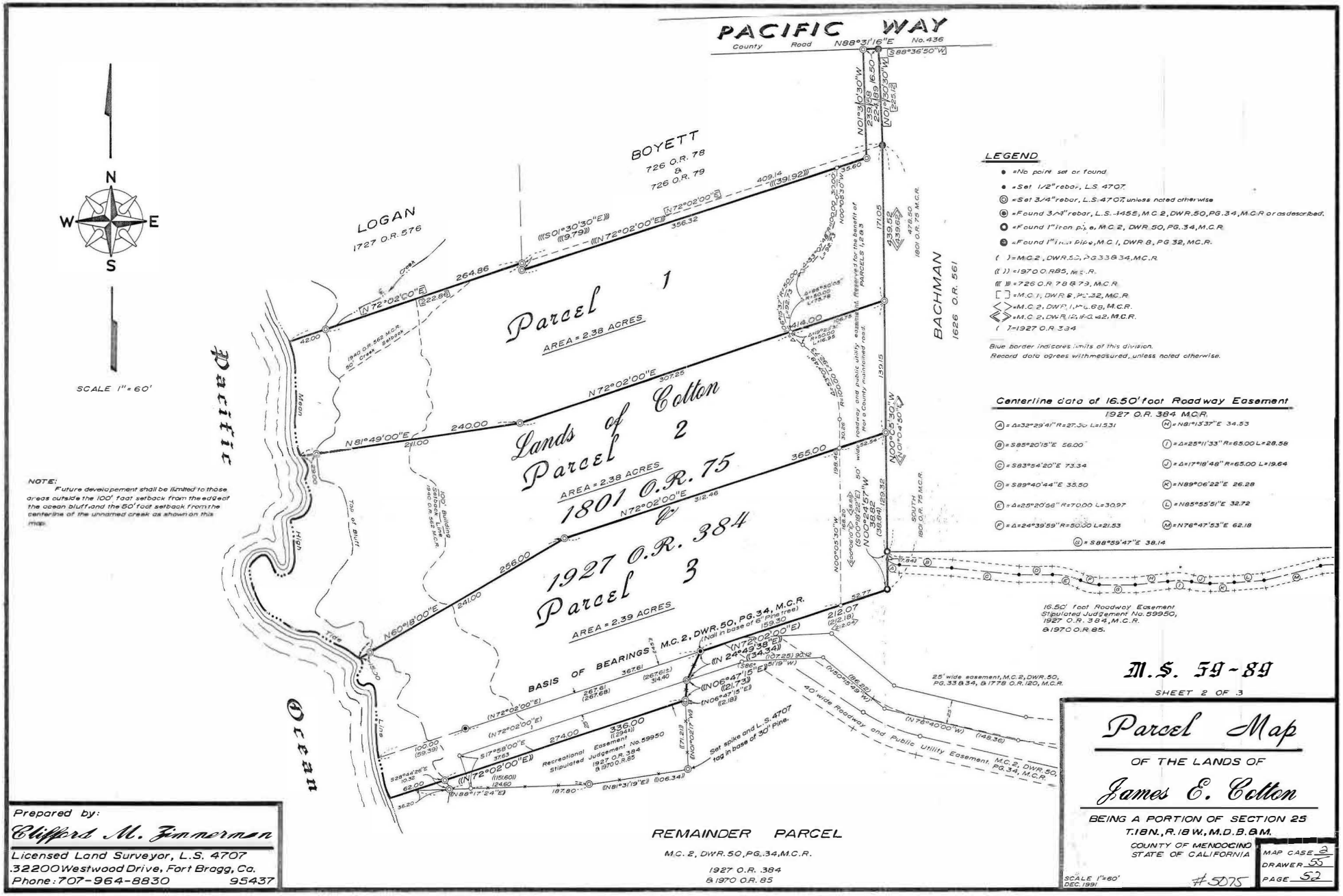
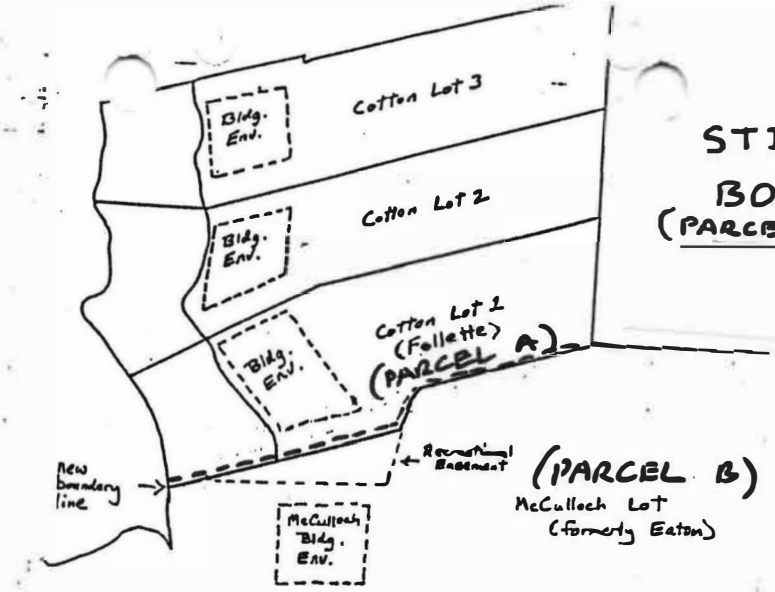
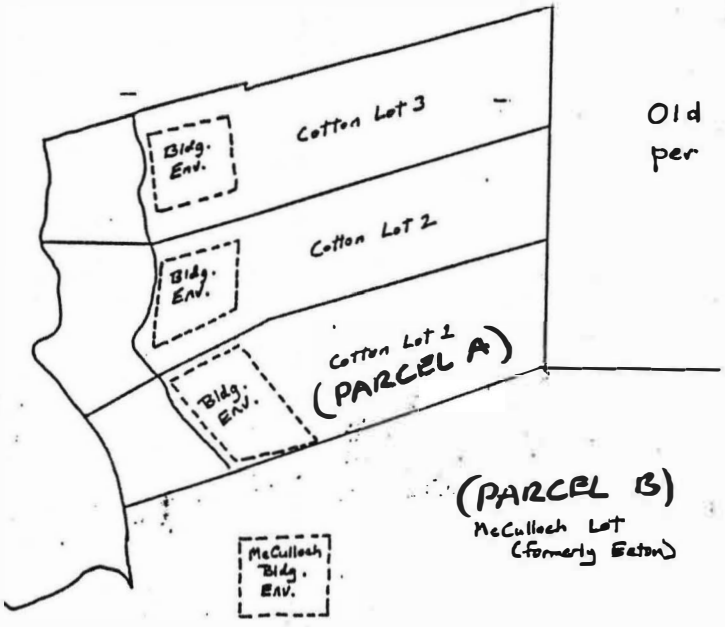
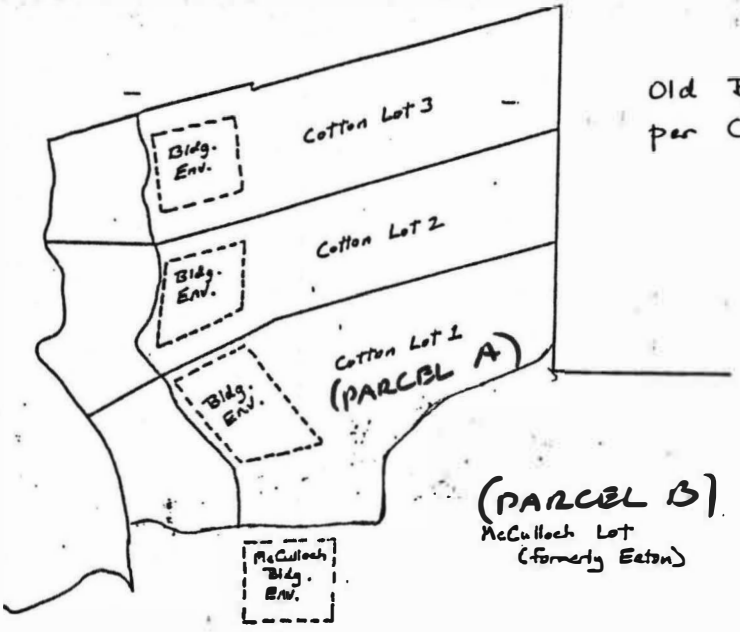

PACIFIC WAY
County Road
N88°31'16"E
No. 436
S88°36'50"W
N01°30'30"W
239.59
224.89
16.50
N01°30'30"W
(225.2)
BOYETT
726 O.R. 78
&
726 O.R. 79
LOGAN
1727 O.R. 576
Creek
(S01°30'30"E)
((9.79))
((N72°02'00"E))
356.32
409.14
((139.92))
35.60
N00°03'30"W
264.86
(N72°02'00"E)
222.86
42.00
1940 O.R. 362 M.C.R.
50' Creek Setback
Parcel 1
AREA = 2.38 ACRES
Reserved for the benefit of PARCELS 1, 2 & 3
171.05
439.52
(439.62)
478.20
1801 O.R. 75 M.C.R.
BACHMAN
1626 O.R. 561
N72°02'00"E
307.25
414.00
N00°03'30"W
135.15
N81°49'00"E
240.00
211.00
Lands of Cotton
Parcel 2
AREA = 2.38 ACRES
1801 O.R. 75
&
1927 O.R. 384
Parcel 3
AREA = 2.39 ACRES
roadway and public utility easement. Not a County maintained road.
50' wide
30.28
32.54
N00°06'30"W
(N00°06'30"W)
365.00
N72°02'00"E
312.46
198.46
(198.46)
N00°24'57"W
38.82
(38.84)
129.32
(S00°18'22"E)
(129.32)
SOUTH
180 O.R. 75 M.C.R.
256.00
N60°18'00"E
241.00
42.77
212.07
(212.18)
(212.04)
Pacific Ocean
Mean High Tide
Top of Bluff
100' Building Setback Line 1940 O.R. 362 M.C.R.
BASIS OF BEARINGS M.C.2, DWR.50, PG.34, M.C.R.
(Nail in base of 6" pine tree)
(59.30)
(N72°02'00"E)
((N 24°49'38"E))
((34.34))
(N72°02'00"E)
(107.25) 92.12
(38E)
S1°19'W)
367.61
(267.61)
314.40
(N72°02'00"E)
267.61
(267.68)
((N06°47'15"E))
((21.73))
(N06°47'15"E)
(12.18)
25' wide easement, M.C.2, DWR.50, PG.338 34, & 1778 O.R.120, M.C.R.
(N50°15'59"W)
(66.82)
40' wide Roadway and Public Utility Easement, M.C.2, DWR.50, PG.34, M.C.R.
(N75°40'00"W)
(148.36)
100.00
(59.39)
S17°58'00"E
37.63
274.00
336.00
((294.1))
Recreational Stipulated Judgement No. 59950
1927 O.R. 384
& 1970 O.R. 85
((N01°31'19"E))
((106.34))
((N02°17'W))
((71.21))
Set spike and L.S. 4707 tag in base of 30" pine.
S28°44'26"E
0.42
62.00
((N 72°02'00"E))
(115.60)
(124.60)
(N88°17'24"E)
187.80
36.20
REMAINDER PARCEL
M.C. 2, DWR. 50, PG. 34, M.C.R.
1927 O.R. 384
& 1970 O.R. 85
16.50' foot Roadway Easement
Stipulated Judgement No. 59950,
1927 O.R. 384, M.C.R.
& 1970 O.R. 85.
N
W
E
S
SCALE 1" = 60'
NOTE:
Future developement shall be limited to those areas outside the 100' foot setback from the edge of the ocean bluff and the 50' foot setback from the centerline of the unnamed creek as shown on this map.
LEGEND
• = No point set or found.
• = Set 1/2" rebar, L.S. 4707.
◎ = Set 3/4" rebar, L.S. 4707, unless noted otherwise
◉ = Found 3/4" rebar, L.S. 1455, M.C. 2, DWR. 50, PG. 34, M.C.R. or as described.
○ = Found 1" iron pipe, M.C. 2, DWR. 50, PG. 34, M.C.R.
● = Found 1" iron pipe, M.C. 1, DWR. 8, PG. 32, M.C.R.
( ) = M.C. 2, DWR. 50, PG. 338 34, M.C.R.
(( )) = 1970 O.R. 85, M.C.R.
((( ))) = 726 O.R. 78 & 79, M.C.R.
[ ] = M.C. 1, DWR. 8, PG. 32, M.C.R.
◇ = M.C. 2, DWR. 1, PG. 68, M.C.R.
◈ = M.C. 2, DWR. 12, PG. 42, M.C.R.
( ) = 1927 O.R. 384
Blue border indicates limits of this division.
Record data agrees with measured, unless noted otherwise.
Centerline data of 16.50' foot Roadway Easement
1927 O.R. 384 M.C.R.
(A) = Δ=32°29'41" R=27.30 L=15.31
(B) = S85°20'15"E 56.00'
(C) = S83°54'20"E 73.34
(D) = S89°40'44"E 35.50
(E) = Δ=25°20'06" R=70.00 L=30.97
(F) = Δ=24°39'59" R=50.00 L=21.53
(G) = S88°59'47"E 38.14
(H) = N81°15'37"E 34.53
(I) = Δ=25°11'33" R=65.00 L=28.58
(J) = Δ=17°18'48" R=65.00 L=19.64
(K) = N89°06'22"E 26.28
(L) = N85°55'51"E 32.72
(M) = N76°47'53"E 62.18
M.S. 59-89
SHEET 2 OF 3
Parcel Map
OF THE LANDS OF
James E. Colton
BEING A PORTION OF SECTION 25
T.18N., R.18W., M.D.B.&M.
COUNTY OF MENDOCINO
STATE OF CALIFORNIA
SCALE 1"=60'
DEC. 1991
#5075
MAP CASE 2
DRAWER 55
PAGE 52
Prepared by:
Clifford M. Zimmerman
Licensed Land Surveyor, L.S. 4707
32200 Westwood Drive, Fort Bragg, Ca. 95437
Phone: 707-964-8830



STIPULATED BOUNDARY (PARCEL A / PARCEL B)

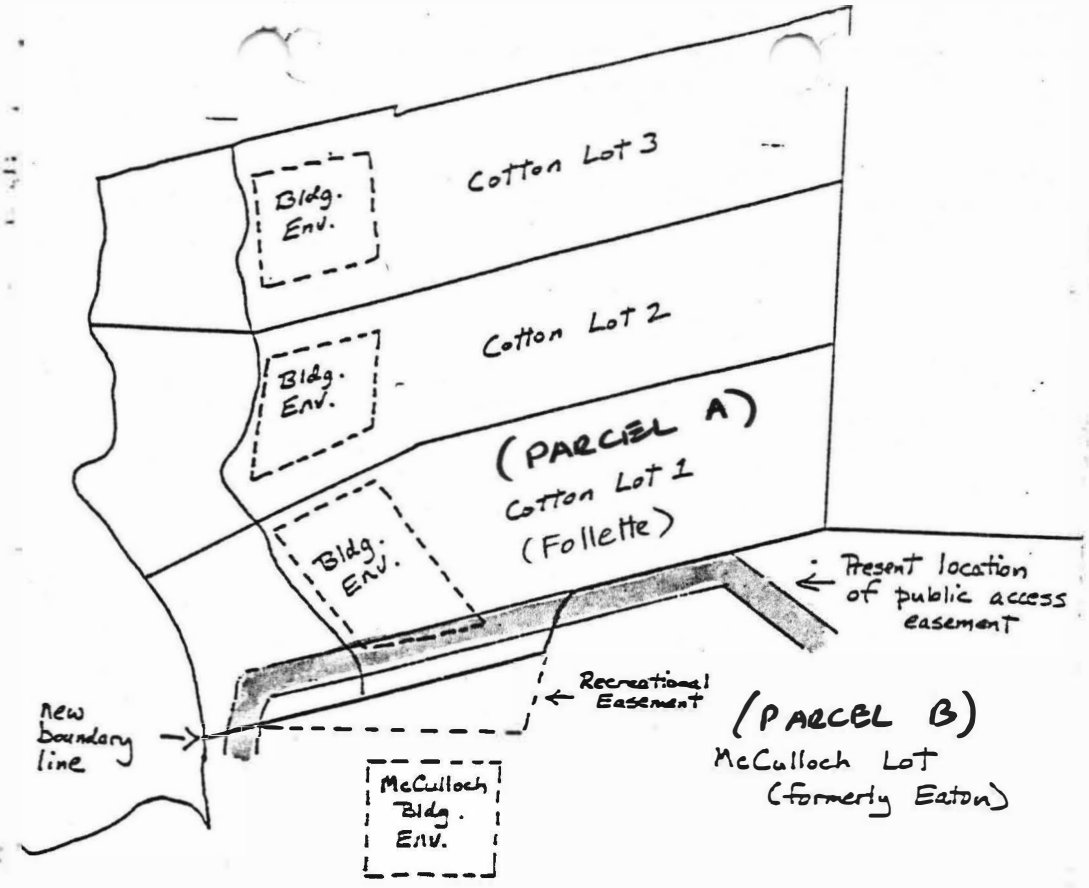


Old Boundary per Eaton

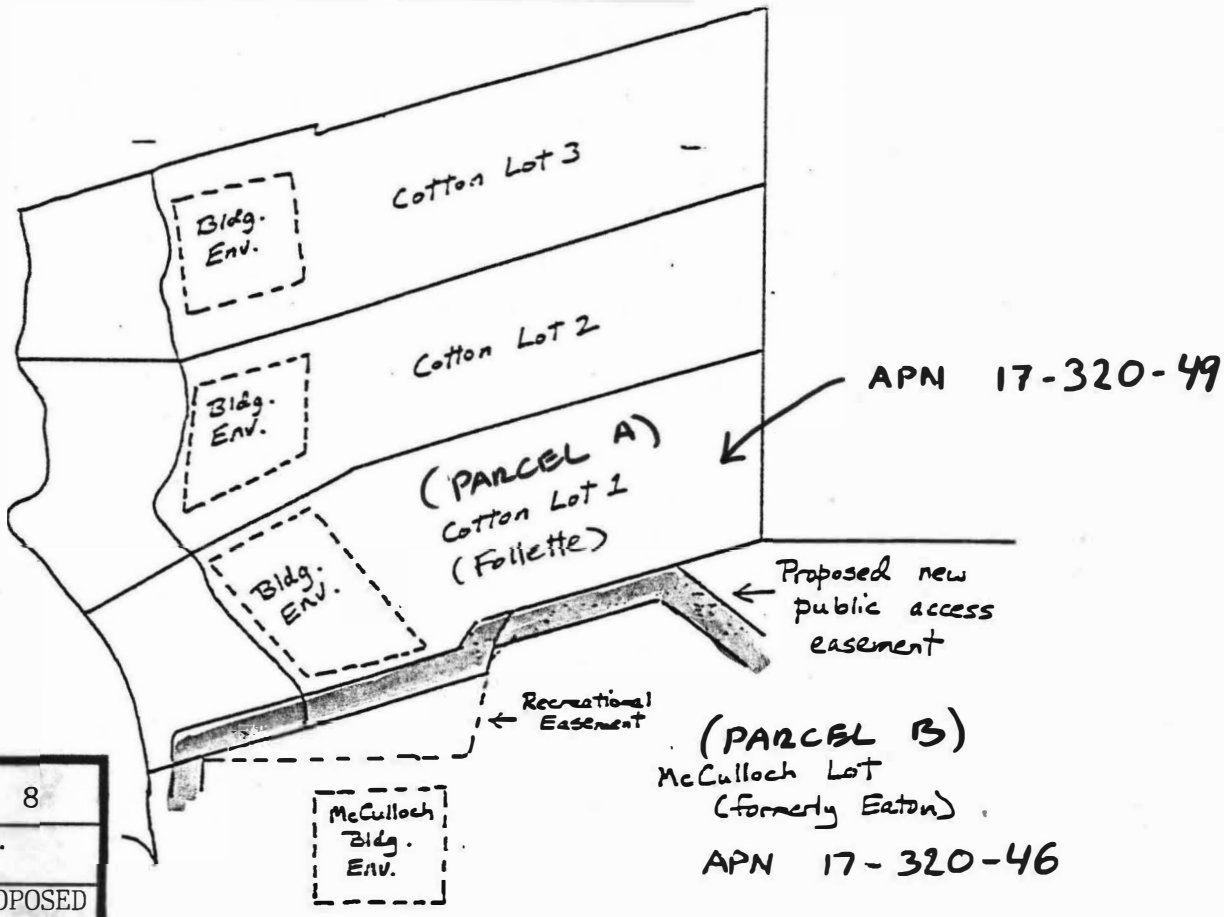


Old Boundary per Cotton

EXHIBIT NO. 4
APPLICATION NO. 1-92-212
STIPULATED PARCEL BOUNDARY
California Coastal Commission



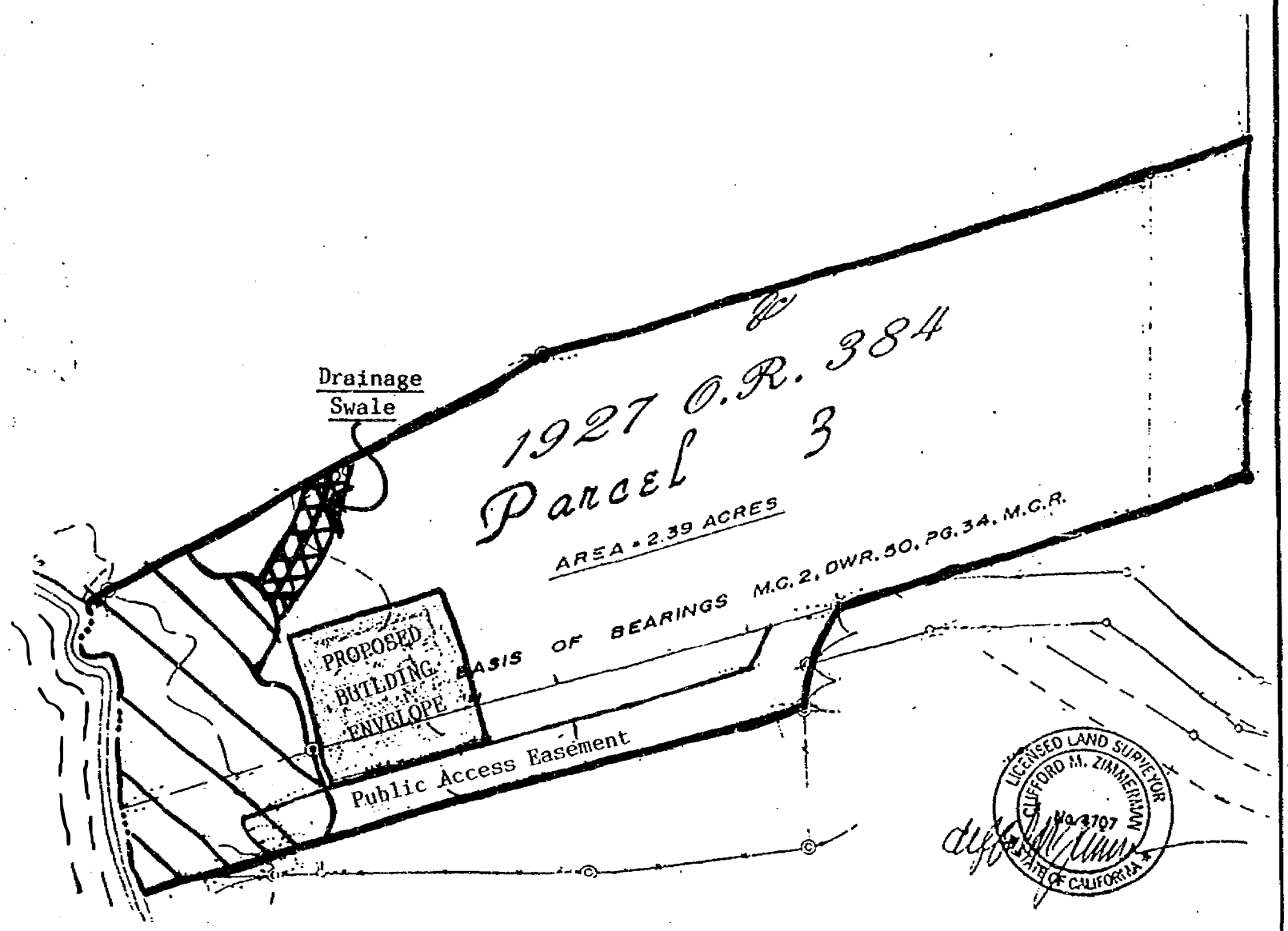
EXISTING LOCATION OF ACCESS EASEMENT



PROPOSED LOCATION OF ACCESS EASEMENT

EXHIBIT NO. 8
APPLICATION NO. 1-92-212
EXISTING & PROPOSED ACCESS EASEMENT
California Coastal Commission

EXHIBIT C



Areas Designated for Protection:

50 foot Blufftop Setback

15 foot Setback from Swale

1-91-60-A (Follette)
33381 Pacific Way
Mendocino County
APN 017-320-49

BOOK 2203 PAGE 519

A Remodeled Residence for:

Jim & Denise DeAlba
33389 Pacific Way
Fort Bragg, California
95437 AP# 017-320-51-00

PROJECT DATA

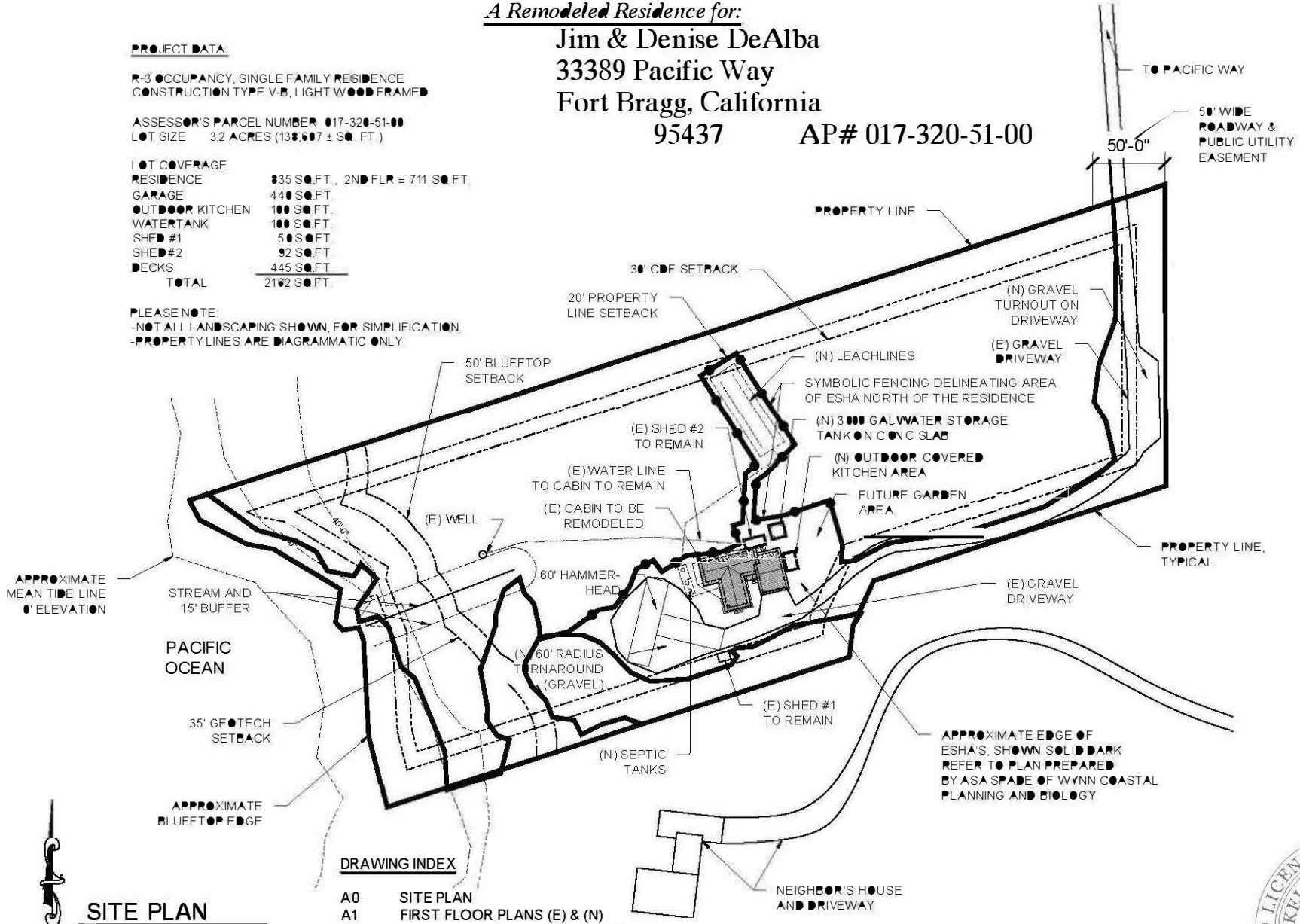
R-3 OCCUPANCY, SINGLE FAMILY RESIDENCE
CONSTRUCTION TYPE V-B, LIGHT WOOD FRAMED

ASSESSOR'S PARCEL NUMBER 017-320-51-00
LOT SIZE 3.2 ACRES (138,607 ± SQ. FT.)

LOT COVERAGE

RESIDENCE	835 SQ.FT., 2ND FLR = 711 SQ.FT.
GARAGE	448 SQ.FT.
OUTDOOR KITCHEN	100 SQ.FT.
WATERTANK	100 SQ.FT.
SHED #1	50 SQ.FT.
SHED #2	92 SQ.FT.
DECKS	445 SQ.FT.
TOTAL	2162 SQ.FT.

PLEASE NOTE:
-NOT ALL LANDSCAPING SHOWN, FOR SIMPLIFICATION.
-PROPERTY LINES ARE DIAGRAMMATIC ONLY.



SITE PLAN
SCALE: 1" = 100'-0"

DRAWING INDEX

A0	SITE PLAN
A1	FIRST FLOOR PLANS (E) & (N)
A2	SECOND FLOOR PLANS (E) & (N)
A3	EXT. ELEVATIONS SOUTH & WEST (E) & (N)
A4	EXT. ELEVATIONS NORTH & EAST (E) & (N)
A4a	EXT. ELEVATIONS GARAGE EAST AND FINISHES

LICENSED ARCHITECT
KELLY B. GRIMES
C-28723
EXP. 8-31-27
STATE OF CALIFORNIA

A REMODELED RESIDENCE FOR:

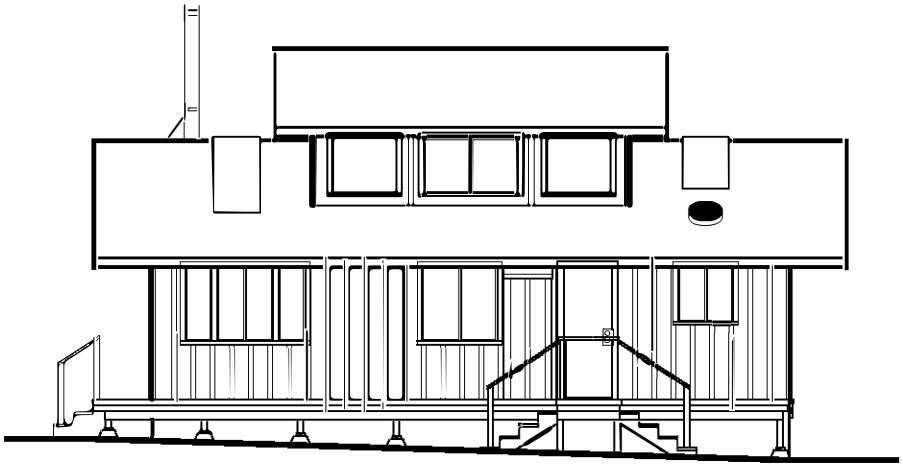
JIM & DENISE DEALBA
33389 PACIFIC WAY
FORT BRAGG, CA 95437 A.P. #017-320-51-00

SHEET NAME:

NEW SITE PLAN

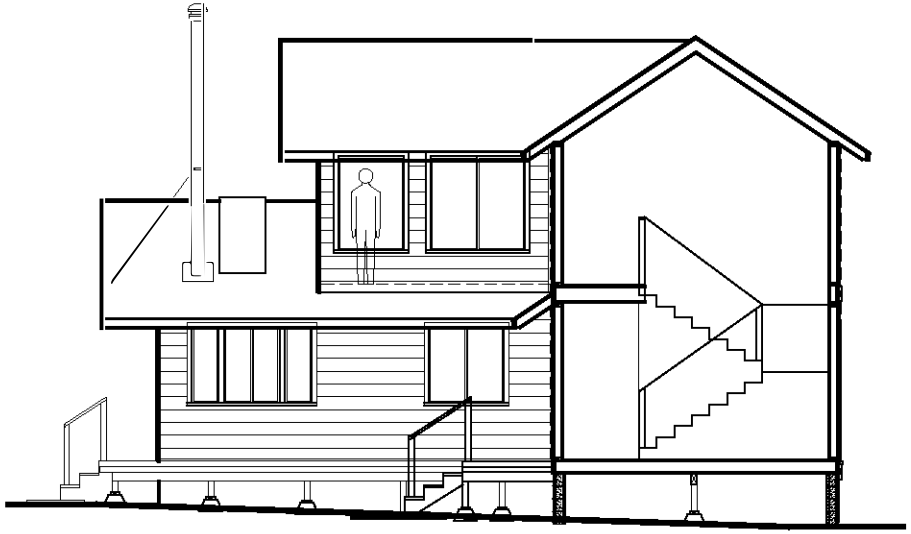
DATE: JUNE 16, 2026
SCALE: AS NOTED
DRAWN BY: KBG
JOB: DE ALBA
SHEET NO: A0 OF -

Kelly B. Grimes, Architect
P.O. Box 598
Little River, CA 95456
707-937-2904



(E) EAST ELEVATION

SCALE: 1/10" = 1'-0"



(N) EAST ELEVATION HOUSE

SCALE: 1/10" = 1'-0"

EXTERIOR

FINISHES:

ROOF – 40 YEAR 3 TAB COMPOSITION SHINGLES OVER 30 # FELT OVER STRUCTURAL SHEAR.

SIDING – HARDI–PLANK SIDING – SMOOTH, 8" REVEAL (9.25") OR HARDI–SHINGLE SIDING – OVER HARDIWRAP WATER BARRIER (OR EQ.) OVER STRUCTURAL SHEAR, COPPER SCREENED VENTING TO CRAWL SPACE

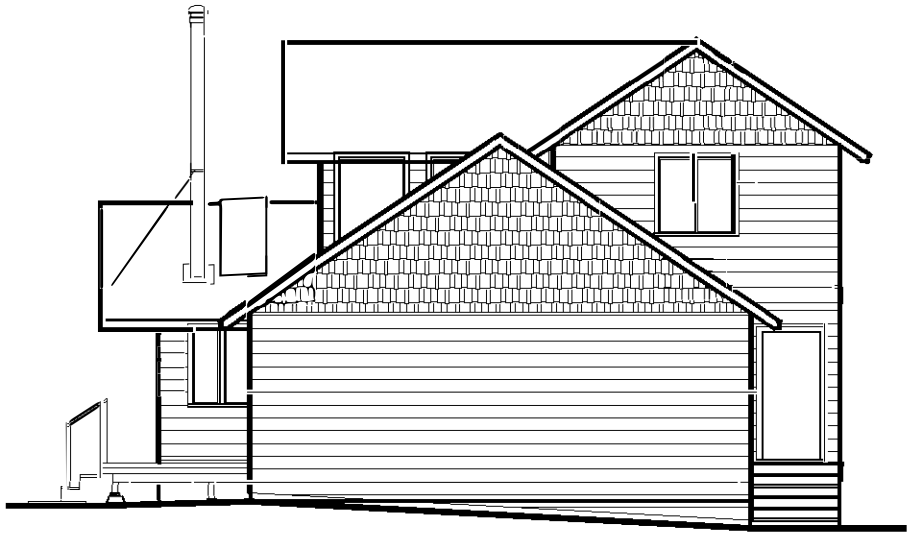
TRIM – REDWOOD OR TREATED RADIATTA PINE , 5/4 SMOOTH, VARIABLE WIDTHS

PAINT – BEHR EXTERIOR COLORS: VOYAGE PPU13–07, CLEAR VISTA PPU13–11, WIND SPEED S450–2

HEAVY TIMBER FRAMING EXPOSED 2x REDWOOD (OR WESTERN RED CEDAR) FRAMING WITH SIMILAR 4x & 6x POSTS AND BEAMS, CLEAR OIL FINISH

FLOOR TYPE – RAISED WOOD FRAMED FLOOR W/ VARIOUS FINISHES, MAINLY ENGINEERED WOOD, STYLE TBD

FOUNDATION – PERIMETER WITH POST AND PIER CRAWL SPACE



(N) EAST ELEVATION W/ GARAGE

SCALE: 1/10" = 1'-0"

LICENSED ARCHITECT
KELLY B. GRIMES
C-28723
EXP. 8-31-25
STATE OF CALIFORNIA

A REMODELED RESIDENCE FOR:

JIM & DENISE DEALBA
33389 PACIFIC WAY
FORT BRAGG, CA 95437

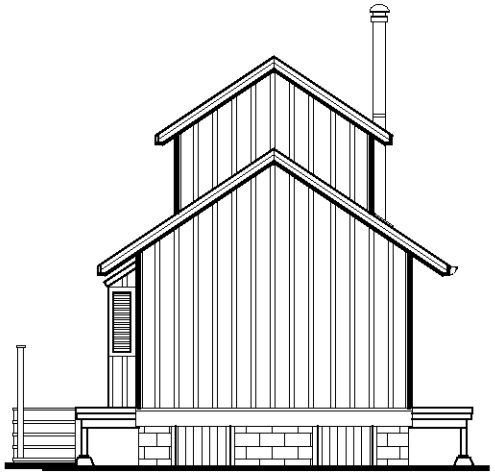
A.P. #017-320-51-00

SHEET NAME:

EXTERIOR ELEVATIONS EAST
EXISTING & PROPOSED

DATE:	MARCH 14, 2025
SCALE:	AS NOTED
DRAWN BY:	KBG
JOB:	DE ALBA
SHEET NO:	A4a OF -

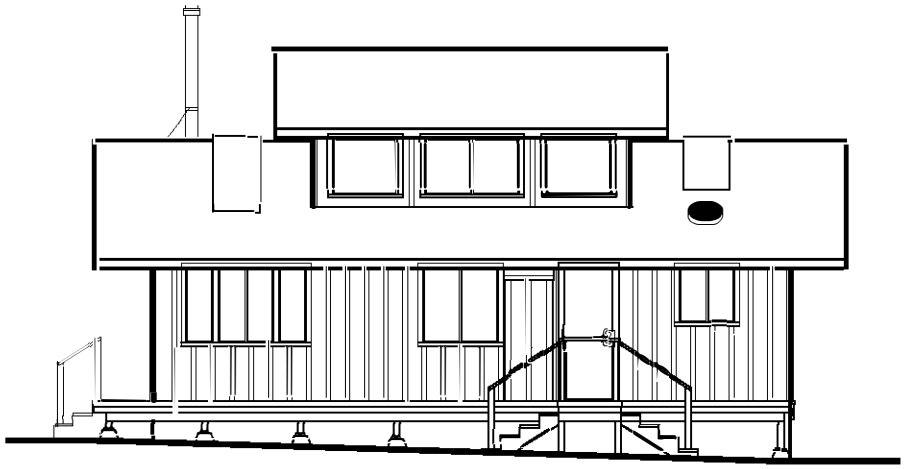
Kelly B. Grimes, Architect
P.O.Box 598
Little River, CA 95456
707-937-2904



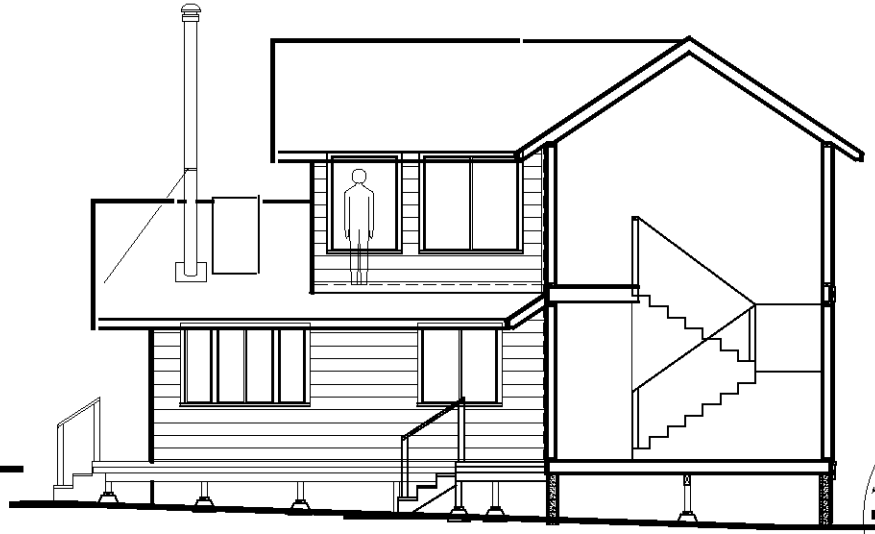
(E) NORTH ELEVATION
SCALE: 1/10" = 1'-0"



(N) NORTH ELEVATION
SCALE: 1/10" = 1'-0"



(E) EAST ELEVATION
SCALE: 1/10" = 1'-0"



(N) EAST ELEVATION HOUSE
SCALE: 1/10" = 1'-0"

LICENSED ARCHITECT
KELLY B. GRIMES
C-28723
EXP. 8-31-25
STATE OF CALIFORNIA

A REMODELED RESIDENCE FOR:

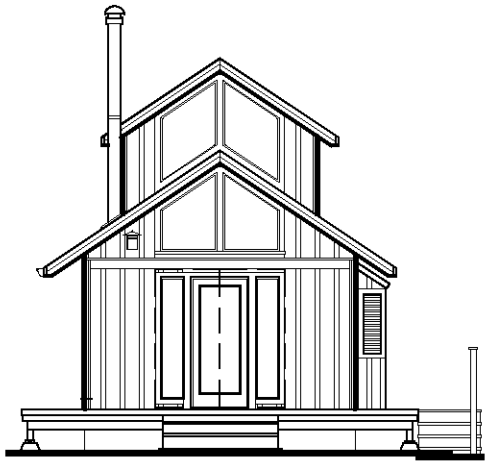
JIM & DENISE DEALBA
33389 PACIFIC WAY
FORT BRAGG, CA 95437
A.P. #017-320-51-00

SHEET NAME:

EXTERIOR ELEVATIONS NORTH & EAST
EXISTING & PROPOSED

DATE: MARCH 14, 2025
SCALE: AS NOTED
DRAWN BY: KBG
JOB: DE ALBA
SHEET NO: A4 OF -

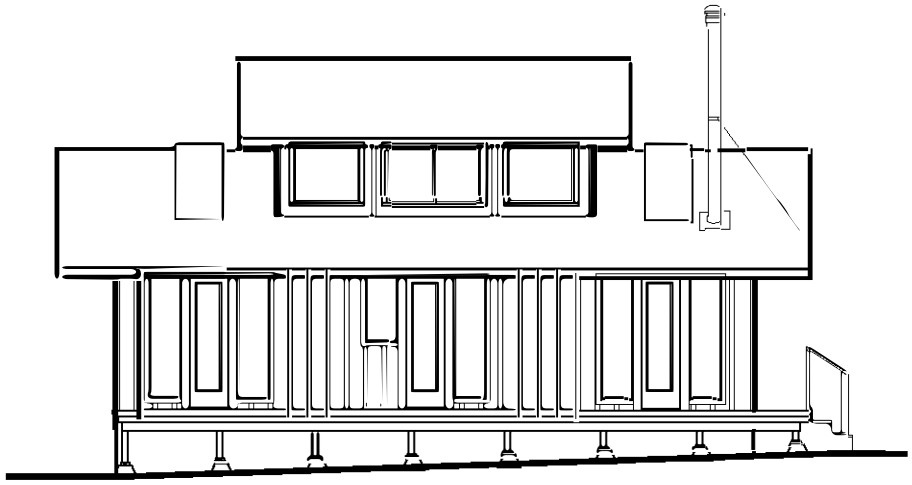
Kelly B. Grimes, Architect
P.O. Box 308
Little River, CA 95456
707-937-2904



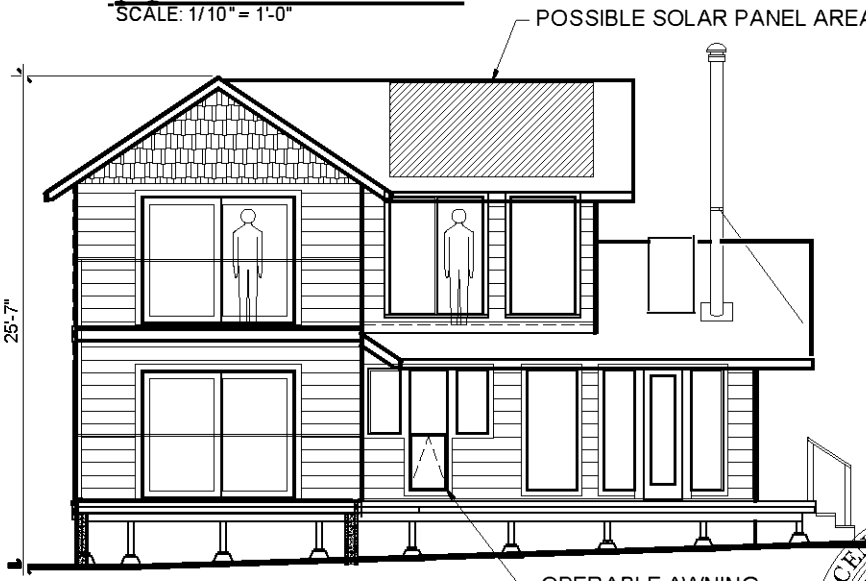
(E) SOUTH ELEVATION
SCALE: 1/10" = 1'-0"



(N) SOUTH ELEVATION
SCALE: 1/10" = 1'-0"



(E) WEST ELEVATION
SCALE: 1/10" = 1'-0"



(N) WEST ELEVATION
SCALE: 1/10" = 1'-0"

LICENSED ARCHITECT
KELLY B. GRIMES
C-28723
EXP. 8-31-25
STATE OF CALIFORNIA

A REMODELED RESIDENCE FOR:

JIM & DENISE DEALBA
33389 PACIFIC WAY
FORT BRAGG, CA 95437

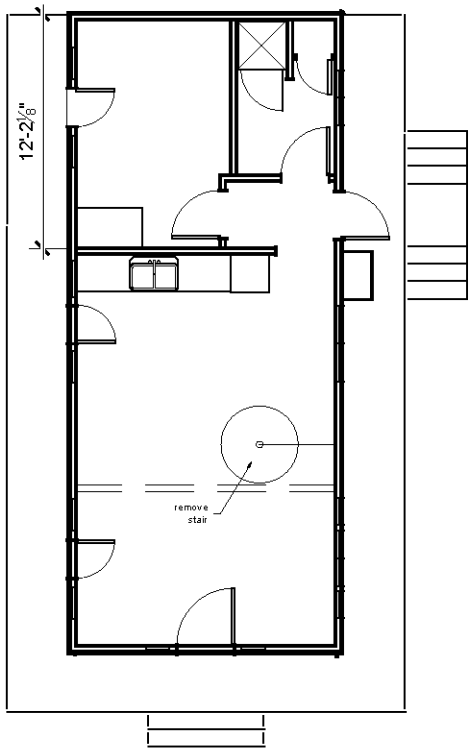
A.P. #017-320-51-00

SHEET NAME:

EXTERIOR ELEVATIONS SOUTH & WEST
EXISTING & PROPOSED

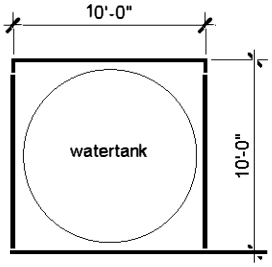
DATE: MARCH 14, 2025
SCALE: AS NOTED
DRAWN BY: KBG
JOB: DE ALBA
SHEET NO: A3 OF -

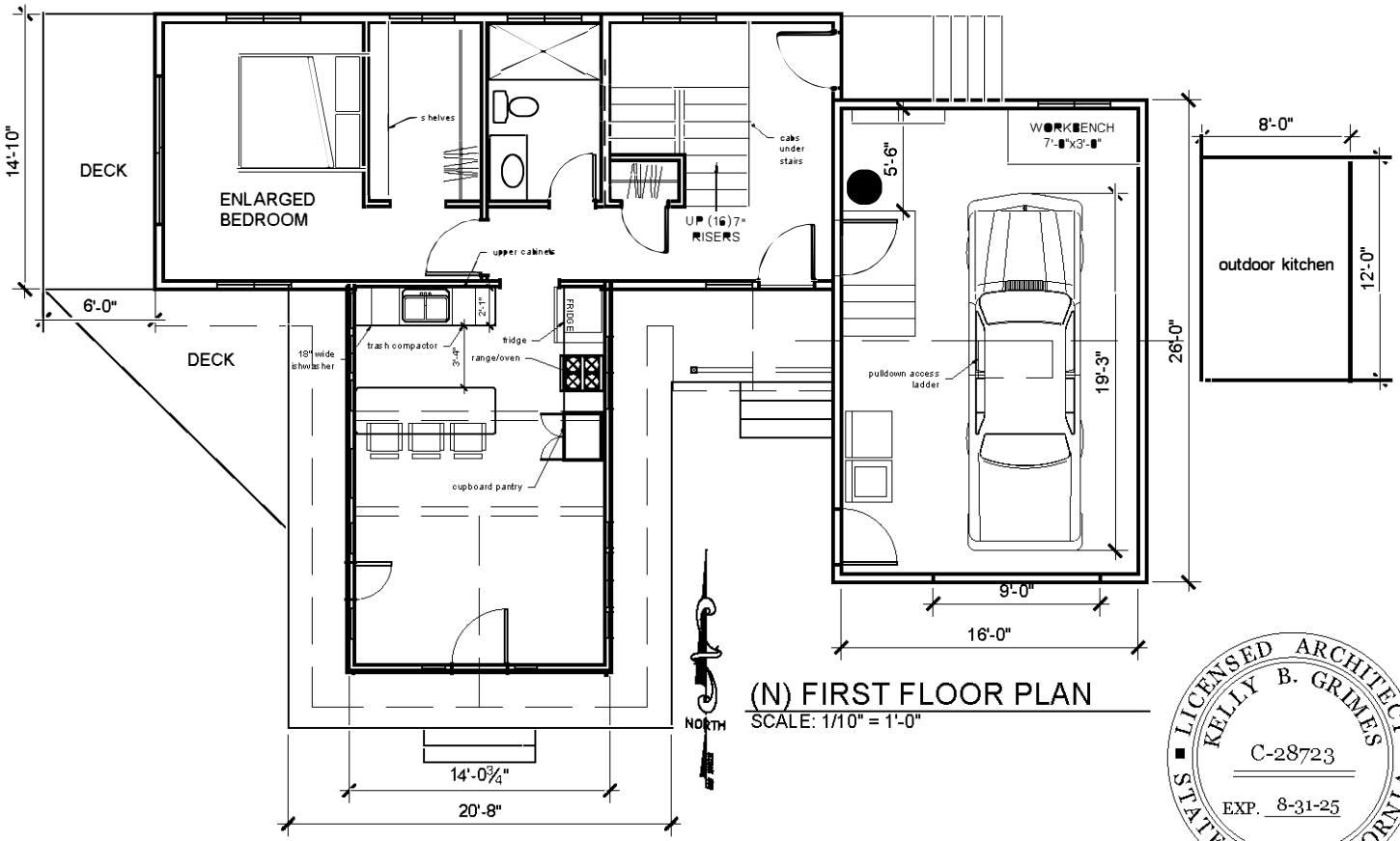
Kelly B. Grimes, Architect
P.O. Box 598
Little River, CA 95456
707-937-2904



(E) FIRST FLOOR PLAN

SCALE: 1/10" = 1'-0"





(N) FIRST FLOOR PLAN

SCALE: 1/10" = 1'-0"

LICENSED ARCHITECT
KELLY B. GRIMES
C-28723
EXP. 8-31-25
STATE OF CALIFORNIA

A REMODELED RESIDENCE FOR:

JIM & DENISE DEALBA
33389 PACIFIC WAY
FORT BRAGG, CA95437

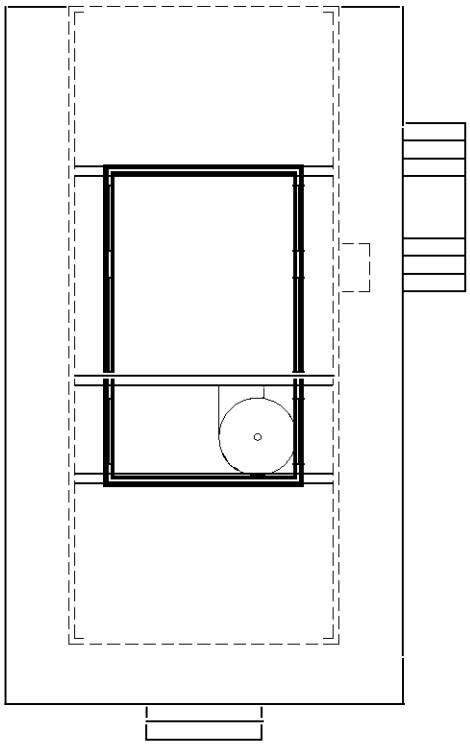
A.P. #017-320-51-00

SHEET NAME:

FIRST FLOOR PLANS
EXISTING & PROPOSED

DATE:	MARCH 14, 2026
SCALE:	AS NOTED
DRAWN BY:	KBG
JOB:	DE ALBA
SHEET NO:	A1 OF -

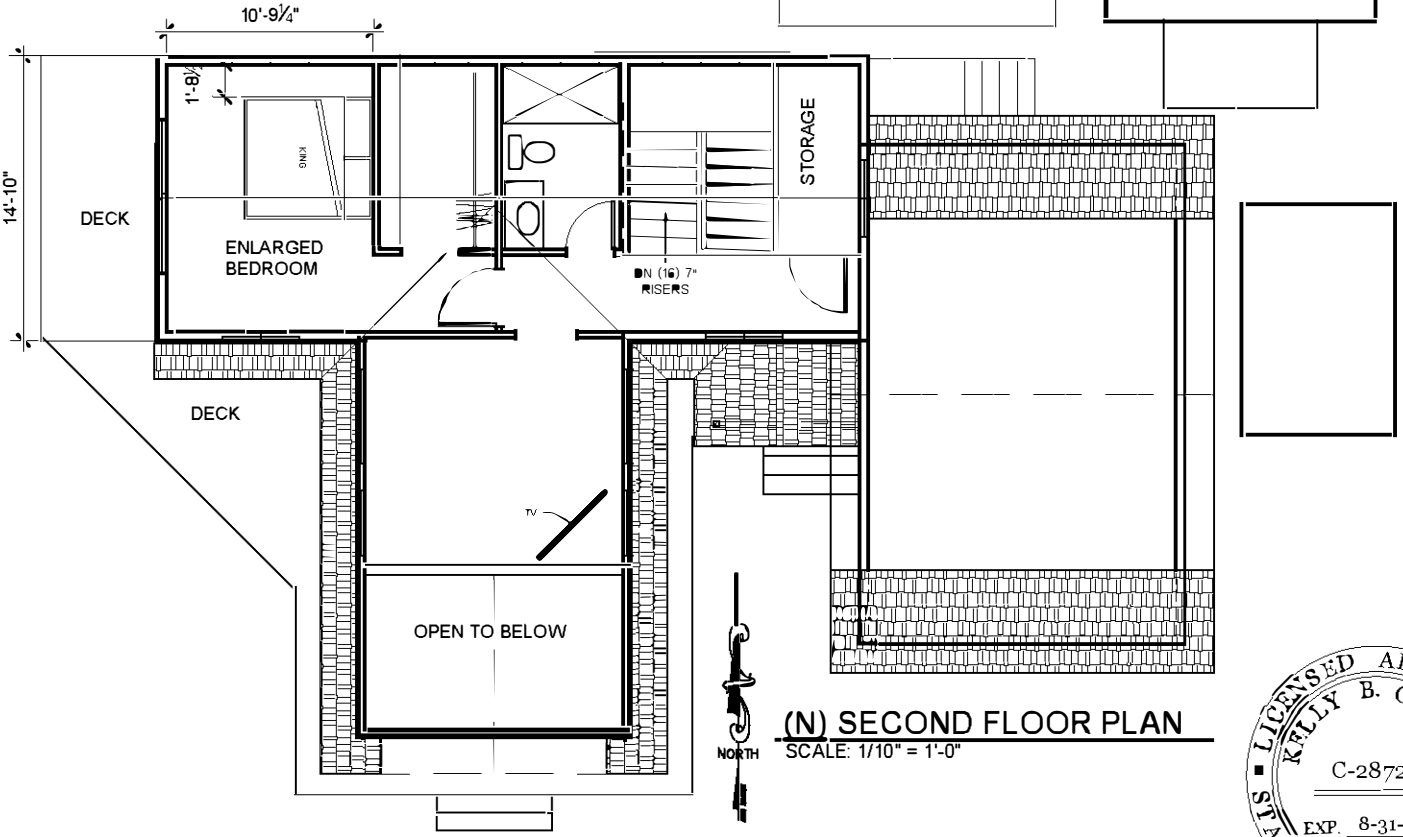
Kelly B. Grimes, Architect
P.O. Box 598
Little River, CA 95456
707-937-2904



NORTH

(E) SECOND FLOOR PLAN

SCALE: 1/10" = 1'-0"



NORTH

(N) SECOND FLOOR PLAN

SCALE: 1/10" = 1'-0"

LICENSED ARCHITECT
KELLY B. GRIMES
C-28723
EXP. 8-31-25
STATE OF CALIFORNIA

A REMODELED RESIDENCE FOR:

JIM & DENISE DEALBA
33389 PACIFIC WAY
FORT BRAGG, CA 95437

A.P. #017-320-51-00

SHEET NAME:

SECOND FLOOR PLANS
EXISTING & PROPOSED

DATE:	MARCH 14, 2025
SCALE:	AS NOTED
DRAWN BY:	KBG
JOB:	DE ALBA
SHEET NO:	A2 OF -

Kelly B. Grimes, Architect
P.O. Box 398
Little River, CA 95456
707-937-2904

June 18, 2025

Attn: Jim and Denise De Alba
31050 Turner Road
Fort Bragg, CA 95437

Subject: CDP_2023-009 DeAlba Updated Project Biological Resources Impacts

Dear Jim and Denise

The purpose of this letter is to provide a summary of project changes and potential impacts for the proposed development at 33389 Pacific Way, Fort Bragg, Ca. The proposed development has substantially changed since the initial coastal development permit (CDP) submittal, due to comments from California Coastal Commission (CCC) and County staff. A site visit was conducted with the applicant, County staff, and CDFW staff on May 13, 2025, to discuss the current project and mitigation measures.

UPDATED PROJECT

The updated project will remodel the existing cabin, add a covered outdoor kitchen, two sheds, water storage tank on concrete slab, septic tanks, water line, and leach lines. The existing driveway will also be expanded westward to create a hammerhead turnaround for emergency vehicle access and expand in the east to create a new turnout (Figure 1). The area currently developed by existing structures is approximately 0.02 acres (917 square feet). The previous project proposed adding a new residence, thereby expanding new development by 0.08 acres (3,791 square feet)[1] (Figure 2), for a combined total of 0.10 acres (4,708 square feet) of development, with 0.07 acre permanent impact and 0.03 acre temporary impact to ESHA. The updated project will expand the developed area as described above for a combined total of 0.03 acre (1,451 square feet)[1] of developed areas, a reduction of 0.07 acre (3,257 square feet) from the previous project and a total of 0.04 acre of temporary impact and no permanent impact. This adjustment to the project was identified as an alternative in the takings analysis conducted by County staff, meeting the square feet limits under alternative 1.

EXISTING CONDITIONS AND PROJECT IMPACTS

The ESHA present have not changed since the 2023 biological assessment. ESHA present include Bishop pine forest, Beach pine forest, Pacific reed grass meadow, salal-berry brambles, twinberry scrub, stream, and open water/cliff face (Figure 3).

The previous project was reported to have a direct impact and eliminate 0.03 acre (1,550 square feet) of Bishop pine forest and 0.04 acre (1,640 square feet) of Pacific reedgrass meadow with an

[1] This total does not include the leach lines or driveways/parking areas.

additional 0.02 acre (1,260 square feet) of temporary impact to Bishop pine forest to accommodate the installation of the septic system (Wynn 2023, Figure 2).

The updated project will now avoid permanent impacts to ESHA and will utilize non-ESHA areas to the greatest extent feasible. Construction of the project will impact 0.03 acre of ESHA buffer through development of permanent structures and driveways and temporarily impact 0.05 acre of Pacific reedgrass meadow and Bishop pine forest ESHA through installation of leach fields (Figure 4). No trees are proposed for removal. Additionally, special-status wildlife species may be impacted from construction-related activities (Wynn 2023[2]).

While impacts have changed, many of the avoidance and mitigation measures identified in Wynn 2023 are applicable for the current project. Applicable measures are identified below. Additionally, measures identified by CDFW during the 2025 site visit are also included.

RECOMMENDATIONS

Special-Status Wildlife

Recommendation 1: Mitigation measures 4.2.1 through 4.2.5 provided in Wynn 2023 are recommended to avoid potential impacts to special-status wildlife.

Bishop Pine Forest and ESHA Buffer

Recommendation 2: Measures 4.2.7 (Bishop Pine Forest Active Management Plan) and 4.2.8 (Invasive Plant Species Removal and Prevention) provided in Wynn 2023 are recommended to mitigate the temporary impacts to Bishop pine forest and Pacific reedgrass ESHA and ESHA buffer. These measures are met in the *De Alba Preliminary Mitigation, Management, Monitoring and Reporting Plan* (Wynn 2023).

Recommendation 3: All Performance Goals and Success Criteria measures, except 4.3.4 (Establish Pacific Reedgrass Meadow) and 4.3.3 (Reestablish Bishop Pine Habitat) are recommended. As no direct impacts to Pacific reedgrass meadow are now proposed, re-establishment is not recommended as no loss will occur. Similarly, as no permanent impacts to Bishop pine forest are proposed, re-establishment is not recommended as no loss will occur. However, temporary impacts and buffer impacts will occur; these impacts can be mitigated through invasive removal, and natural recruitment actions.

Recommendation 4: The success criteria for Performance Goal and Success Criteria measure 4.3.1 should be modified to state the following:

> Target non-native invasive species will be reduced by 95 percent in the parcel at the end of the five year monitoring period. Target species include: English ivy, English holly, scotch broom, iceplant, Himalyan blackberry, and monbretia (*Crocosmia*). Additionally, no new populations of these species or eucalyptus should be present on the parcel.

Recommendation 5: In addition to active natural recruitment activities, as identified under performance measure 4.3.2 (Natural Recruitment of Bishop pine seedlings) and implementation measure 5.2 (Bishop Pine Seedling Recruitment and Protection), existing Bishop pine tree

[2] Wynn Coastal Planning and Biology. 2023. Preliminary Mitigation, Management, Monitoring, and Reporting Plan at 33389 Pacific Way. December 8.

saplings and other native tree or shrub saplings should be incorporated as part of the natural recruitment activities. Figure 3 includes locations of all Bishop pine and beach pine saplings present in the parcel. As no Bishop pine trees are proposed for removal, no minimum ratio for mitigation is necessary. However, to promote maintenance of existing trees, Success Criteria for 4.3.2 should be expanded to include protection of the existing saplings. Success Criteria for 4.3.2 should be updated to state the following:

> At least one Bishop pine seedling should germinate following natural recruitment implementation activities for each location implementation activities occurred (i.e., if three places were treated, three trees should germinate). Each new tree should be protected in perpetuity or until natural death or becoming a hazard tree, as determined by a qualified professional. If overcrowding conditions occur due to natural recruitment, trees should be thinned appropriately to allow for the continuance of the most healthy tree. Each of the naturally occurring Bishop pine and native tree saplings identified prior to construction (Figure 3) should be avoided during construction and retained following construction completion to allow for natural recruitment of Bishop pine forest habitat.

Recommendation 6: Due to change in impacts, monitoring and reporting should be as follows:

- Monitoring and reporting on 2025 mapped saplings and any actively recruited trees through recruitment methods. Reporting should include total number of individuals observed, based on species[3] and a discussion of observations, including trees lost, tree health, and tree growth.
- Monitoring and reporting on invasive species should include photo documentation and a brief description of work conducted, including species targeted, when work was done, and an estimated area that is managed.
- Monitoring is recommended to be done annually to encourage progress towards success criteria and reporting is recommended to be done at the end of the five years.

Recommendation 7: Implementation measure 5.3 (Bishop Pine Forest Understory Enhancement and Maintenance) should be incorporated into the buffer enhancement actions. However, as no minimum cover is recommended due to change in impacts, incorporation of supplemental plantings is not necessary. Alternatively, the vegetation of ESHA land covers should not be managed except for the purposes identified under the permit conditions.

Recommendation 8: Install low-symbolic fencing along the existing edge of ESHA to deter entry. The fencing should be installed along the northern edge of the yard and around the existing clearing where the leach field is to be installed. Figure 1 includes proposed location of the fencing.

Recommendation 9: Implementation measures Pathogen Spread Minimization, Fuel Load Reduction, Monitoring & Project Adaptation, and Reporting should be included as part of the ESHA protection measures, as modified based on the updated project.

[3] It should be noted that many of the existing saplings expressed symptoms of pathogens, therefore, it should be expected that a reduction in number of saplings is likely.

CONCLUSION

The updated project is a drastic reduction in the project previously proposed with development reduced by 0.07 acres for a total developed area of 0.03 acres, and impacts to ESHA reduced from 0.10 acre to 0.04 acre. The updated project will not have permanent impacts to literal extent of ESHA. With incorporation of the recommendations above, the project is unlikely to significantly degrade ESHA and is the least environmentally damaging alternative.

If you have any questions, contact me at korhummel@wra-ca.com.

Sincerely,



Rhiannon Korhummel
Associate Biologist

Attachment: Figure 1. Updated Site Plan
Figure 2. Previous Site Plan
Figure 3. Potential ESHA
Figure 4. Current Site Plan Impacts

Figure 1. Revised Site Plan

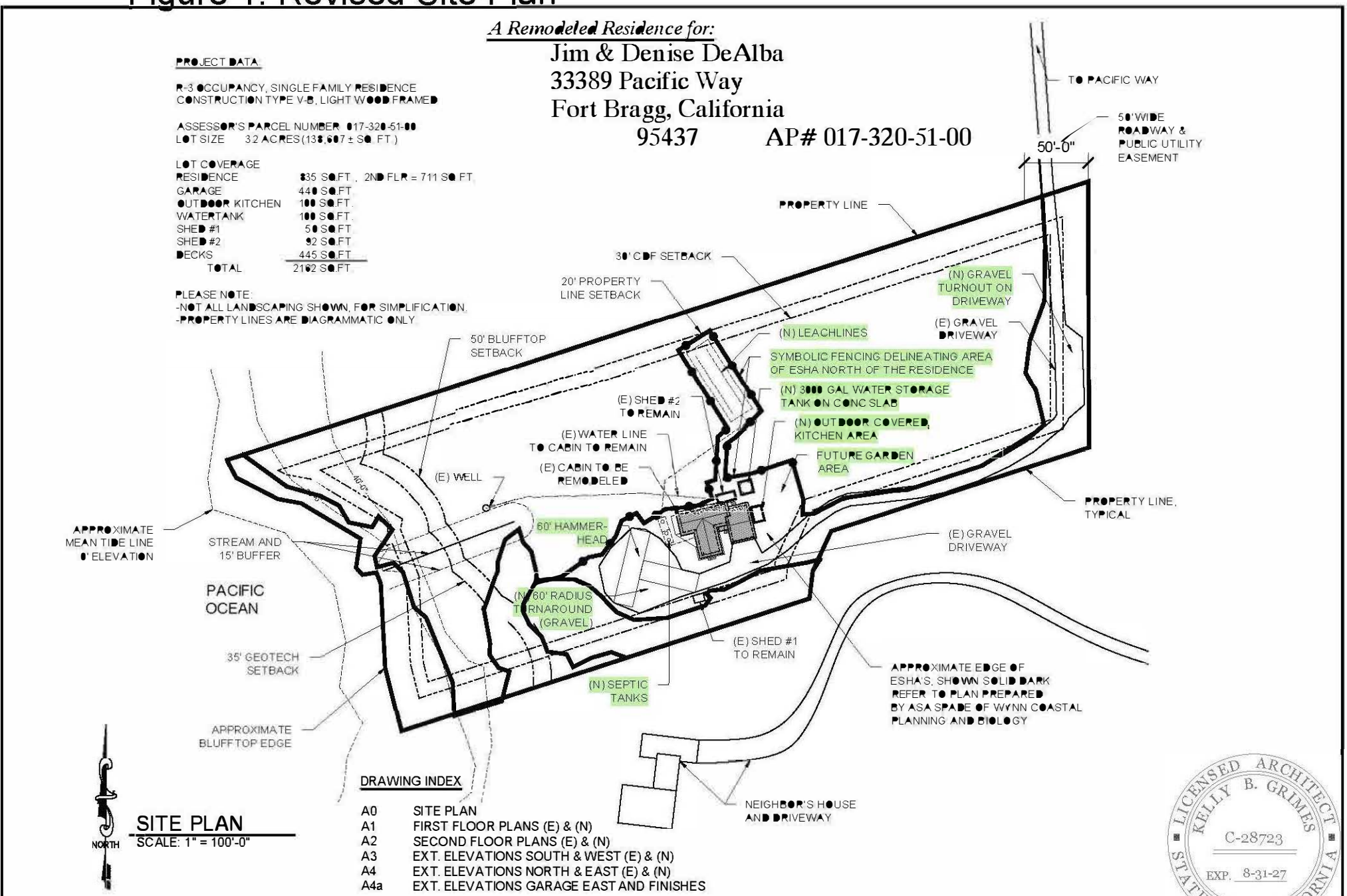


Figure 2. Previous Site Plan

Lands of De Alba
Section 25, Township 18 North,
Range 18 West, Mount Diablo Meridian
Mendocino County, CA

General Notes

General Plan Designation:	RR 5 (2)
Zoning District:	RR 5
Urban/Rural:	Urban
Highly Scenic Area:	No
Proposed Land Use:	Convert existing cabin to ADU; CDP for SFR
Appealable to Coastal Commission:	Yes
Entitlement Permit Type:	CDP
Yard Setbacks:	20' front & rear & sides
CalFire Setbacks:	30'
Corridor Preservation Setback:	n/a
Height Limit:	28'
Environmental Constraints:	Yes
Potential Geologic Hazards:	Yes, 36' setback
Landscaping:	No
Water Source:	On-site well
Wastewater Disposal:	On-site septic
Tree Removal:	None

Lot Coverage Tabulation Gross Site Area:

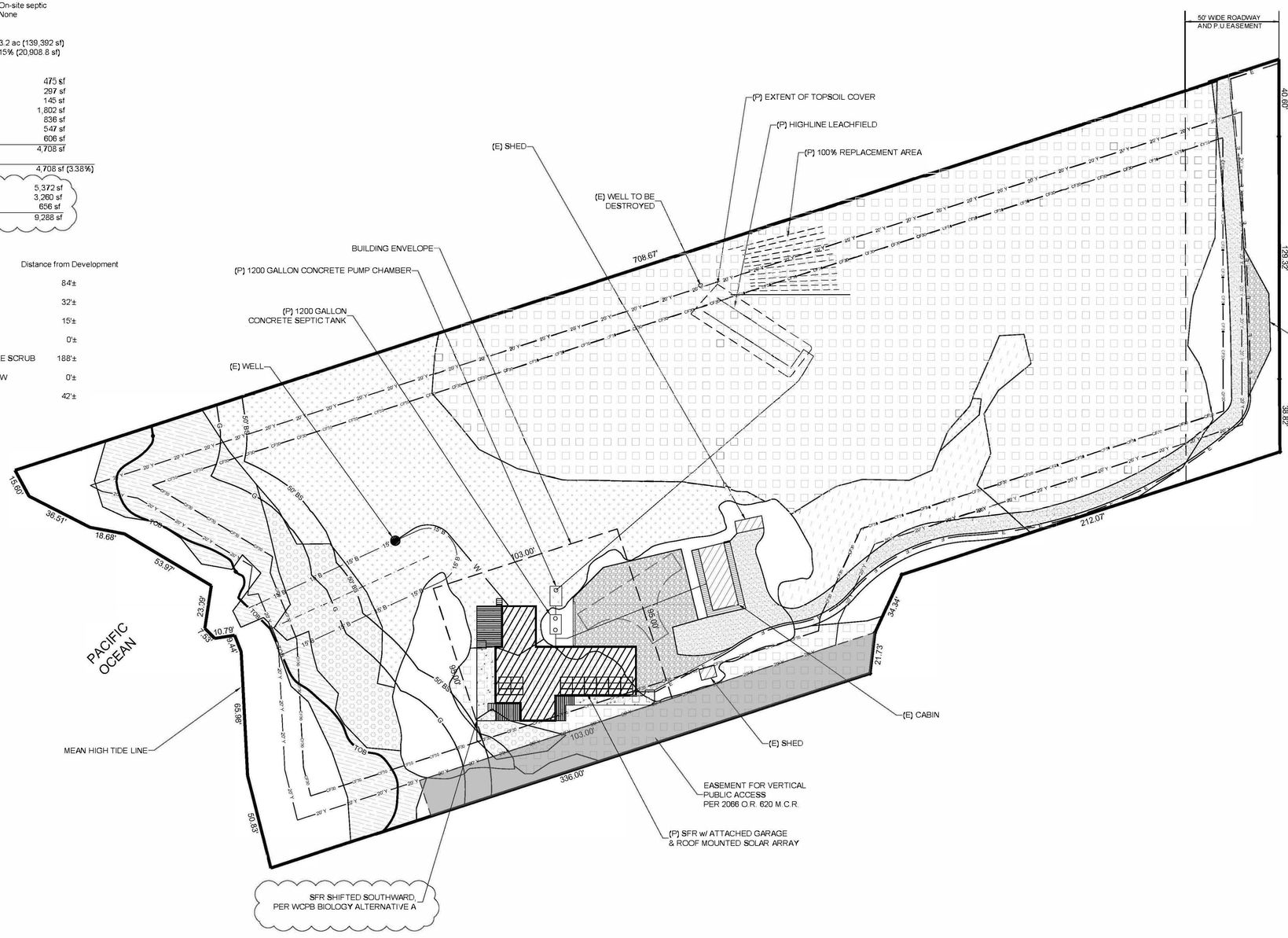
Gross Site Area:	3.2 ac (139,392 sf)
Maximum allowable lot coverage:	15% (20,908.8 sf)

Lot Coverage:

(E) Footprint - Cabin:	475 sf
(E) Footprint - Decks:	297 sf
(E) Footprint - Sheds:	145 sf
(P) Footprint - SFR:	1,802 sf
(P) Footprint - Attached Garage:	836 sf
(P) Footprint - Deck:	547 sf
(P) Footprint - Concrete Walk & Patio:	606 sf
Total Building Footprint:	4,708 sf
Total Lot Coverage (Footprint):	4,708 sf (3.38%)
(E) Driveway & Parking:	5,372 sf
(P) Driveway, Parking & Path:	3,260 sf
(P) Turnout:	656 sf
Total Driveway & Parking:	9,288 sf

Sensitive Resources:

Legend	Type	Distance from Development
	TWINBERRY SCRUB	84'±
	STREAM	32'±
	BEACH PINE FOREST	15'±
	BISHOP PINE FOREST	0'±
	SALMONBERRY - WAX MYRTLE SCRUB	188'±
	PACIFIC REEDGRASS MEADOW	0'±
	SALAL - BERRY BRAMBLE	42'±

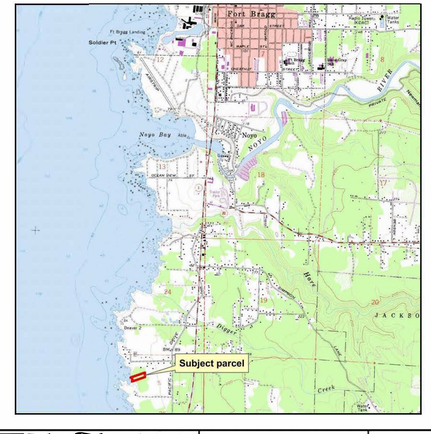


LEGEND:

- (E) GRAVEL DRIVEWAY
- (P) GRAVEL DRIVEWAY
- 15' BUFFER
- 50' BUFFER
- 100' BUFFER
- CAL FIRE 30' YARD SETBACK
- (E) FENCE
- 20' YARD SETBACK
- APPROXIMATE TOP OF BLUFF
- 50' BLUFF SETBACK
- 36' GEOTECHNICAL SETBACK
- (P) WATER LINE TRENCH
- (P) ELECTRICAL TRENCH
- EASEMENT FOR VERTICAL PUBLIC ACCESS PER 2066 O.R. 620 M.C.R.

N W E S

0' 30' 60' 90'



Design review, not meant for construction.

Base on a map prepared by:
Forrest Francis, Land Surveyor
P. O. Box 1162
Mendocino, California 95460
Phone: (707) 937-9900 E-Mail: ffrancis@mcn.org
www.mendocinosurveyor.com

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

De Alba

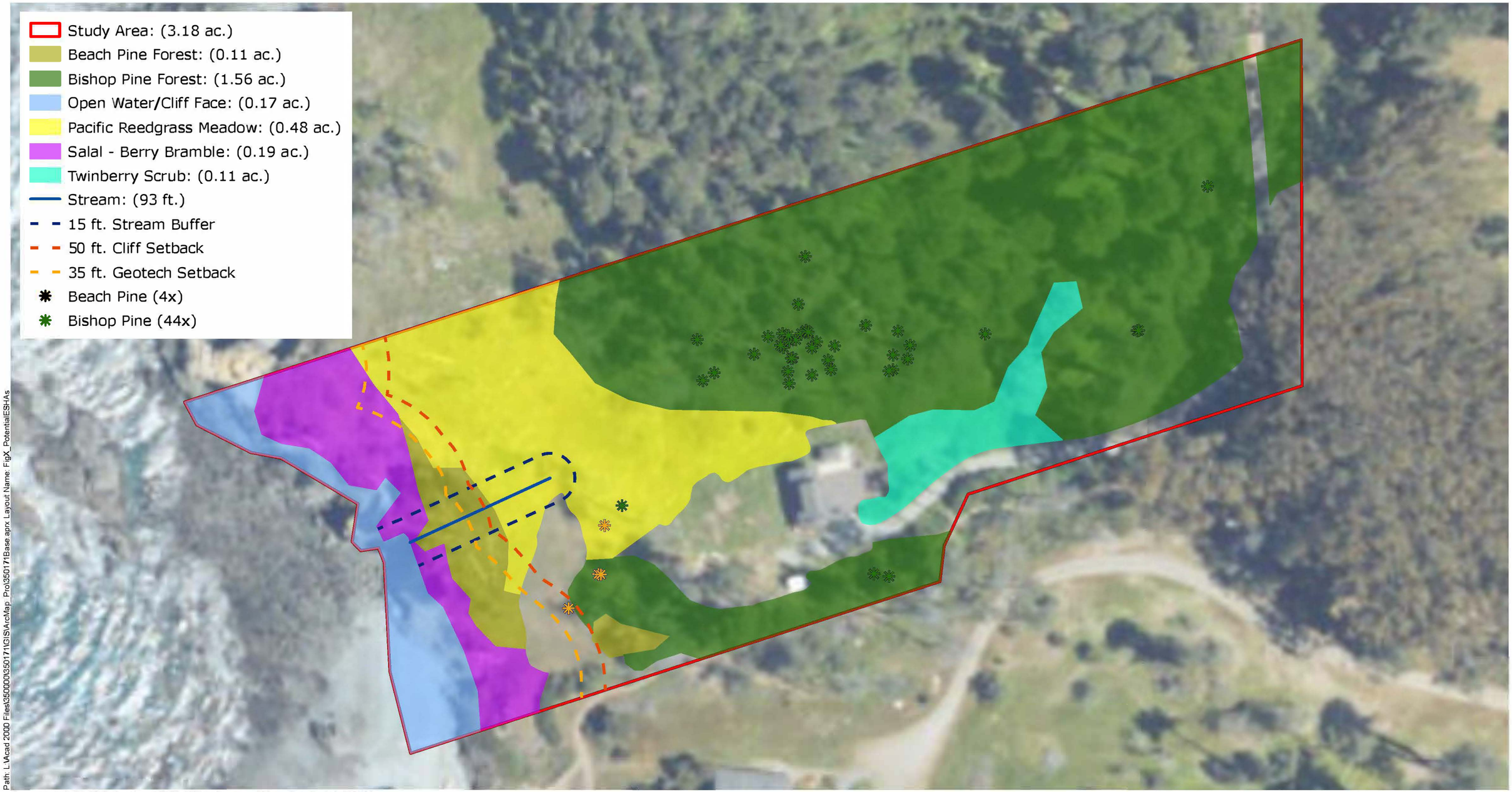
33389 Pacific Way
Fort Bragg, CA 95437

APN: 017-320-51-00
DRAWN BY: TH
DATE: 2/15/24
SCALE: AS SHOWN
APPROVED BY: TJ

REVISION	BY	DATE
Revised CCC comment number/location, Call Fire Turnout	TT	3/6/24

SHEET 1 OF 1 SHEETS

SITE PLAN | 1:30 | 1



Path: L:\Acad 2000 Files\3500001\3501711\GIS\ArcMap_Pro\3501711Base.aprx Layout Name: FigX_PotentialESHAs

Sources USDA NAIP Imagery 2022, WRA | Prepared By: gillespie, 6/14/2025

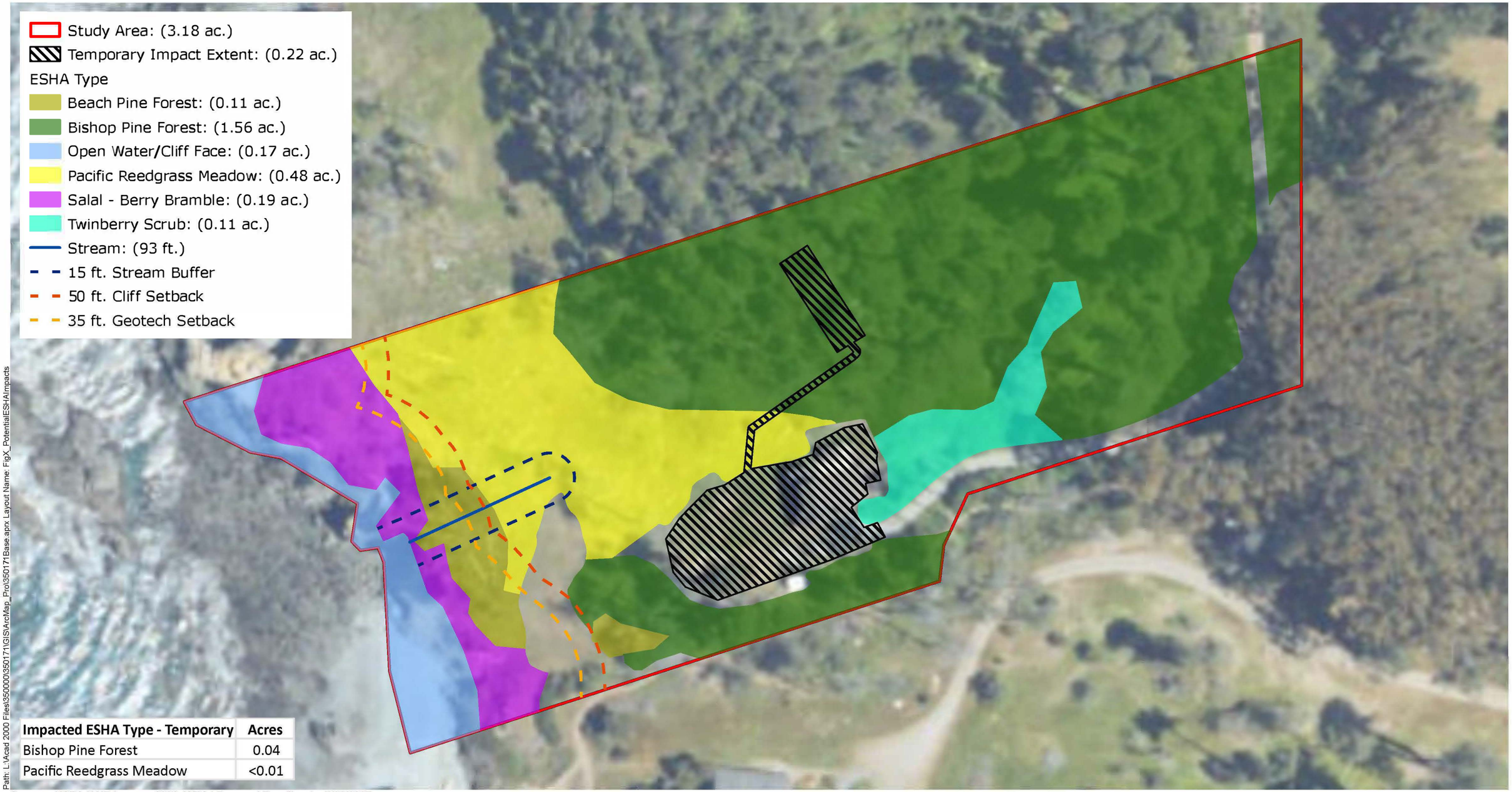
Figure 3. Potential ESHAs

DeAlba Residence
33389 Pacific Way
Fort Bragg, CA

0 50 100 Feet

N

wra Environmental Consultants



Impacted ESHA Type - Temporary	Acres
Bishop Pine Forest	0.04
Pacific Reedgrass Meadow	<0.01

Path: L:\Acad 2000 Files\3500001\3501711\GIS\ArcMap_Pro\3501711Base.aprx Layout Name: FigX_PotentialESHAImpacts

Sources USDA NAIP Imagery 2022, WRA | Prepared By: gillespie, 5/23/2025

Figure 3. Potential ESHA Impacts

DeAlba Residence
33389 Pacific Way
Fort Bragg, CA

0 50 100 Feet N

wra Environmental Consultants

State of California
County of Santa Clara

I, the undersigned, do hereby swear, certify, and affirm that I am over the age of 18 and a resident of the State of California. I have personal knowledge of the facts in this affidavit, and, if called as a witness, could testify competently about them. I declare under penalty of perjury that the foregoing is true and correct.

My Potter Valley relatives owned property that includes the parcel identified as 33389 Pacific Way, Fort Bragg, CA 95437. My understanding is that 7 of my relatives from Potter Valley were co-owners of a large parcel in the 1950's. At the time they owned the property, there was/were a minimum of 3 structures on the property. My father started going to stay and camp at the property when he was a young man. We have a photo of him there with the primary "cabin" in the background. He took us camping there when we were young. The years that our family went there with our father were approximately around 1968 to 1977. There was always a cabin on the property.

The primary cabin next to the main campsite had one section that was a bedroom that was used by one of my aunt's and uncle. They slept in the cabin while we were there. The other part of the cabin stored the wood burning stoves and some chairs we used while camping there. The cabin was there as long as I can remember since I first started going there around 1968. It had been there since at least 1954, as shown in the attached photos.

The last names of some of the Potter Valley owners were Eddie, and Schurr, and Whitcomb. We used to call it Eddie's camp, and some of my Potter Valley relatives called it Potter Valley camp. Some of the relatives that camped there were later known as "the three sisters." They were my Aunt Olive, Aunt Mable, and Grandma Geneva. They were all originally Spotswood sisters from Potter Valley. They are very well known and are in the Mendocino history book that's sold in the Fort Bragg history museum. So this property is actually part of that heritage and has a well-known prominence.



[signature of affiant]
Brad Christofferson
10388 Normandy court, Cupertino, CA 95014
[address of affiant, line 1]

CERTIFICATE OF ACKNOWLEDGMENT OF NOTARY PUBLIC

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document, to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Santa Clara)

On 02/01/2021 before me, Ritu Bhagra, NOTARY PUBLIC
(insert name and title of the officer)

personally appeared Bradley Christofferson.
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument ~~and acknowledged to me~~ that he/~~she~~/they executed the same in his/~~her~~/their authorized capacity(ies), and that by his/~~her~~/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

RITU BHAGRA
COMM. #2294068
Notary Public - California
Santa Clara County
My Comm. Expires June 20, 2023

Signature Ritu (Seal)



Coast Trip July 1954



Attachment A Christofferson Calm Affidavit

PROPOSAL ABSTRACT:

This parcel is located in Fort Bragg and is accessed off of Pacific Way. The parcel was created through the subdivision process in 1989/1990. The parcel supports an existing precode one bedroom cabin and two wells.

The owners of the parcel would like to build a two bedroom, single family residence and retain the existing cabin as a one bedroom Accessory Dwelling Unit (ADU).

A disposal system was identified for the parcel as part of the subdivision process and the system was sized to accommodate a total of three bedrooms, as per subdivision requirements. The approved leachfield cannot be used as it is located in a road easement that was developed after the leachfield approval. As such, a new disposal system will need to be developed.

Area for sewage disposal is limited as a significant portion of the parcel contains ESHAs and associated ESHA development buffers.

Soil profiling was conducted in the the identified building envelope. A significant portion of the building envelope is not available for sewage disposal due to the setback from the existing well and shallow soil conditions. Profile P1 was excavated to a depth of 60 inches and sandy clay loam/sandy loam subsoils were observed. Soil mottling was observed at depth of 39 inches. Profile P2 was excavated to a depth of 45 inches and sandy clay loam, sandy loam subsoils were observed. Soil mottling was observed at a depth of 21 inches. Additional augured profiles were conducted to the west of profiles P1 and P2. All augured profiles exhibited shallow (less than 24") soil conditions to fractured rock. Given the limited area, the variable soil conditions as well as the topography of the area available within the building envelope, a sufficiently sized primary and replacement leachfield cannot be developed within the building envelope.

Additional profiling was conducted to the north of the cabin outside of the building envelope in an area that would require minimal tree removal. Profiles P3 and P4 were observed to a depth of 72 inches and sandy loam subsoils were observed in each profile. Soil mottling was observed at a depth of 48 inches in P3 and 44 inches in P4 and will be used to represent the highest anticipated level of winter groundwater.

A Pressurized Non-Standard Highline system is proposed at profile P3 and is sized to accommodate a total of three bedrooms. The replacement area will be located at profile P4 and will consist of a Drip-Tubing leachfield with aerobic treatment. The systems will be placed in the county's Non-Standard Systems Program.

As is required for the allowance of an ADU on the parcel, a water production test was conducted on one of the existing wells. The results of the test are included with this report.

CARL RITTIMAN & ASSOCIATES, INC.
Certified Professional Soil Scientist
PO Box 590 • Mendocino CA 95460

Christina Pallmann
Mendocino County Division of Environmental Health
120 W. Fir Street
Fort Bragg, CA 95437

Date: September 2nd, 2022

Re: 33389 Pacific Way, J. & D. DeAlba
Proof of water test

Christina,

As required to allow for an ADU on this parcel, a 17-hour proof of water test was conducted on an existing well. Attached you will find all drawdown and recovery data,as well as graphical analyses of the data.

The type of test procedure used to determine a wells' production is referred to as a sustained yield test. The aim of this test is to try to stabilize the water level within the well, relatively near the pump inlet. This indicates that the flow of water being pumped out of the well is equal to the amount of water entering the well. The results of the test are as follows:

Well 'A'

The well tested is a drilled well, cased with 5.5" diameter PVC casing. The total depth of the well was measured to be 80 feet. The pump inlet is assumed to be set at 70 feet. The test was started at 10:45 A.M., on August 23rd, 2022. The static water level in the well was 10' 0" at the start of the test. The water level stabilized in the well near the depth of 49'4.5", 210 minutes into the test, while pumping at a flow rate of 3.1 gallons per minute. The water level remained fairly stable for the remaining 810 minutes of the test.

The recovery of this well was monitored for 300 minutes following pump shut off. In that time, the total drawdown of 39' 5" recovered 32' 3" for a 82% recovery of the total drawdown.

The well tested has been proven to meet the requirements set for proof of adequate water for this proposed development.

If you have any questions regarding the tests, please feel free to contact our office. Thank you.

Sincerely,

Andrew Kawczak
Associate

Phone 707-937-0804 • Fax 707-937-0575 • e-mail andy.carlrittiman@gmail.com

AQUIFER TEST DATA SHEET

Test Date: 8/23&24/2022

Project:DeAlba/33389 Pacific Way
Well Designation:A
Total Depth:80"
Pump Inlet Depth:70' (assumed)

Type of Test: 17 hour Proof of Water
Well Diameter (I.D.): 5" PVC
Static Water L 10' 0"

DRAWDOWN

Clock Time	Elapsed Time	Change in Time	Depth to Water	Speed rate	Slowed Rate	Second per Gallon
10:45a.m.	0		10' 0"			
10:50	5	5	32'7"			7.14
10:55	10	5	35' 4.5"			24.3
11:00	15	5	34' 3"			21.99
11:05	20	5	34' 0"	18.09		23.8
11:10	25	5	33' 10"	15.87		22
11:15	30	5	35' 1"			17.2
11:25	40	10	37' 10.5"			19.32
11:35	50	10	39' 11"			18.68
11:45	60	10	41' 2.5"			19.2
11:55	70	10	42' 2"			19
12:05p.m.	80	10	43'6.5"	18.65		17.3
12:15	90	10	44' 8.5"			19.86
12:25	100	10	44' 10"			19.73
12:35	110	10	42' 0"	18.88		25.38
12:45	120	10	43'11.5"			19.11
01:05	140	20	45' 5"		19.5	19.02
01:25	160	20	46'4"			19.07
01:45	180	20	47' 7"			19.21
02:15	210	30	49' 4.5"		19.54	19.09
02:45	240	30	49'6.5"			19.46
03:15	270	30	49' 3"			19.59
03:45	300	30	49' 5"			19.52
04:15	330	30	49' 6"			19.57
04:45	360	30	49' 4"			19.66
05:45	420	60	49' 7"			19.6
06:45	480	60	49' 5"			19.71
07:45	540	60	49' 4"			19.75
08:45	600	60	49' 6"			19.56
09:45	660	60	49' 6.5"			19.54
10:45	720	60	49' 3"			19.59
11:45	780	60	49'4"			19.62
12:45:00a.m.	840	60	49' 5"			19.53
01:45	900	60	49' 5"			19.54
02:45	960	60	49' 5.5"			19.49
03:45	1020	60	49'5"			19.56

AQUIFER TEST DATA SHEET

Test Date: 8/23&24/2022

Project:DeAlba/33389 Pacific Way
Well Designation:
Total Depth:
Pump Inlet Depth:

Type of Test: 17 hour Proof of Water
Well Diameter (I.D.)-- 5" PVC
Static Water Level:

RECOVERY

Clock Time	Elapsed Time	Change in Time	Depth to Water	Speed rate	Slowed Rate	Gallons Per Minute
03:55	10	10	41' 2"			
04:05	20	10	35' 7"			
04:15	30	10	31' 5"			
04:25	40	10	29' 7"			
04:45	60	20	27' 4"			
06:45	180	120	23' 6"			
08:45	300	120	17' 2"			

STATE OF CALIFORNIA-THE NATURAL RESOURCES AGENCY
DEPARTMENT OF FORESTRY AND FIRE PROTECTION
MENDOCINO UNIT
17501 N. HWY 101
WILLITS, CA 95451

GAVIN NEWSOM, GOVERNOR

STATE FIRE SAFE REGULATIONS

CONDITIONS OF APPROVAL

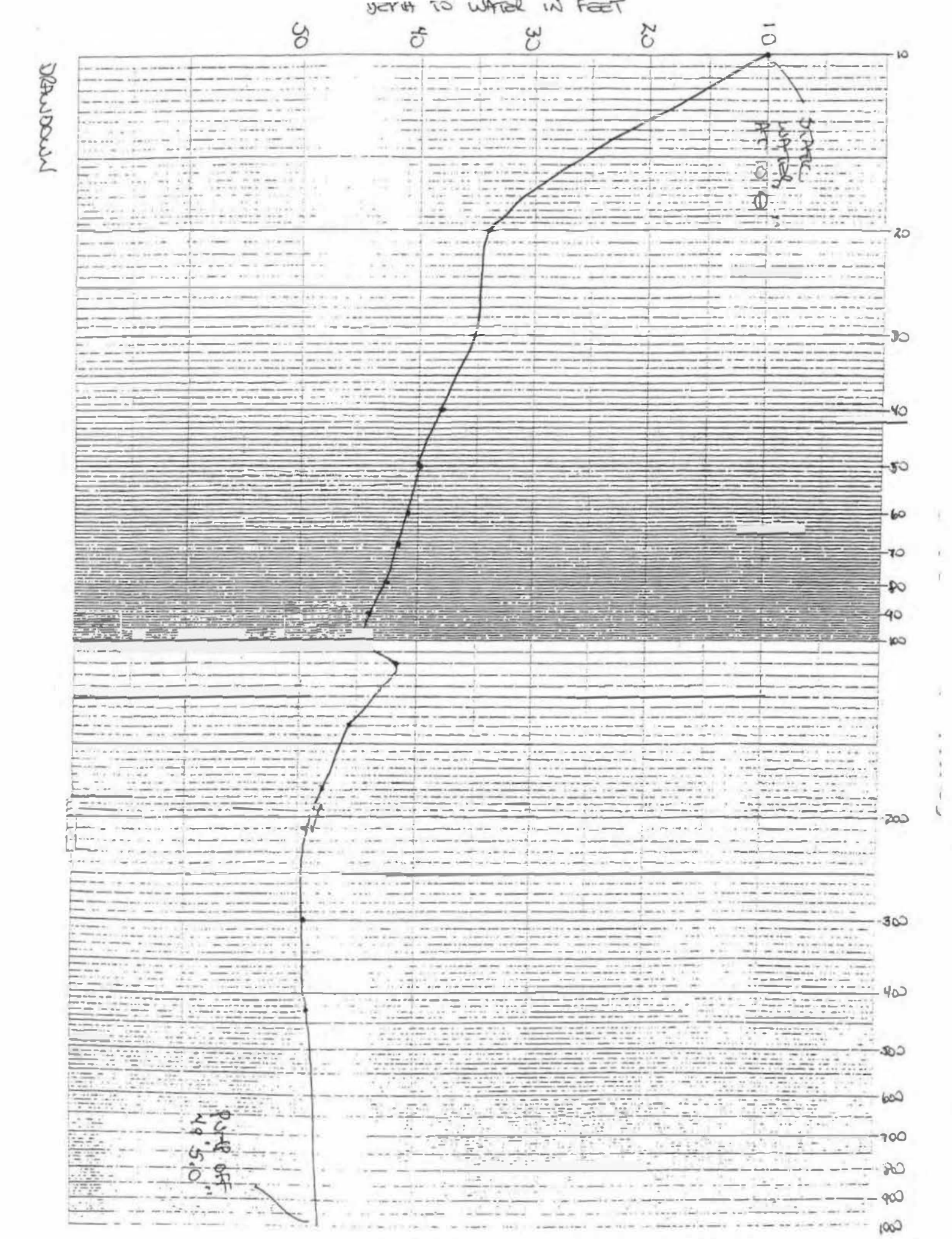
Applicant Name:	**Jim and Denise De Alba**				
Project Address:	**33389 Pacific Way**				
City:	**Fort Bragg**	**State:**	**CA**	**Zip Code:**	**95437**
Review Date:	**3-15-2023**	**APN:**	**017-320-51-00**		
CAL FIRE #:	**30-23**	**Building Permit #:**			

The CAL FIRE Mendocino Unit has reviewed this Building Permit application. Based upon the Unit's review, the following conditions shall be incorporated prior to approval of permit issuance as required by Title 14 of the California Code of Regulations, Division 1.5, Chapter 7, Sub-chapter 2, Article 1, §1270.03

You must comply with the following marked (**X**) standards below to obtain FINAL CLEARANCE

☐ **ROAD STANDARD §1273.01-§1273.06, §1273.08 - §1273.09**

- All roads shall be constructed to provide two 10' traffic lanes, not including shoulder and striping.
- Roadway shall be designed and maintained to support 75,000lb and provide an aggregate base. Project applicant shall provide engineering specifications to support design if requested.
- The grades for all roads, streets, private lanes, and driveways shall not exceed 16%.
- No roadway shall have an inside radius curvature of less than 50' and additional width of 4'shall be added to curves of 50-100'.
- Turnarounds are required on driveways and dead-end roads. The minimum turning radius shall be 40 feet not including parking. If a hammerhead "T" is used the top of the "T" shall be a minimum of 60' in length.
- Turnouts shall be a minimum of 12' wide by 30' long and 25' tapers on each end.
- All one-way roads shall provide a minimum 12' traffic lane, not including shoulders. All one-way roads shall connect to a two-lane road at both ends. In no case shall it exceed 2640' in length and a turnout shall be placed at the approximate mid-point.


DRAWDOWN
DEPTH TO WATER IN FEET
50
40
30
20
10
10
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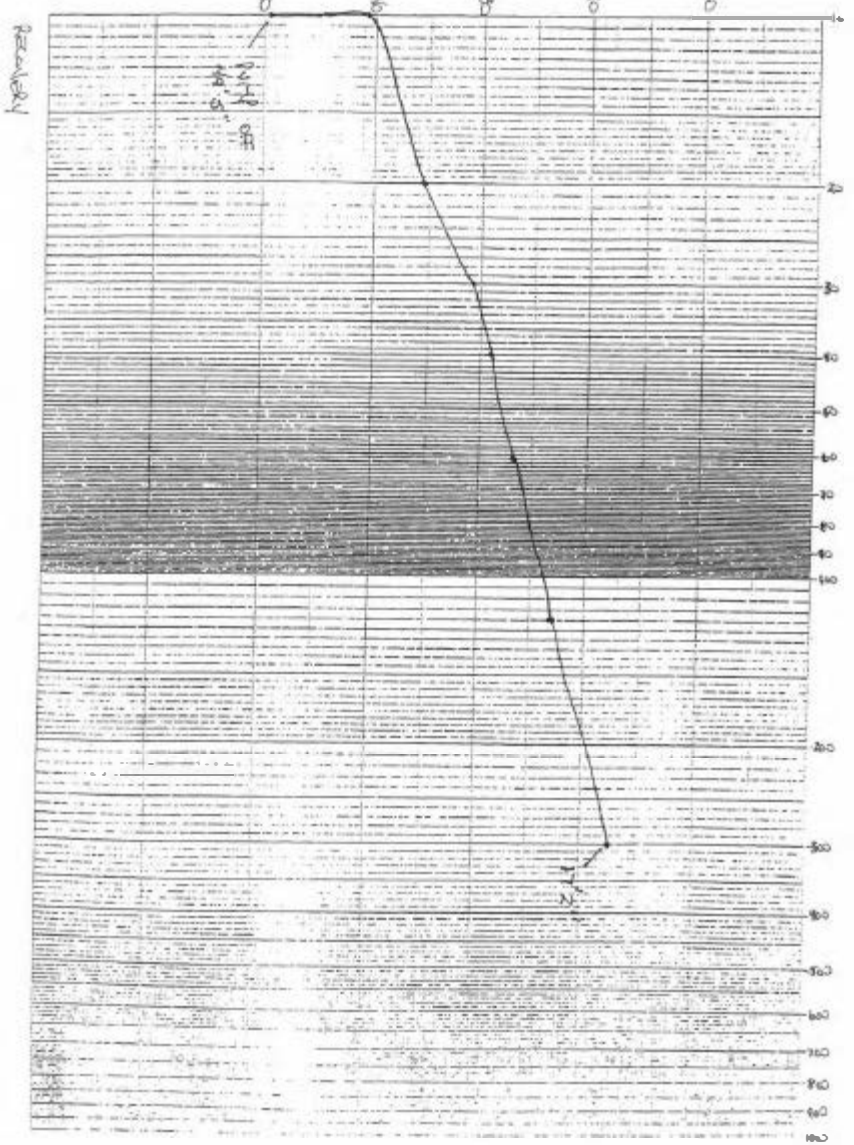
70
80
90
100
200
300
400
500
600
700
800
900
1000



Maximum lengths for dead end roads:

- Parcels zoned less than 1 acre- 800'
- Parcels zoned 1-4.99 acres-1320'
- Parcels zoned 5-19.99 acres-2640'
- Parcels zoned 20 acres or larger- 5280'.
- Where parcels are zoned 5 acres or larger turnarounds shall be provided at maximum 1320' intervals.
- Each dead-end road shall have turn around constructed at its a terminus.

☒ **DRIVEWAY STANDARD §1273.01(c), §1273.02(b), §1273.03, §1273.05, §1273.06, §1273.09**

- Minimum 10' wide with 14' unobstructed horizontal clearance and 15' unobstructed vertical clearance.
- Driveway shall have an all-weather surface, with no more than 16% grade, and minimum 50' radius inside curvature on all turns.
- Driveways exceeding 150' but less than 800' require a turnout near the midpoint, driveways exceeding 800' shall provide turnouts no more than 400' apart. Turnout shall be a minimum of 12' wide, 30' long with 25' tapers on each end.
- A turnaround shall be provided to all building sites on driveways more than 300' in length and shall be within 50' of the building, a 40' radius turnaround or 60' hammerhead "T" shall be utilized.
- Gates shall be a minimum 14' wide, all gates providing access shall be located at least 30' from the roadway. Security gates shall have an approved means of emergency operation.

☐ **ROADWAY STRUCTURE/BRIDGE STANDARD §1273.07**

- All roadway structures shall be constructed to carry at least the maximum load and minimum vertical clearance as required by Vehicle Code Sections 35250, 35550, and 35750.
- The bridge shall be constructed and maintained in accordance with the American Association of State and Highway Transportation Officials Standard Specifications for Highway Bridges, 17th Edition. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus.
- Vehicle load limits shall be posted at both entrances to bridges.
- A bridge with only one lane shall provide for unobstructed view from one end to the other with turnouts at both ends.

☐ **SIGN STANDARD §1274.01- §1274.02**

- Size of letters, numbers, and symbols for street and road signs shall be a minimum 4" letter height, ½" stroke, reflectorized, and contrasting with background color of sign. Visible from both directions of travel for at least 100'.
- Height of street and road signs shall be uniform county wide, newly constructed, or approved public and private roads must be identified by a name or number through a consistent countywide system. Signs shall be placed at the intersection of those roads, streets, or private lanes.
- A sign identifying traffic access or flow limitations, including but not limited to weight or vertical clearance limitations, dead end road, one way road, or single lane conditions shall be placed at the intersection preceding the access limitation and no more than 100' before such access limitation.

☒ **ADDRESS STANDARD §1274.03- §1274.04**

- Address must be posted at beginning of construction and maintained thereafter.
- Minimum 4" letter height, ½" stroke, reflectorized with contrasting background, visible from both directions of travel.
- Multiple addresses on a single driveway shall be mounted on a single post.
- Address shall be placed at each driveway entrance

☐ **EMERGENCY WATER STANDARD §1275.01- §1275.04** **Not Required**

- Water systems equaling or exceeding the National Fire Protection Association (NFPA) 1142, 2012 Edition and California Fire Code CCR 24 part 9, shall be accepted as meeting the requirements of this article.
- The hydrant or fire valve shall be 18" above grade, 8' from flammable vegetation, no closer than 4' and no further than 12' from roadway, and in a location apparatus using it will not block the roadway.
- The hydrant shall be not less than 50' nor more than ½ mile from the building it is to serve, shall be located at a turnout or turnaround along the driveway to that building or along a road that intersects with driveway.
- The hydrant head shall be 2 ½" National Hose male thread with cap for pressure and gravity flow systems, and 4 ½" for draft systems. They shall have suitable crash protection.
- A reflectorized blue marker minimum of 3" diameter shall be mounted on a fire-retardant post within 3' of the hydrant. The marker shall be no less than 3 'or more than 5' above grade.

STATE OF CALIFORNIA-THE NATURAL RESOURCES AGENCY
DEPARTMENT OF FORESTRY AND FIRE PROTECTION
MENDOCINO UNIT
17501 N. HWY 101
WILLITS, CA 95451

☒ **MAINTAIN DEFENSIBLE SPACE AND FUELS MODIFICATION STANDARD §1276.01- §1276.04**

- All parcels shall provide a minimum 30' setback for all buildings from property lines and/ or the center of the road.
- Fuel modification and disposal of flammable vegetation and fuels caused by site development and construction, shall be completed prior to road construction or final inspection of building permit.
- Maintain defensible space 100' from each side and front and rear of the structure(s), but not beyond the property line. The intensity of fuels management may vary within the 100' perimeter of the structure, the most intense being within 30' of the structure.
- Remove that portion of a tree that extends within 10 feet of a chimney or stovepipe.
- Maintain a tree, shrub, or other plant adjacent to or overhanging a structure.
- Maintain the roof structure free of leaves, needles, or other vegetative materials.

☐ EXCEPTION REQUEST GRANTED	☐ EXCEPTION REQUEST DENIED
• See attached letter	• See attached letter

Application Reviewed By:	**Levi Linderman, Fire Captain Mendocino Unit**

Please note that the comments noted above are based on a CAL FIRE State Fire Safe Regulation review only. There may be additional comments or information requested from other County Departments or Divisions reviewing this application submittal package. Should you have any questions, you may contact the CAL FIRE Mendocino Unit at (707) 459-7414 or email at Mendocino4290@fire.ca.gov.

For current State Fire Regulations, please visit https://govt.westlaw.com/calregs.

California Code of Regulations
Title 14- Natural Resources
Division 1.5- Department of Forestry
Chapter 7- Fire Protection
Subchapter 2- SRA/VHFHSZ Fire Safe Regulations

TAKINGS INFORMATION

Jim and Denise De Alba
33389 Pacific Way, Fort Bragg

1. *When the property was acquired, and from whom:*
   January 22, 2021

2. *The purchase price paid for the property:*
   $802,000 ($804,592.57 includes purchase price and all closing costs)

3. *The fair market value of the property at the time it was acquired and the basis upon which fair market value was derived.*
   We estimated the fair market value to be $802.000 based on comparable properties with similar characteristics

4. *Whether a general plan, zoning, or similar land use designations applicable to the property changed since the time the property was purchased:*
   No

5. *At the time the property was purchased, or at any subsequent time, whether the project* [has] *been subject to any development restriction(s) (e.g., restrictive covenants, open space easements, etc.), other than the land use designations referred to in the preceding question:*
   - **Deed restriction per Book 2203 Page 504 of Official Records**
   - **Easement for Vertical Public Access per Book 2066 Page 620 of Official Records**

6. *Whether the size or use of the property changed in any way since it was purchased:*
   No

7. *Whether a portion of, or interest in, the property was sold or leased since the time the applicants purchased it:*

   No

8. *A copy of any title report, litigation guarantee or similar document that might have been prepared in connection with all or a portion of the property, together with a statement of when the document was prepared and for what purpose (e.g., refinancing, sale, purchase, etc.):*

   Attached

9. *The approximate date and offered price of any offers to buy all or a portion of the property since the time the applicants purchased the property:*

   N/A

10. *The costs associated with ownership of the property on an annualized basis for the last five calendar years. These costs should include, but not necessarily be limited to, the following:*

    a. *Property taxes*: **$9,112.14**
    b. *Property assessments*: **0**
    c. Debt services: **0**
    d. *Operation and management costs*: **0**
    e. *Costs of developing the property in the past 5 years*: **$53,479.58**

11. ***Whether apart from any rent received from leasing all or a portion of the property (see question #7 above), current or past use of the property generates any income:***

    none

Redwood Empire Title Company of Mendocino County

221 E. Pine Street
Fort Bragg, CA 95437
Phone: (707)964-8666 • Fax: (707)409-6305

Our No.: 20202919CW
Your No.:
Seller: Follette Trust
Buyer: James A. De Alba and Denise M. De Alba

When replying Please Contact:
ESCROW OFFICER: Cherryl West
cwest@redwoodtitle.com

AMENDED PRELIMINARY REPORT

Property Address: **33389 Pacific Way, Fort Bragg, CA 95437**

In response to the above referenced application for a policy of title insurance, **Redwood Empire Title Company of Mendocino County** hereby reports that it is prepared to issue, or cause to be issued, as of the date hereof, a Policy or Policies of Title Insurance describing the land and the estate or interest therein hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an Exception below or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations of said Policy forms.

The printed Exceptions and Exclusions from the coverage and Limitations on Covered Risks of said Policy or Policies are set forth in Exhibit A attached. Copies of the Policy forms should be read. They are available from the office which issued this report.

Please read the exceptions shown or referred to below and the exceptions and exclusions set forth in Exhibit A of this report carefully. The exceptions and exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.

It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects and encumbrances affecting title to the land.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby. If it is desired that liability be assumed prior to the issuance of a policy of title insurance, a Binder or Commitment should be requested.

Dated as of November 11, 2020 at 07:30 AM.

Steve Burlesci
Chief Title Officer

sburlesci@redwoodtitle.com

The form of policy of title insurance contemplated by this report is:
CLTA Standard 1990 Owners Policy
Underwritten by Old Republic National Title Insurance Company

SCHEDULE A

1. The estate or interest in the land hereinafter described or referred to covered by this Report is:

   a Fee as to Tract One; an Easement as to Tracts Two, Three and Four

2. Title to said estate or interest at the date hereof is vested in:

   William N. Follette and Anne F. Amerine, Trustees of the Wilma C. Follette Survivor's Trust UTA dated October 11, 1995

3. The land referred to in this report is situated in the State of California, County of Mendocino and is described as follows:

   See Exhibit A attached hereto and made a part hereof.

SCHEDULE B

At the date hereof exceptions to coverage in addition to the printed Exceptions and Exclusions in the said policy form would be as follows:

1. Taxes and assessments, general and special, for the fiscal year 2020 - 2021, as follows
   Assessor's Parcel No.: 017-320-51
   Code No.: 076-011
   1st Installment: $4,461.35, Unpaid
   2nd Installment: $4,461.35, Unpaid

2. The lien of supplemental taxes, if any, assessed pursuant to the provisions of Section 75, et seq. of the Revenue and Taxation Code of the State of California.

3. Any adverse claim based upon the assertion that some portion of said land is tide or submerged land or has been created by artificial means, or has accreted to such portion so created.

4. Any rights, interests or claims which may exist or arise by reason of the fact that portions of said land may be used by the public for beach access, parking and beach or recreational purposes.

5. Any rights, claims or interest which may arise by reason of the indefinite description of said land contained herein and throughout the record chain of title.

6. Easement(s) for the purposes stated herein and incidental purposes as provided in the document(s):
   Recorded: January 25, 1922 in Book 168 of Deeds, Page 109 of Official Records
   For: road

   a. Notice of Intent to Preserve Interest executed on behalf of James E. Cotton recorded January 31, 1990 in Book 1806, Page 180 of Official Records.

7. Terms and provisions as contained in an instrument,
   Entitled : Agreement Establishing Boundary Line
   Recorded: July 6, 1948 in Book 231, Page 438 of Official Records

8. Easements, terms and provisions as contained in an instrument,
   Entitled : Irrevocable Offer to Dedicate Easement
   Recorded: September 21, 1989 in Book 1778, Page 120 of Official Records

9. Easements, building setback lines, notations and/or recitals as shown or provided for on the map recorded March 15, 1990 in Map Case 2, Drawer 50, Page 32, Mendocino County Records.

10. Covenants, Conditions and Restrictions, but omitting any covenants or restrictions if any, based upon race, color, religion, sex, handicap, familial status, or national origin unless and only to the extent that said covenant (a) is exempt under Title 42, Section 3607 of the United States Code or (b) relates to handicap but does not discriminate against handicapped persons, as provided in an instrument
    Recorded: March 19, 1990 in Book 1816, Page 146 and amended August 10, 1990 in Book 1850, Page 622 of Official Records

11. Terms and provisions as contained in an instrument,
    Entitled : Deed Restriction
    Recorded: October 10, 1991 in Book 1940, Page 562 of Official Records

12. Terms and provisions as contained in an instrument,
    Entitled : Stipulated Judgment
    Recorded: February 27, 1992 in Book 1970, Page 85 of Official Records

13. Easements, building setback lines, notations and/or recitals as shown or provided for on the map recorded March 13, 1992 in Map Case 2, Drawer 55, Pages 51, 52 and 53, Mendocino County Records.

14. Easement(s) for the purposes stated herein and incidental purposes as provided in the document(s):
Recorded: May 15, 1992 in Book 1992, Page 102 of Official Records
For: roadway and public utilities

15. Terms and provisions as contained in an instrument,
Entitled : Agreement Imposing Restrictive Covenants
Recorded: December 22, 1992 in Book 2049, Page 318 of Official Records

16. Easements, terms and provisions as contained in an instrument,
Entitled : Irrevocable Offer to Dedicate Easement
Recorded: March 10, 1993 in Book 2066, Page 620 of Official Records

a. Certificate of Acceptance recorded September 30, 2003 as 2003-25963.

b. Assignment of Public Access Easement by American Land Conservancy to Mendocino Land Trust recorded August 24, 2004 as 2004-19243 of Official Records.

c. Acknowledgment by California Coastal Commission of Transfer of Public Access Easement recorded August 31, 2004 as 2004-19885 of Official Records.

17. Deed of Trust to secure an indebtedness of the amount stated below and any other amounts payable under the terms thereof,
Amount : $55,000.00
Trustor/Borrower : William T. Follette and Wilma C. Follette, husband and wife as to an undivided 1/3 interest
Trustee: First American Title Company
Beneficiary/Lender: James E. Cotton, Trustee of the James E. Cotton Trust dated October 4, 1994
Dated: August 11, 1995
Recorded: August 24, 1995 in Book 2273, Page 683 of Official Records

Affects a portion and other property.

18. Deed of Trust to secure an indebtedness of the amount stated below and any other amounts payable under the terms thereof,
Amount : $210,00000
Trustor/Borrower : Billiou Farming Company, a California corporation, as to its undivided 2/3 interest
Trustee: First American Title Insurance Company
Beneficiary/Lender: James E. Cotton, Trustee of the James E. Cotton Trust dated October 4, 1994 as to an undivided 30% interest and Carol B. Cotton, as Trustee under that Declaration of Trust dated 8 December 1993 as to
Dated: August 11, 1995
Recorded: August 24, 1995 in Book 2273, Page 687 of Official Records

Affects a portion and other property.

19. Terms and provisions as contained in an instrument,
Entitled : Agreement Protecting the Public Interest in Certain Improvements and Development, Guaranteeing Public Access, and Granting Limited Public -Entity Immunity From Liability
Recorded: August 31, 1999 as 1999-16799 of Official Records

20. Terms and conditions contained in the Wilma C. Follette Survivor's Trust, UTA dated October 11, 1995 as disclosed by Quitclaim Deed recorded July 5, 2018 as 2018-08102 of Official Records
NOTE: The requirement that **BOTH**:
a. a Certification of Trust be furnished in accordance with California Probate Code Section 18100.5; and
b. a complete copy of the trust instrument(s), together with a statement that the trust has not been revoked or otherwise terminated, be furnished for this Company's review.
The Company reserves the right to make additional exceptions and/or requirements upon review of either of the above.

END OF SCHEDULE B

INFORMATIONAL NOTES:

1. NOTE: According to the public records, there have been no deeds conveying the property described in this report recorded within a period of 24 months prior to the date hereof except as follows: NONE

EXHIBIT "A"

All that certain real property situated in the County of Mendocino, State of California, more particularly described as follows:

TRACT ONE:

Parcel 3 and a portion of Parcel 2, as numbered and designated on that certain Parcel Map M.S. 59-89 filed for record March 13, 1992 in Map Case 2, Drawer 55, Pages 51,52 and 53, Mendocino County Records, more particularly described as follows:

Beginning at the Southeasterly Corner of said Parcel 3; thence along the Southerly lines of said Parcel 3, South 72°02'00" West, 212.07 feet; thence South 24.49'38" West, 34.34 feet; thence South 06°47'15" West, 21.73 feet; thence South 72°02'00"West, 336.00 feet to the mean high tide line of the Pacific Ocean; thence along said mean high tide line, the following ten (10) courses and distances:
1. North 14°08' 44" West, 50.83 feet.
2. North 02°59'18" West, 65.98 feet.
3. North 21°39'18" West, 9.44 feet.
4. South 81°05'29" West, 10.79 feet.
5. North 44°03'01" West, 7.53 feet.
6. North 08°43'35" East, 23.09 feet.
7. North 59°13'50" West, 53.97 feet.
8. North 79°28'51" West, 18.68 feet.
9. North 62°51'07" West, 36.51 feet.
10. North 28°12'38" West, 15.60 feet;

thence leaving said mean high tide line, North 72°02'00" East, 708.67 feet to the Easterly line of Parcel 2 as shown on aforesaid Parcel Map; thence along said Easterly line, South 00°05'30" East, 40.60 feet to the Southwest corner of said Parcel 2; thence along the Easterly line of said Parcel 3, South 00°05'30" East, 129.32 feet; thence South 00°24'57" East, 38.82 feet to the point of beginning.

The above description is pursuant to Mendocino County Boundary Line Adjustment No. CDB 72-95 recorded April 11, 1995 in Book 2323, Page 489 of Official Records.

APN: 017-320-51

TRACT TWO:

A 16.50 foot Roadway Easement, as set forth in that certain Stipulated Judgment No. 59950, filed for record in Book 1927 Official Records, Page 384 and Book 1970 Official Records, Page 85, Mendocino County Records as shown and delineated on that certain Parcel Map M.S. 59-89 filed for record March 13, 1992 in Map Case 2, Drawer 55, Pages 51, 52 and 53, Mendocino County Records.

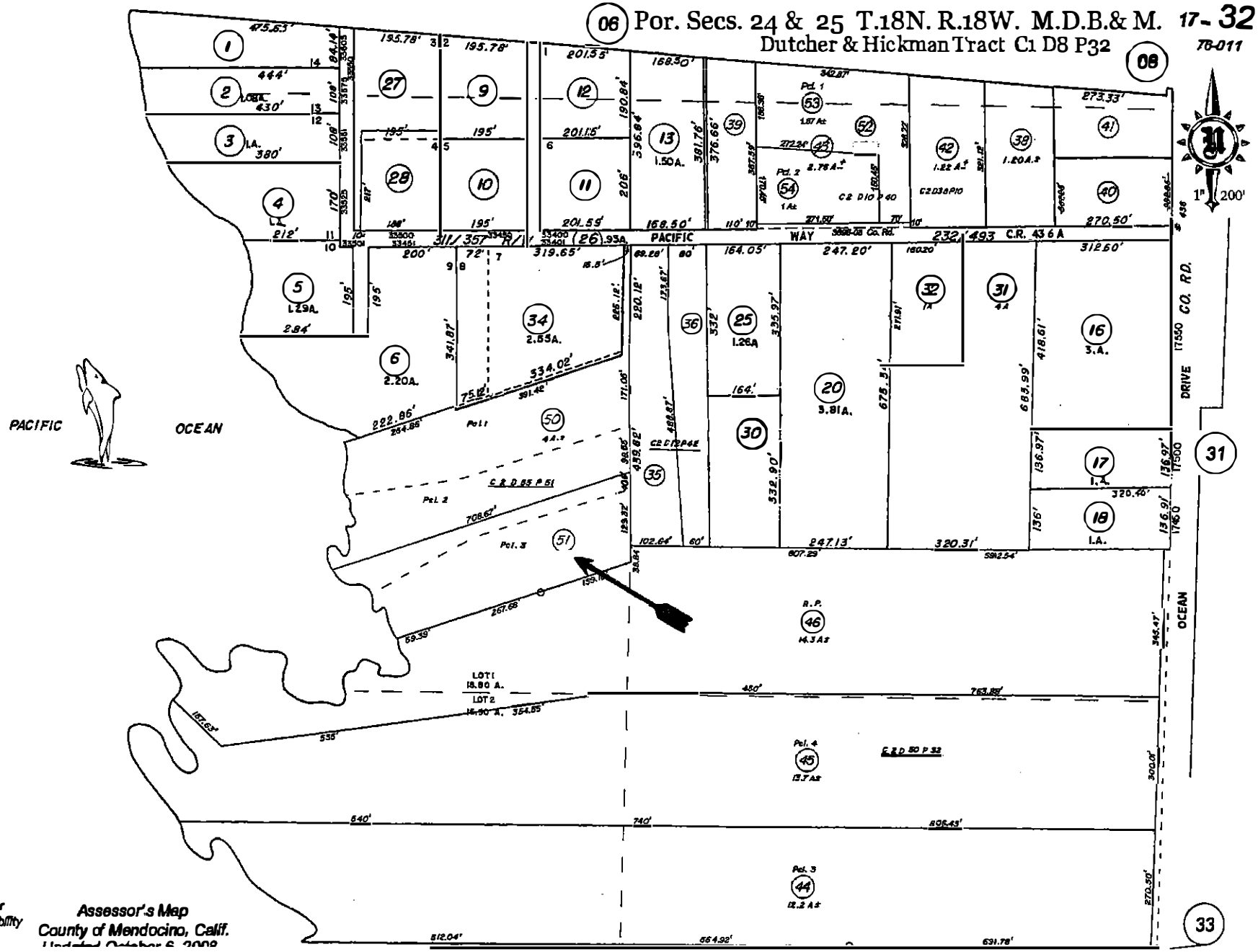
TRACT THREE:

A non-exclusive easement for roadway and public utilities over that portion of Parcels 1 and 2, designated as "50' wide roadway and public utility easement" on that certain Parcel Hap M.S. 59-89 filed for record March 13, 1992 in Hap Case 2, Drawer 55, Pages 51, 52 and 53, Mendocino County Records, including the 16.50 foot wide strip of said Parcel 1 connecting the aforesaid "50' wide roadway and public utility easement" and County Road No. 436 Pacific Way as shown on aforesaid Parcel Map.

TRACT FOUR:

A non-exclusive easement for recreational purposes only (which not include erection of structures, improvements or use of vehicles of any type) as set forth in that certain Stipulated Judgment No. 59950 filed for record in Book 1927 Official Records, Page 384 and Book 1970 Official Records, Page 85, Mendocino County Records, and shown and designated on that certain Parcel Map M.S. 59-89 filed for record March 13, 1992 in Map Case 2, Drawer 55, Pages 51, 52 and 53, Mendocino County Records.

"Notice: This is neither a plat nor a survey. It is furnished merely as a convenience to aid you in locating the land indicated hereon with reference to streets and other land. No liability is assumed by reason of any reliance hereon."



NOTE: This map was prepared for assessment purposes only. No liability is assumed for the data delineated

Assessor's Map
County of Mendocino, Calif.
Updated October 6, 2008

Attachment I. De Alba Financial Takings Information

CLTA PRELIMINARY REPORT FORM (EXHIBIT A) (01-01-08)

CALIFORNIA LAND TITLE ASSOCIATION
STANDARD COVERAGE POLICY - 1990

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building or zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien, or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.

2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.

3. Defects, liens, encumbrances, adverse claims or other matters:

   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;

   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;

   (c) resulting in no loss or damage to the insured claimant;

   (d) attaching or created subsequent to Date of Policy; or

   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.

4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable doing business laws of the state in which the land is situated.

5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.

6. Any claim, which arises out of the transaction vesting in the insured the estate of interest insured by this policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

EXCEPTIONS FROM COVERAGE - SCHEDULE B, PART I

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.

   Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.

2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.

3. Easements, liens or encumbrances, or claims thereof, not shown by the public records.

4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b) or (c) are shown by the public records.

6. Any lien or right to a lien for services, labor or material not shown by the public records.

2006 ALTA LOAN POLICY (06-17-06)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

      (i) the occupancy, use, or enjoyment of the Land;

      (ii) the character, dimensions, or location of any improvement erected on the Land;

      (iii) the subdivision of land; or

      (iv) environmental protection;

      or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters:

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.

4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.

5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is

   (a) a fraudulent conveyance or fraudulent transfer, or

   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.

7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) that arise by reason of:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.

2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.

3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.

4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.

5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

2006 ALTA OWNER'S POLICY (06-17-06)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to

   (i) the occupancy, use, or enjoyment of the Land;

   (ii) the character, dimensions, or location of any improvement erected on the Land;

   (iii) the subdivision of land; or

   (iv) environmental protection;

   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.

2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.

3. Defects, liens, encumbrances, adverse claims, or other matters:

   (a) created, suffered, assumed, or agreed to by the Insured Claimant;

   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

   (c) resulting in no loss or damage to the Insured Claimant;

   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or

   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.

4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A, is

   (a) a fraudulent conveyance or fraudulent transfer; or

   (b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.

5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) that arise by reason of:

1. (a) Taxes or assessments that are not shown a s existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown in the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and that are not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.

Privacy Statement
July 1, 2001

We recognize and respect the privacy expectations of today's consumers and the requirements of applicable federal and state privacy laws. We believe that making you aware of how we use your non-public personal information ("Personal Information"), and to whom it is disclosed, will form the basis for a relationship of trust between us and the public we serve. This Privacy Statement provides that explanation. We reserve the right to change this Privacy Statement from time to time consistent with applicable privacy laws.

In the course of our business, we may collect Personal Information about you from the following sources:

- From applications or other forms we receive from you or your authorized representative;
- From your transactions with, or from the services being performed by us, our affiliates, or others;
- From our Internet web sites;
- From the public records maintained by governmental entities that we either obtain directly from those entities, or from our affiliates or others; and
- From consumer or other reporting agencies.

Our Policies Regarding the Protection of the Confidentiality and Security of Your Personal Information

We maintain physical, electronic and procedural safeguards to protect your Personal Information from unauthorized access or intrusion. We limit access to the Personal Information only to those employees who need such access in connection with providing products or services to you or for other legitimate business purposes.

Our Policies and Practices Regarding the Sharing of Your Personal Information

We may share your Personal Information with our affiliates, such as insurance companies, agents, and other real estate settlement providers. We may also disclose your Personal Information:

- to agents, brokers or representatives to provide you with services you have requested.
- to third-party contractors or service providers who provide services or perform marketing or other functions on our behalf; and
- to others with whom we enter into joint marketing agreements for products or services that we believe you may find of interest.

In addition, we will disclose your Personal Information when you direct or give us permission, when we are required by law to do so, or when we suspect fraudulent or criminal activities. We may also disclose your Personal Information when otherwise permitted by applicable privacy laws such as, for example, when disclosure is needed to enforce our rights arising out of any agreement, transaction or relationship with you.

One of the important responsibilities of some of our affiliated companies is to record documents in the public domain. Such documents may contain your Personal Information.

Right to Access Your Personal Information and Ability to Correct Errors or Request Changes or Deletion

Certain states afford you the right to access your Personal Information and, under certain circumstances, to find out to whom your Personal Information has been disclosed. Also, certain states afford you the right to request correction, amendment or deletion of your Personal Information. We reserve the right, where permitted by law, to charge a reasonable fee to cover the costs incurred in responding to such requests.

All requests must be made in writing to the following address:

Privacy Compliance Officer
Redwood Empire Title Company
P.O. Box 238
Ukiah, CA 95482

Multiple Products or Services

If we provide you with more than one financial product or service, you may receive more than one privacy notice from us. We apologize for any inconvenience this may cause you.

Wynn COASTAL PLANNING & BIOLOGY

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

SUBMITTAL

May 7, 2024

Planning and Building Services
860 N Bush Street
Ukiah, CA 95482
ATTN: Liam Crowley

RE: CDP_2023-0009 Response to Coastal Commission Commentary dated 3/15/24

Owner: James & Denise De Alba

Site: 33389 Pacific Way
Fort Bragg, CA 95437
APN: 017-320-51-00

Dear Liam:

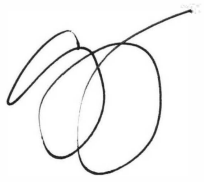
Enclosed, please find an in-depth response to comments made by Coastal Commission staff in their letter to Mendocino County Planning & Building Services, dated March 15, 2024. This response specifically relates to the "Alternatives Analysis" section on page 5 of said letter.

Included with this submittal please find the following referenced supporting documentation:

1. Alternatives Analysis by WCPB Senior Biologist Asa Spade, dated May 3, 2024
2. Updated Site Plan by WCPB, revision date May 6, 2024

Thank you for your continued attention to this project. Please let me know if you have any questions or comments.

Sincerely,



Amy Wynn, Principal Planner



Meghan Durbin, Senior Planner

Encl: per above

CC: James & Denise De Alba (owners/applicants); file

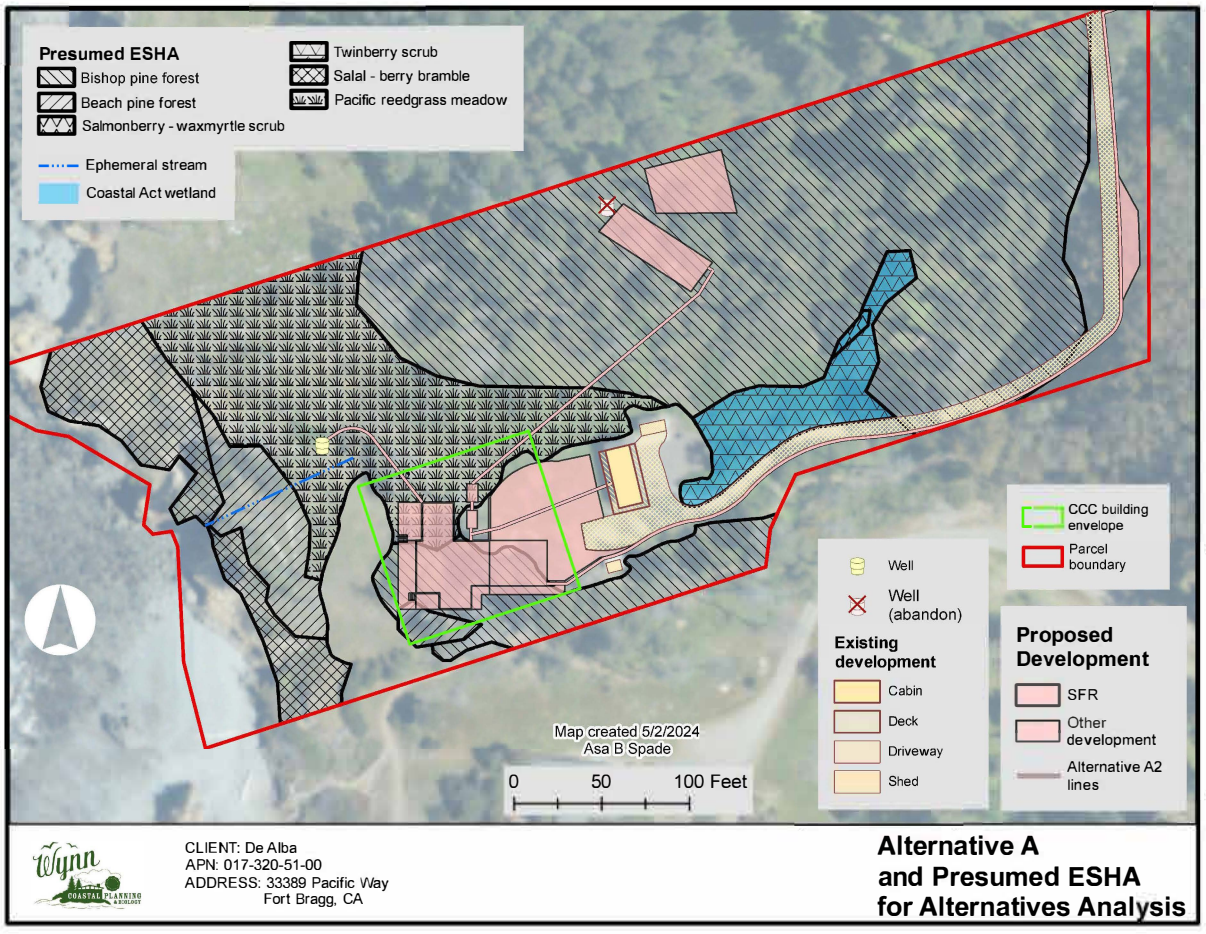
Alternatives Analysis Created

A Coastal Commission (CCC) commentary letter submitted to the Mendocino County Planning & Building Services (PBS) just before the County's Coastal Permit Administrator hearing for this item, dated March 15, 2024 expressed a difference of interpretation between CCC staff and PBS Staff.

As noted in the staff report by project planner, Liam Crowley, County staff determined that denial of the project would result in a regulatory taking of private property. CCC considers that particular county determination to be "premature and unsupported". A key contributing factor to that CCC opinion was the lack of an Alternatives Analysis.

As a result of these comments, the client consultant team at Wynn Coastal Planning & Biology developed a thorough analysis comparing the potential impact of 4 alternative design/location scenarios, to address the potential impact of the proposed project on ESHA. The analysis includes site plans illustrating the layout of the different alternatives as well as tables showing a side-by-side comparison of the amount of impact of each project, as measured in square feet.

The Alternatives Analysis created by WCPB quantified the specific impacts to natural resources, both directly and within standard 100' and 50' buffers, of the project as proposed as well as four alternative development layouts – moving development within the CCC approved building envelope, moving it slightly out of the envelope in different directions, and moving it to the far eastern portion of the parcel. The resulting conclusion was that *"there are tradeoffs to alternative locations, avoiding one resource often means locating development within or nearer another special status resource."*. **After consideration of the different tradeoffs, WCPB biologists and the applicants have determined that Alternative A, which keeps development within the CCC-approved building envelope, would be an acceptable project revision that would further minimize development within the 50-foot buffer to wetland/stream, though it would involve more impact to the special status plant communities.**



Alternatives Analysis – Response to Specific Requests/Suggestions

The March 15th commentary letter included reference to analyzing the "no project" alternative. This alternative can promptly be ruled out from consideration. It goes without saying that, were there no new development, there would be no new impact to ESHA. However, the metric to determine regulatory takings involves whether or not a financially backed reasonable expectation to develop a property exists. In this case the presence of an existing structure (a cabin) coupled with the record of CCC approval of a building envelope beyond the existing cabin, established a reasonable expectation to develop a residence of average size within the building envelope. This expectation was financially backed by a purchase price of $802,000 in January 2021, as well as over $9,000 of property taxes paid since purchase and over $100,000 paid to date in maintenance and the efforts to obtain a Coastal Development Permit.

Within their suggestion/request for an Alternatives Analysis, CCC staff stated "*Alternatives that should be considered include but are not limited to: (1) redeveloping the existing structure, (2) alternative house sizes, including an alternative house size that is no larger than the average house size of similarly-constrained property in the surrounding neighborhood, (3) alternative designs that minimize the footprint of the house (and any proposed JJ ADU) on the ground by utilizing the same footprint as the existing cabin and adding an upper story or stories, and (4) alternative floor plans that minimize encroachment into ESHA and ESHA buffer areas.*"

In creating the Alternatives Analysis it was determined that those suggestions were infeasible or inappropriate for various reasons, as follows.

- ***(1) redeveloping the existing structure***
  - Redeveloping the existing cabin is cost prohibitive, would not be conducive to roof-mounted solar due to the roof orientation, and is outside of the approved building envelope.
  - While it is commonly presumed that adding on to an existing structure will result in a savings of time and money, doing so with a structure that is 70+ years old often gives way to extensive, unpredictable build complications. These complications frequently result in more time and money. As a matter of effectiveness and efficiency, redevelopment of the existing structure was ruled out early in the design process.
  - In addition to the infeasibility of redeveloping the cabin, the property owners desire to maintain the character of the structure and honor its existence as a functional remnant of the property's historic use. Particularly since it is a structure well suited for conversion to an ADU. Conversion of existing structures is an activity that is encouraged and embedded into the LCP code section regarding ADU development.
- ***(2) alternative house sizes, including an alternative house size that is no larger than the average house size of similarly-constrained property in the surrounding neighborhood***
  - It is effectively impossible to determine the average house size of similarly constrained property, because there are no similarly constrained properties in the immediate area that have been developed. That is not because there are no properties with the same amount of ESHA. That is because the interpretation of the definition of ESHA has been expanded significantly in recent years. Being of biological concern, one might think that interpretation is due to new or evolving science in the field. Not so. The interpretation is almost exclusively due to the emergence of the practice of plant communities being considered to be ESHA in recent years, when for decades prior they were not. There is not enough data from which to be able to extrapolate an average home size on a similarly constrained lot, much less identify a similarly constrained lot given today's interpretations of ESHA which push the boundaries of reason.
  - Prior to designing the proposed project, WCPB completed a neighborhood development comparison to assist the applicants in creating a project design that was similar in scale and character to other homes in the neighborhood.
  - With access to detailed project records, the first step in developing a takings analysis involves County staff reviewing nearby properties in order to select the most suitable properties to compare to the proposed project. Five (5) nearby parcels were selected to be included in the takings analysis within the staff report. Of those five, the most recent CDP approval occurred in June 2017, of an application submitted 3 years earlier, in March 2014. That permit (CDP_2014-0016) also featured development within less than the 100'

mandatory ESHA buffer width. The proposed single family residence was 1,832 square feet, 30 square feet larger than the proposed single family residence of the subject project.
    - CDP_2014-0016 is the closest available project on the most similarly constrained property for which there is data available. The approved house size on that project is already larger than the house size of the proposed project.
- ***(3) alternative designs that minimize the footprint of the house (and any proposed J/ ADU) on the ground by utilizing the same footprint as the existing cabin and adding an upper story or stories***
    - Built some time before 1954, the existing cabin would require substantial structural retrofitting, if even feasible, to bring the structure up to the modern building code required to support additional stories.
    - Designing a one-story SFR was intentional due to the fact that the proposed home is intended for living in after retirement. A multi-story dwelling would not be conducive to aging-in-place. Therefore, the concept of adding stories onto the existing structure was not explored in-depth as it would be physically dysfunctional for the applicants.
    - To suggest utilizing the same footprint as the existing cabin infers demolition of the structure. The cabin is a legally non-conforming structure. Therefore, it would be an extreme agency overreach, not to mention illegal, to require any property owner to remove a legally non-conforming structure.
    - Effort has been made to utilize the existing footprint and therefore reduce the amount of new development, as evidenced by the inclusion of converting the cabin to an ADU. Though ADUs can be up to 1200 square feet in size, the applicants are purposely leaving it much smaller (475 square feet), as existing in order to reduce the impact of site construction and ground disturbing activity.
- ***(4) alternative floor plans that minimize encroachment into ESHA and ESHA buffer areas***
    - Revisions to the floor plan would not result in a measurable effect on any encroachment into ESHA. The proposed floor plan already keeps the higher traffic areas of the home (garage/entry) on the east side of the home, in the area outside of ESHA.
    - The inclusion of decking, as proposed, will indirectly serve as a minimization of encroachment into ESHA since occupants and guests will be drawn to spend their time outdoors on the deck/patio rather than in the ESHA.

Revised Project Description and Site Plan

As an indirect result of creating the Alternatives Analysis, it was discovered that a turnout along the driveway, required by CalFire Fire Safe regulations, had been inadvertently left off the project site plan and biological mapping. Hence, please note the following change to the project description to include that necessary element:

> Construct a 1,802sf single-family residence with attached 836sf garage; 297sf of decks; roof mounted solar panels; septic system (primary and replacement); destroy one existing well and connect proposed single-family residence to western well through proposed trenching; trench to connect to PG&E; construct turnout along driveway per CalFire requirements; extend existing driveway and parking area by 2,942sf. Convert existing, legally non-conforming 475sf cabin to an ADU.

Coinciding with the revision to Alternative A and the revised project description, a revised site plan is also included in this submittal illustrating the location of the CalFire turnout and the change to the development footprint as reflected in Alternative A of the Alternatives Analysis.

Wynn COASTAL PLANNING & BIOLOGY

703 North Main Street, Fort Bragg CA 95437
ph: 707-9642537 fx: 707-964-2622 www.WCPlan.com

May 3, 2024

Jim & Denise De Alba
3785 Glen Haven Road
Soquel, CA 95073

RE: Alternatives Analysis for CDP #2023-0009 – response to CCC Commentary
33389 Pacific Way
Fort Bragg CA 95437
APN: 017-320-51

Dear Mr. & Mrs. De Alba:

This letter is written to provide additional information for Mendocino County Planning to address commentary dated March 15, 2024 by the California Coastal Commission's North Coast District Supervising Analyst on the Mendocino County Staff Report in advance of the Coastal Permit Administrator's March 28, 2024 hearing for this project.

The Coastal Commission Analyst's comments include a request for an Alternatives Analysis to evaluate whether the size, location and design of the home and ancillary developments are the least environmentally damaging alterative, as compared to other alternatives.

Consequently, an 'alternatives analysis' comparing the relative impact of the proposed project and four alternative configurations is presented below. Our analysis concludes that Alternative A to the proposed development is the least environmentally damaging alternative that meets the needs of the applicant and a regulatory takings analysis, upon guidance from WCPB Planners. It is my understanding that WCPB Planners have prepared a complement to WCPB Biology's Alternatives Analysis.

Please let us know if you have any questions or comments.

All the best,

Asa Spade, :Senior Biologist
Wynn Coastal Planning & Biology

Encl: n/a

CC: file

1. PROJECT ALTERNATIVES

The proposed development will directly impact Bishop pine forest and Pacific reedgrass meadow presumed ESHAs. Because virtually all native plant communities occurring on the Mendocino coast are considered 'sensitive' natural communities the parcel is constrained, with no feasible alternative locations where development can occur that would avoid direct impact to all presumed ESHAs and their buffers. The site is limited by other types of setbacks, such as property line and geotechnical setbacks, and soils suitable for the installation on a septic system are limited. An existing rocked driveway serves as access from the northeastern corner of the parcel and a cabin with decks, a couple sheds, and a well are present near the center of the parcel. No alternative locations were considered for the development that is already present, nor for the primary leach field and designated replacement field because it was presumed that soils in other locations were not suitable to support use as septic leach fields. The proposed development is mapped in **Figure 1**. Four alternatives to the proposed project were considered and are mapped in **Figure 2** through **Figure 5**. The alternatives are described and discussed below. **Table 1** shows a comparison of how the proposed development and alternatives would directly impact and/or be within 50 and/or 100ft buffers the special status resources present. The table shows that there are tradeoffs to all alternative locations, avoiding one resource often means locating development within or nearer another special status resource.

Proposed Project

A building envelope was established when the parcel was created and then was modified to reflect a 50ft setback from the bluff edge and 15ft setback from the ephemeral stream many years before the parcel was purchased by the current owners. The proposed project is to build a new single-family residence (SFR) with decks within the existing CCC building envelope, and west of the existing cabin, which will be converted to use as an accessory dwelling unit (ADU). A driveway turnaround/patio will be installed between the SFR and ADU. There are two existing wells on the property: one each on the northern and on the western edge of the parcel. The well on the northern edge of the parcel is in a location near what was determined to be the best location for the installation of a primary leach field and for the designation of a replacement leach field. This well will therefore be abandoned, and the proposed development will connect to the existing well on the western portion of the of the property.

This configuration would result in some direct impact to Bishop pine forest and Pacific reedgrass meadow but would avoid direct impact to all other presumed ESHAs. A mitigation monitoring and reporting plan was created for this proposal specifying habitat enhancement that should effectively compensate for the impacts through enhancement of the remaining Bishop pine forest through invasive plant removal and understory plantings, and through the conversion of an area dominated by non-native grassland to a native Pacific reedgrass meadow.

Alternative A

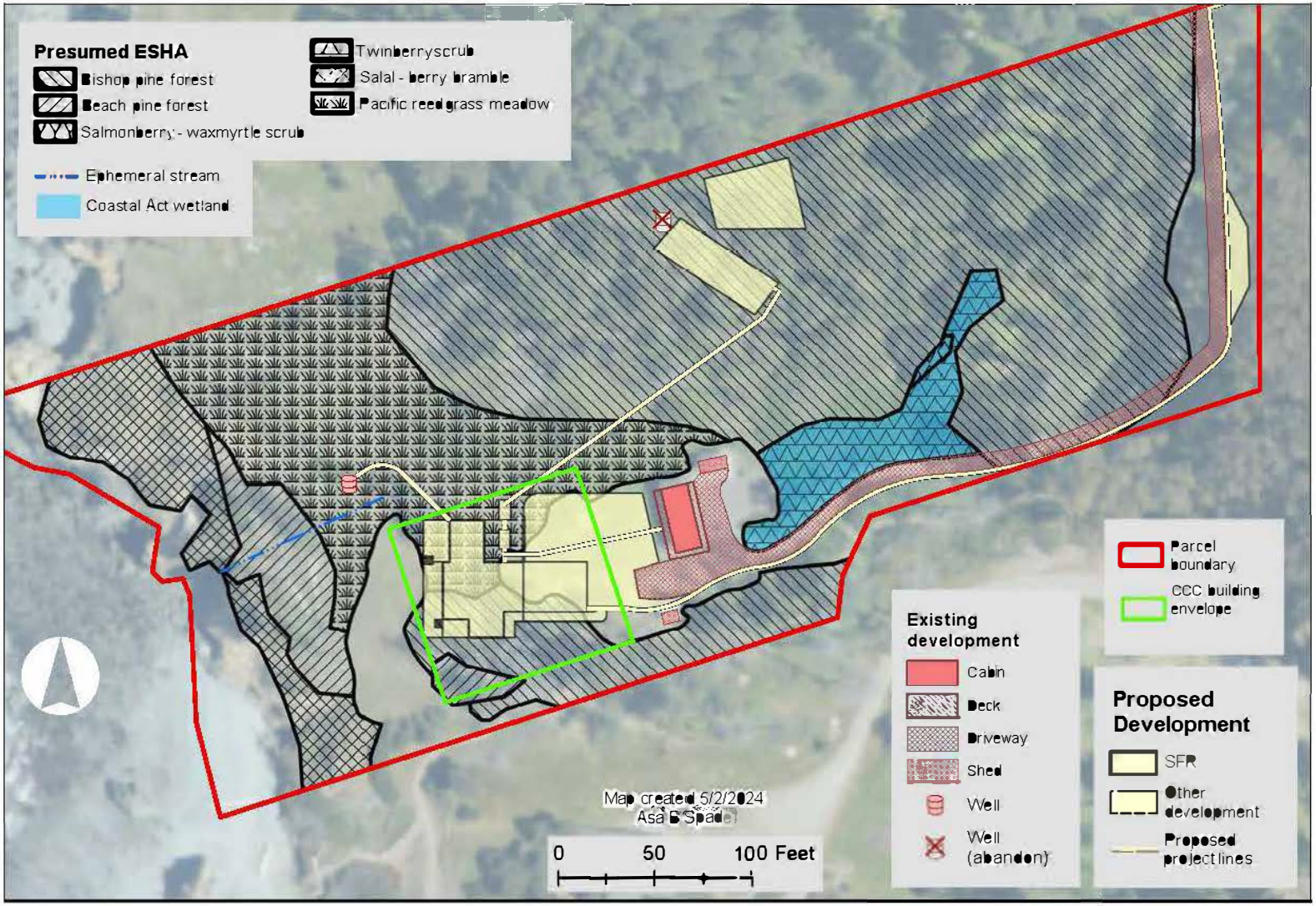
Alternative A is similar to the proposed project in most ways, with all structures within the CCC building envelope but the structures are placed approximately 12ft further south and 5ft east as compared to the proposed project. This maximizes distance between the structures and the ephemeral stream while maintaining the angle at which the structures were designed. This configuration also reduces direct impact to Pacific reedgrass meadow but pushes the structure further into Bishop pine forest. Alternative A is the best design for minimizing development within the 50ft buffers to wetlands and the stream but has more direct impact to special status plant communities than the proposed project.

Alternative B

This alternative configuration would locate the SFR further north than the proposed project, outside of the CCC building envelope, which allows the approach to the garage to be more direct rather than looping around to the northern side of the garage. This configuration also maximizes the distance of development from the ephemeral stream and Coastal Act wetland presumed ESHAs by roughly centering the development between them. This configuration has the second least area of development within 50ft wetland and stream buffers, being roughly comparable to Alternative A. This alternative has the least amount of development within 50 and 100ft buffers around upland plant communities but has more direct impact to these communities than both Alternative C and the proposed development.

Alternative C
This alternative was an attempt to locate the development further west than the proposed development, outside of the CCC building envelope, in an area where non-native grassland is dominant. This alternative complies with the 15ft setback to the ephemeral stream addressed in the subdivision process. The SFR would comply with the 36ft setback to the bluff edge specified by the geotechnical report, rather than a 50ft setback to the top of bluff that would be consistent with the discussion in the creation of the CCC building envelope placement. This configuration would allow the owners to have the best ocean views. This configuration places the SFR furthest from the Coastal Act wetland twinberry scrub and salmonberry – wax myrtle scrub communities. Alternative C has the least direct impact to upland plant communities, though it is only a slight improvement over the proposed development in this regard.

Alternative D
This alternative explores the possibility of siting the single-family residence on the eastern side of the parcel. This location would be almost completely within Bishop pine forest presumed ESHA rather than taking advantage of the area west of the existing cabin which has already been impacted by past use of the property. This location would also not allow satisfactory use of the parcel with regard to ocean views from the SFR unless a significant number of trees west of the residence were removed. While the removal of trees between a residence and the ocean would require permitting and is not analyzed as a part of this alternatives analysis, it should be considered that after-the-fact removal of trees can be an unintended consequence of forcing a residence to be located further east on a bluff top parcel when a property owner had the investment-backed expectation to build closer to the bluff, and in this case within a building envelope prescribed by the Coastal Commission that is reflected in a recorded Deed Restriction.



CLIENT: De Alba
APN: 017-320-51-00
ADDRESS: 33389 Pacific Way
Fort Bragg, CA

Proposed Development and Presumed ESHA for Alternatives Analysis

Figure 1. Proposed project map.

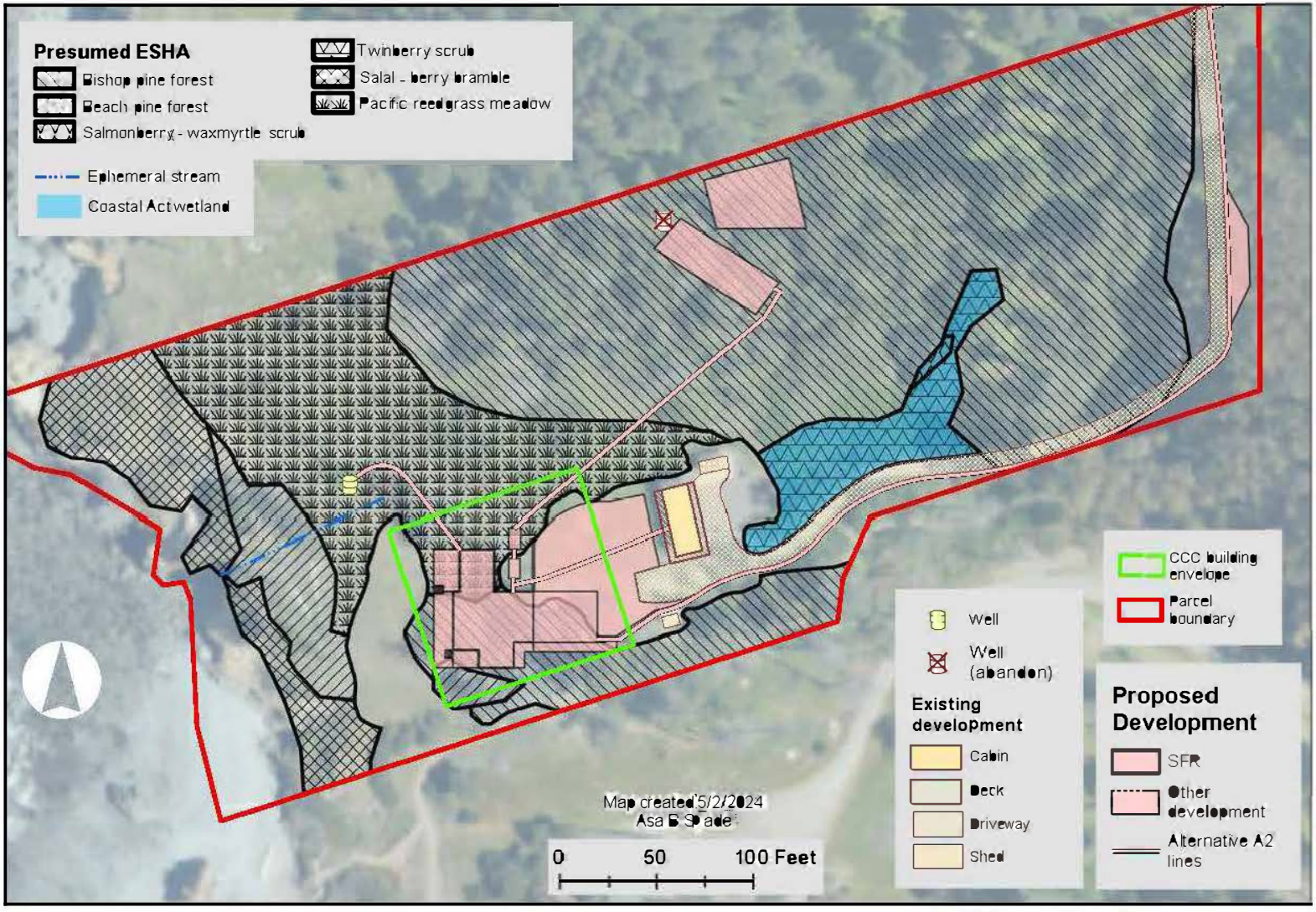
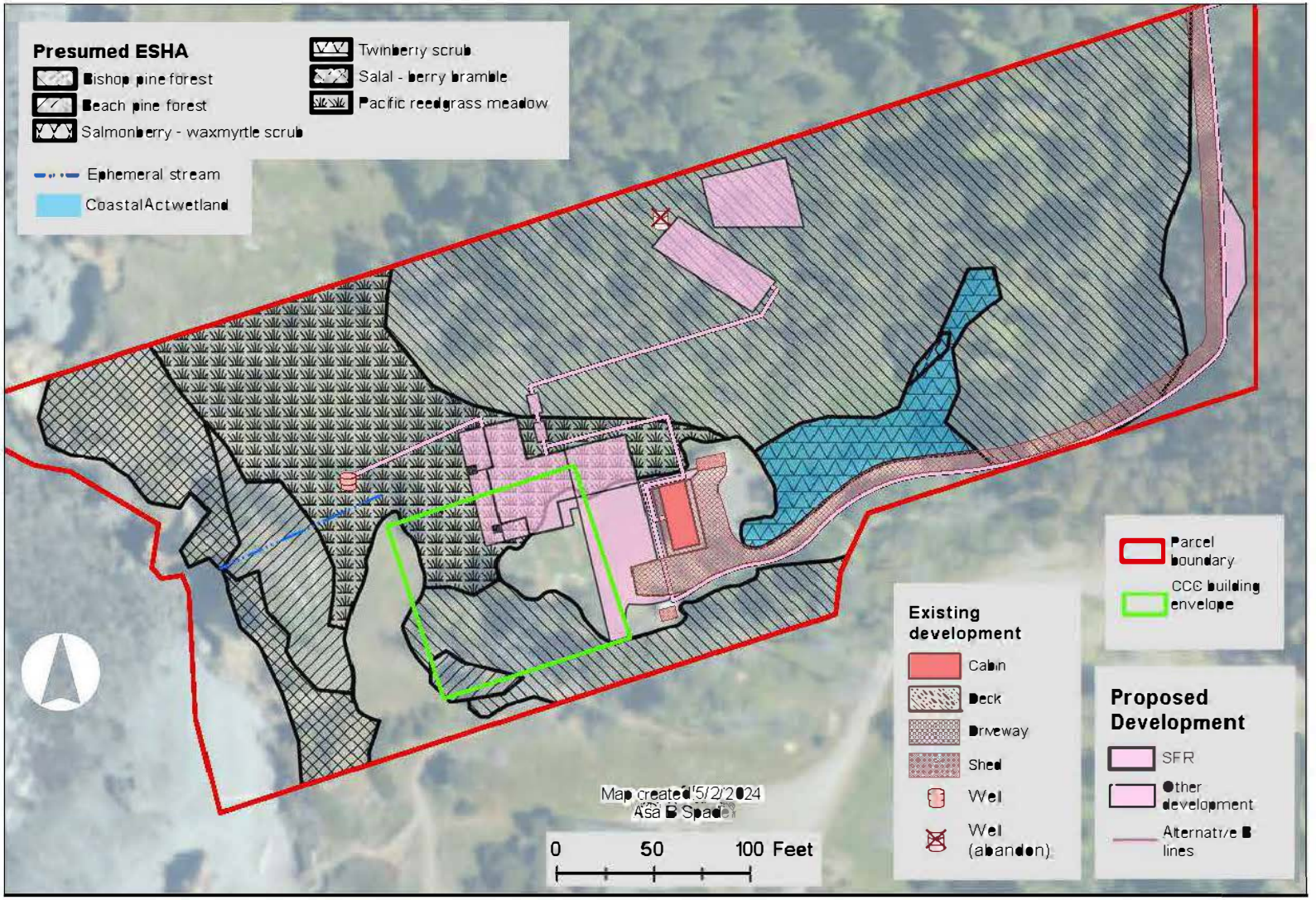


Figure 2. Alternative A development relative to presumed ESHAs.



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APN: 017-320-51-00
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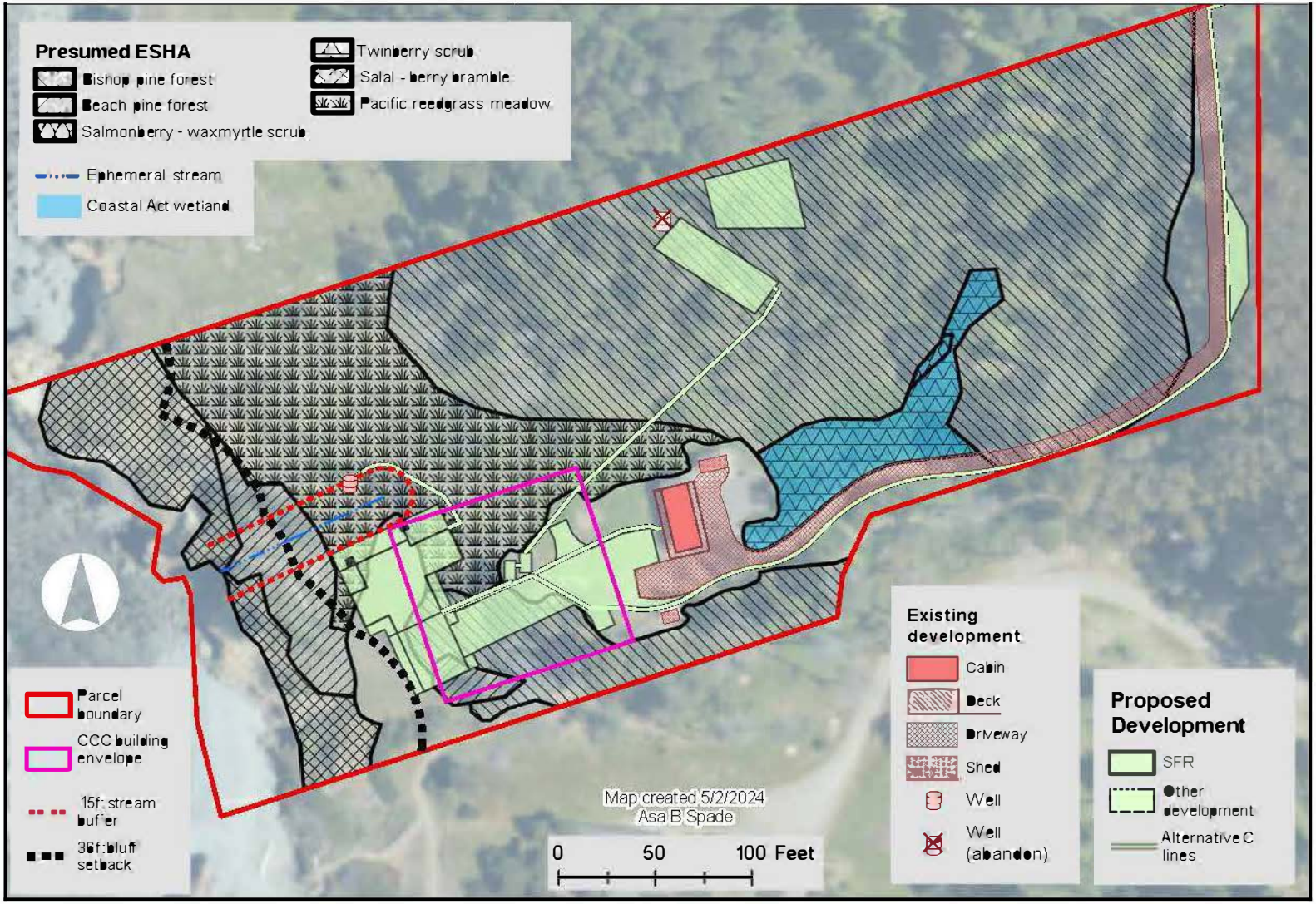
Fort Bragg, CA

Alternative B and Presumed ESHA for Alternatives Analysis

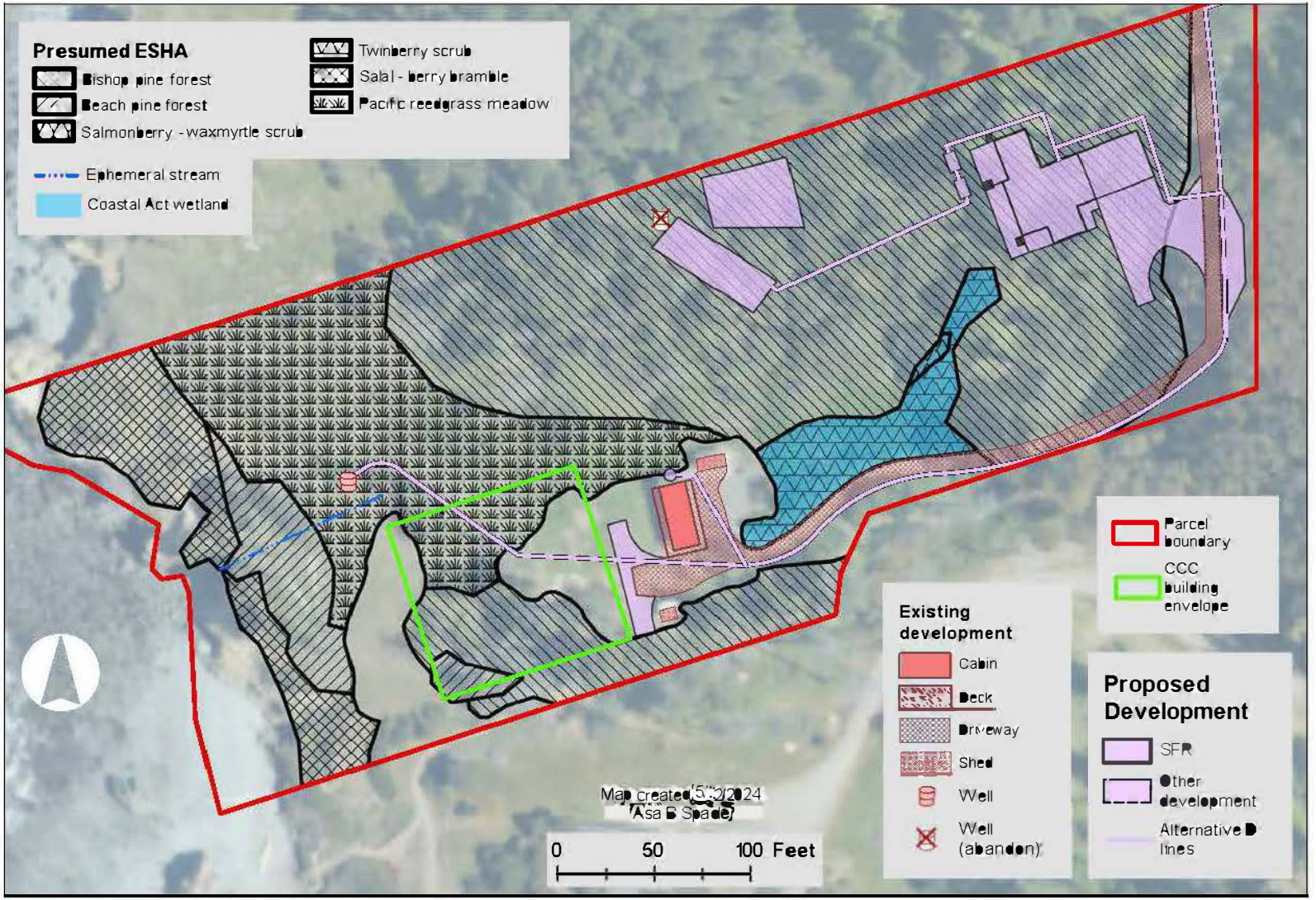
Figure 3. Alternative B development relative to presumed ESHA.



CLIENT: De Alba
APN: 017-320-51-00
ADDRESS: 33389 Pacific Way
Fort Bragg, CA

Alternative C and Presumed ESHA for Alternatives Analysis

Figure 4. Alternative C development relative to presumed ESHA.



CLIENT: De Alba
APN: 017-320-51-00
ADDRESS: 33389 Pacific Way
Fort Bragg, CA

Alternative D and Presumed ESHA for Alternatives Analysis

Figure 5. Alternative D development relative to presumed ESHA.

Table 1. Comparison of proposed project and project alternatives in relation to relevant presumed ESHAs. The square footage indicates how much development will be within ESHA and ESHA buffers. The lowest square footage in each category is highlighted.

Development Alternatives						
ESHA		**Proposed Project**	**Alternative A**	**Alternative B**	**Alternative C**	**Alternative D**
	Units	(square feet)	(square feet)	(square feet)	(square feet)	(square feet)
Ephemeral stream	Direct Impact	**0**	**0**	**0**	**0**	**0**
	Within 50ft Buffer	767	340	248	2197	**156**
	Within 100ft Buffer	4365	3528	3105	5722	**209**
Twinberry scrub (Coastal Act wetland)	Direct Impact	**0**	**0**	**0**	**0**	**0**
	Within 50ft Buffer	347	342	473	**333**	1889
	Within 100ft Buffer	4423	4651	4747	**3410**	7532
Salmonberry wax myrtle scrub (Coastal Act wetland)	Direct Impact	**0**	**0**	**0**	**0**	**0**
	Within 50ft Buffer	**29**	**29**	**29**	**29**	30
	Within 100ft Buffer	**583**	**583**	**583**	**583**	3037
Pacific reedgrass meadow	Direct Impact	2082	1009	3535	1318	**189**
	Within 50ft Buffer	7020	6590	5785	7487	**751**
	Within 100ft Buffer	8794	8693	7660	9242	**2278**
Salal berry bramble	Direct Impact	**0**	**0**	**0**	**0**	**0**
	Within 50ft Buffer	8	74	**0**	1435	**0**
	Within 100ft Buffer	2565	2924	**116**	3628	132
Beach pine forest	Direct Impact	**0**	42	**0**	187	**0**
	Within 50ft Buffer	2599	3601	129	5078	**101**
	Within 100ft Buffer	6855	6841	3694	7225	**911**
Bishop pine forest	Direct Impact	4465	5449	**3025**	4881	8137
	Within 50ft Buffer	11140	11091	**10090**	11668	10687
	Within 100ft Buffer	11245	11240	**10187**	11768	10782
Upland plant communities combined	Direct Impact	6442	6619	6568	**6394**	8447
	Within 50ft Buffer	11246	11281	**10210**	11786	10924
	Within 100ft Buffer	11246	11281	**10210**	11786	11014
Wetland and ephemeral stream combined	Direct Impact	**0**	**0**	**0**	**0**	**0**
	Within 50ft Buffer	1108	**685**	795	2568	2070
	Within 100ft Buffer	8409	7903	7598	**7369**	7733

Contributing Biologists

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.

Lands of De Alba
Section 25, Township 18 North,
Range 18 West, Mount Diablo Meridian
Mendocino County, CA

General Notes

General Plan Designation:	RR 5 (2)
Zoning District:	RR 5
Urban/Rural:	Urban
Highly Scenic Area:	No
Proposed Land Use:	Convert existing cabin to ADU; CDP for SFR
Appealable to Coastal Commission:	Yes
Entitlement Permit Type:	CDP
Yard Setbacks:	20' front & rear & sides
CalFire Setbacks:	30'
Corridor Preservation Setback:	n/a
Height Limit:	28'
Environmental Constraints:	Yes
Potential Geologic Hazards:	Yes, 36' setback
Landscaping:	No
Water Source:	On-site well
Wastewater Disposal:	On-site septic
Tree Removal:	None

Lot Coverage Tabulation Gross Site Area:

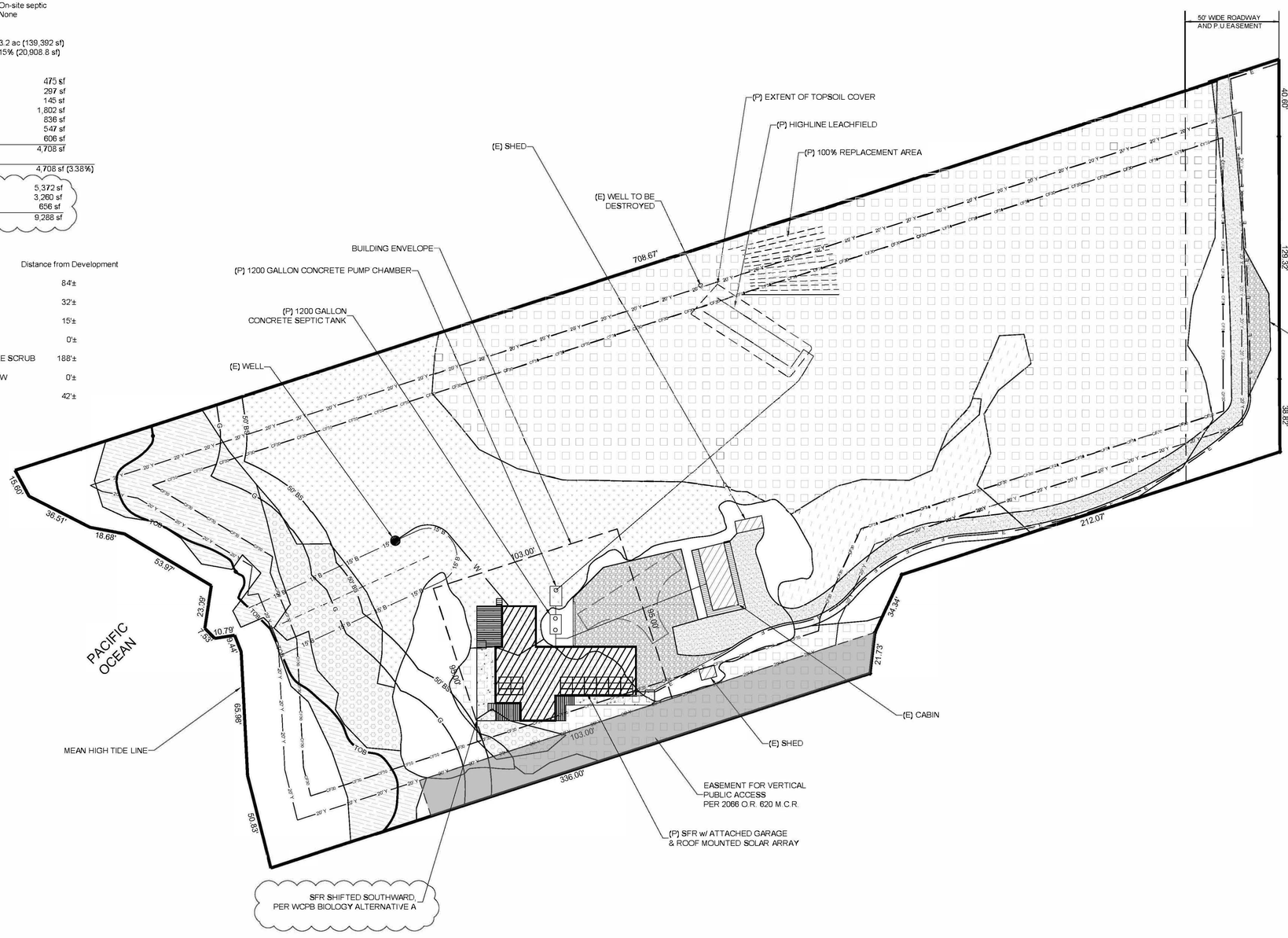
Gross Site Area:	3.2 ac (139,392 sf)
Maximum allowable lot coverage:	15% (20,908.8 sf)

Lot Coverage:

(E) Footprint - Cabin:	475 sf
(E) Footprint - Decks:	297 sf
(E) Footprint - Sheds:	145 sf
(P) Footprint - SFR:	1,802 sf
(P) Footprint - Attached Garage:	836 sf
(P) Footprint - Deck:	547 sf
(P) Footprint - Concrete Walk & Patio:	606 sf
Total Building Footprint:	4,708 sf
Total Lot Coverage (Footprint):	4,708 sf (3.38%)
(E) Driveway & Parking:	5,372 sf
(P) Driveway, Parking & Path:	3,260 sf
(P) Turnout:	656 sf
Total Driveway & Parking:	9,288 sf

Sensitive Resources:

Legend	Type	Distance from Development
	TWINBERRY SCRUB	84'±
	STREAM	32'±
	BEACH PINE FOREST	15'±
	BISHOP PINE FOREST	0'±
	SALMONBERRY - WAX MYRTLE SCRUB	188'±
	PACIFIC REEDGRASS MEADOW	0'±
	SALAL - BERRY BRAMBLE	42'±



LEGEND:

- (E) GRAVEL DRIVEWAY
- (P) GRAVEL DRIVEWAY
- 15' BUFFER
- 50' BUFFER
- 100' BUFFER
- CAL FIRE 30' YARD SETBACK
- (E) FENCE
- 20' YARD SETBACK
- APPROXIMATE TOP OF BLUFF
- 50' BLUFF SETBACK
- 36' GEOTECHNICAL SETBACK
- (P) WATER LINE TRENCH
- (P) ELECTRICAL TRENCH
- EASEMENT FOR VERTICAL PUBLIC ACCESS PER 2066 O.R. 620 M.C.R.

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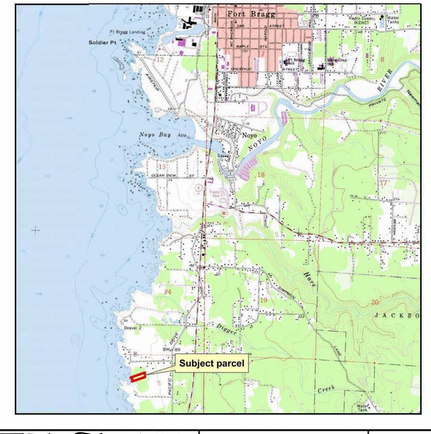
0' 30' 60' 90'



SITE PLAN | 1:30 | 1

Design review, not meant for construction.

Base on a map prepared by:
Forrest Francis, Land Surveyor
P. O. Box 1162
Mendocino, California 95460
Phone: (707) 937-9900 E-Mail: ffrancis@mcn.org
www.mendocinosurveyor.com

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De Alba

33389 Pacific Way
Fort Bragg, CA 95437

APN:	017-320-51-00
DRAWN BY:	TH
DATE:	2/15/24
SCALE:	AS SHOWN
APPROVED BY:	TJ

REVISION	BY	DATE
Revised CCC comment number location of the Turnout	TT	5/6/24

SHEET 1 OF 1 SHEETS

CALIFORNIA COASTAL COMMISSION
NORTH COAST DISTRICT OFFICE
1385 EIGHTH STREET• SUITE 130
ARCATA, CA 95521
VOICE (707) 826-8950

March 15, 2024

Liam Crowley, Planner
Mendocino County Planning and Building Services
120 West Fir Street
Fort Bragg, CA 95437

SUBJECT: Comments on County Coastal Development Permit (CDP) Application No. CDP_2023-0009 (De Alba), 33389 Pacific Way, Fort Bragg (APN 017-320-51).

Dear Liam,

Thank you for providing our office with a copy of the staff report and hearing notice for the subject project, which our office received on February 29, 2024. We understand that the applicant is proposing new development on an approximately three (3)-acre bluff top parcel that is currently developed with two (2) water wells, two (2) sheds, a cabin, deck and driveway. According to the staff report, the applicant is proposing all of the following: (1) construct a new 1,802-square-foot single family residence with 836-square-foot attached garage; (2) construct 547[1] square feet of new decking; (3) construct 606 square feet of additional concrete walkways and patio; (4) destroy one existing well and connect the second existing well to the residence through trenching; (5) installation of roof-mounted solar panels and associated trenching; (6) extend existing driveway and develop new parking area; (7) install septic system; (8) convert existing cabin to an accessory dwelling unit (ADU); and (9) develop a 1,700-square-foot dog area and private walking path from the western end of the proposed residence through Pacific reedgrass meadows to connect to a nearby public access trail (Belinda Point Trail).

As discussed further below, the staff report indicates that County staff recommend conditional approval of the development as proposed, even though all development is proposed to be sited within Environmentally Sensitive Habitat Areas (ESHAs) and/or minimum required ESHA buffers, inconsistent with the requirements of the Mendocino County certified LCP. Pursuant to Coastal Act Section 30603(a), any CDP granted by the County for the development project at the subject site would be appealable to the Coastal Commission, including because the subject parcel is located: (1) between the sea and the first public road paralleling the sea; (2) within 100 feet of a wetland or stream; and (3) within 300 feet of the top of the seaward face of a coastal bluff.

Commission staff offer the following comments for your consideration at this time.

1. Protection of Biological Resources

The County staff report indicates that the subject property is designated and zoned Rural Residential and consists partially of non-prime agricultural land (as depicted on the LCP Land Capabilities and Natural Hazards map). Habitat features mapped on the

[1] The applicant's submittal dated February 28, 2023 proposes 297 square feet of decking.

site include six Sensitive Natural Communities recognized as ESHA, including Northern Bishop Pine Forest, Pacific reedgrass meadows, Salmonberry- Wax Myrtle Scrub wetland, and Twinberry Scrub wetland. According to the application materials and County staff report, the proposed project would directly impact and eliminate approximately 1,550 square feet of Bishop pine forest and 1,640 square feet of Pacific reedgrass meadow.

A. Allowable Uses in ESHAs and ESHA Buffers

The Mendocino County Local Coastal Program (LCP) policies including LUP Policies 3.1-4, 3.1-7, and 3.1-13, and CZC Section 20.496.020 identify a very limited range of specific uses permitted in wetland and other ESHAs, and residential use is not listed in the LCP as an allowable use within ESHAs.

Wetlands, riparian areas, and rare species habitats and communities, and all other ESHA are also subject to the ESHA buffer requirements of LUP Policy 3.1-7 and CZC Section 20.496.020. LUP Policy 3.1-7 and CZC Section 20.496.020(A)(1) allow for development to be permitted within a buffer area if the development is for a use that is the same as those uses permitted in the adjacent environmentally sensitive habitat area, and if the development complies with specified standards as described in subsections (1)-(3) of LUP Policy 3.1-7 and 4(a)-(k) of Section 20.496.020(A). CZC Section 20.532.100(A)(1)(a) requires that ESHA resources affected by development not be significantly degraded by the proposed development. Justifications for development in ESHA as the "least environmentally harmful alternative" should only be applied to those uses that are *allowable* within ESHA or ESHA buffer.

According to these policies, a buffer area of a minimum of 100 feet shall be established adjacent to all ESHAs, unless an applicant can demonstrate, after consultations and agreement with the California Department of Fish and Wildlife (CDFW) that 100 feet is not necessary to protect the resources of that particular habitat area from possible significant disruption caused by the proposed development. The policies state that in that event, *the buffer shall not be less than 50 feet in width*.

Additionally, even though Mendocino County now has in place a certified LCP that allows development of ADUs and JADUs (effectively certified November 9, 2021, ten months after the applicant acquired the property), Mendocino County Coastal Zoning Code (CZC) section 20.458.045 ("Coastal Resource Protections") disallows development of ADUs and JADUs within 100 feet of the boundary of an ESHA "unless contained entirely within a legally-authorized existing or approved residential structure that will not be repaired or improved to the extent that it constitutes a replacement structure under section 13252 of Title 14, California Administrative Code." CZC section 20.458.045 further specifies:

> All new development associated with an ADU (well, water storage, septic improvements, parking and driveways, vegetation removal for fire safety, etc.) must also be located more than 100 feet from the boundary of an Environmentally Sensitive Habitat Area. An exception to these requirements may be authorized through the administrative coastal development permit process in

> circumstances where the development is consistent with the standards established in Chapter 20.496.

Mendocino County Coastal Zoning Code (CZC) Section 20.532.095(A)(1) requires the County to make findings that demonstrate each project is consistent with all provisions of the certified local coastal program. The proposed residential development and related improvements are not in any way dependent on the ESHAs at the site, but would occur within ESHA and ESHA buffer areas that are required to be established around the Sensitive Natural Community ESHAs. Therefore, as residential uses are not listed in the LCP as allowable uses within ESHA or ESHA buffers, and the Coastal Act only allows resource dependent uses within ESHA and ESHA buffers, the proposed development is inconsistent with the use limitations of the certified LCP, including its references to 30240, and including LUP Policy 3.1-7 and CZC Sections 20.496.020(A)(1) and 20.496.020(A)(4).

The County's findings and supporting application materials acknowledge that the conversion of the existing cabin to an ADU would be sited within ESHA and minimum ESHA buffers, inconsistent with the requirements of the certified LCP. The staff report also correctly acknowledges the inconsistency of the proposed new residential development with the biological resource protection policies of the certified LCP, stating in part the following:

> The Project would involve the direct modification of two identified ESHA through grading, trenching, vegetation removal, soil removal, and other construction activities. Therefore, it is possible that these ESHA may be significantly degraded by the proposed development. In this situation, MCC Section 20.496.015(E) mandates that the development be denied.

Therefore, the proposed project should be modified to ensure that any development would occur outside of ESHA and the required minimum ESHA buffers.

B. Takings Analysis

The County staff report and supporting documentation includes a takings analysis and concludes that staff has determined that the project must be approved to avoid a possible taking of private property for public use. The County's determination appears premature and unsupported by findings of fact for the following reasons.

1. It does not appear that the staff report cites to relevant facts that support the finding that the applicant has a reasonable expectation to build a house and garage of the size and scale as currently proposed. Five unrelated recent nearby developments are presented in the staff report as comparable developments, however four of the examples demonstrate avoidance of developing within ESHA and adherence to the minimum required ESHA buffer setbacks. Only one example authorized development to avoid the potential for a regulatory taking, but allowed for less development than on the subject property, and on a previously undeveloped parcel. Finally, the staff report did not demonstrate why the applicant did not reasonably expect to build an alternative development proposal consisting of an addition to the cabin in similar proportion as that which

the County permitted at 33401 Pacific Way; this previous development may be a more appropriate comparable development to establish the reasonableness of the applicant's investment backed expectation and better protect ESHA.

2. The County has not established a basis under which the applicant would have expected to develop a property constrained by sensitive habitats. When the applicant purchased the property in 2021, there was ample evidence that development of a single-family residence on the parcel might not be possible due to botanical constraints. The Northern Bishop Pine forest and pacific reedgrass meadows Sensitive Natural Communities have been recognized as rare statewide since 1995[2] and several actions have been undertaken by the county to regulate development based on the existence of these and other ESHAs for more than ten years, including as evidenced by the surrounding parcel analyses included in the staff report and supporting documents.

3. Despite the existing entitlement on the subject property, the staff report presumes that there was a reasonable expectation to build a single family residence within a defined building envelope without acknowledging that feasible alternatives exist to adjust or even relocate the building envelope. A building envelope was approved as part of a subdivision in 1991 (CDP 1-91-60), and later moved through an amendment in 1994 (CDP Amendment 1-91-60-A). The location of the building envelope was moved as part of an amendment after "newly discovered material information" had been presented demonstrating that relocating the building envelope would not impact geologic or botanical resources recognized in 1994.

   The property has since changed ownership and circumstances of the site have changed in the thirty years since the building envelope was last modified. The application materials demonstrate other changed circumstances necessitating an adjustment of expectations and project design to accommodate a septic system: Attachment G (Carl Rittiman and Associates SER Proposal Abstract) states in part "A disposal system was identified for the parcel as part of the subdivision process and the system was sized to accommodate a total of three bedrooms, as per subdivision requirements. The approved leachfield cannot be used as it is located in a road easement that was developed after the leachfield approval."

   Thus, the applicant has proposed to site a septic system outside of the proposed building envelope to accommodate site constraints and could similarly apply to adjust the building envelope to enable siting development in a manner that could more feasibly accommodate ESHA constraints.

4. The County staff report does not demonstrate that approving the proposed project is the minimum necessary to avoid a regulatory taking. As indicated further below, it appears that feasible alternatives exist that could avoid and/or lessen development impacts within ESHAs and ESHA buffers.

---

[2] Sawyer, J. O., and T. Keeler-Wolf. 1995. A manual of California vegetation. California Native Plant Society, Sacramento, CA.

C. Alternatives Analysis

The County staff report does not provide an analysis of feasible alternatives and instead states on Page CPA-10 "An alternative location would either have a similar impact on ESHA or not be sufficient to serve the proposed development." Even if the County determines that development must be approved to avoid a regulatory takings, as part of the analysis of impacts to ESHAs, either the county or the Commission on appeal must at minimum evaluate whether the size, location, and design of the home and ancillary developments are the least environmentally damaging alternative, as compared to the other alternatives (such as but not limited to a smaller house design and the "no project" alternative).

Therefore, the applicant should propose, and the County should address in its findings alternative designs that would be less environmentally damaging. Alternatives that should be considered include, but should not be limited to: (1) redeveloping the existing structure, (2) alternative house sizes, including an alternative house size that is no larger than the average house size of similarly-constrained property in the surrounding neighborhood, (3) alternative designs that minimize the footprint of the house (and any proposed J/ADU) on the ground by utilizing the same footprint as the existing cabin and adding an upper story or stories, and (4) alternative floor plans that minimize encroachment into ESHA and ESHA buffer areas.

D. Mitigation Measures

After identifying the least environmentally damaging feasible alternative, if the alternatives analysis demonstrates there are no feasible alternatives that do not encroach into ESHA and ESHA buffer areas, the County should demonstrate how the proposed development implements *all* feasible mitigation measures consistent with LCP requirements that include but are not limited to CZC Sections 20.496.020(A)(4) and 20.532.100(A)(1). In addition to implementing the mitigation measures recommended by CDFW, additional mitigation measures should include but are not limited to requiring as a condition of approval the recordation of a deed restriction that adequately prohibits all development in the ESHA buffer area on the property except for the following types of development: a) removal of non-native vegetation; b) the planting of native vegetation, or c) vegetation clearance if required by CalFire.

Since rodenticides are sometimes used to prevent rats, moles, voles, gophers, and other similar small animals from eating newly planted saplings, and many rodenticides have been found to pose significant primary and secondary risks to non-target wildlife present in urban and urban/wildland areas, we also recommend the County require that the use of any rodenticides on the property shall be prohibited, to minimize potential significant adverse impact of rodenticide use to other environmentally sensitive wildlife species.

E. CEQA Compliance

Commission staff is also concerned about the adequacy of the County's compliance with the California Environmental Quality Act (CEQA). As indicated in the staff report, County staff is proposing that the Coastal Permit Administrator adopt a mitigated

negative declaration (MND) for the proposed development. As you know, MNDs are reserved for discretionary approvals where a project's significant adverse impacts have been identified but mitigation measures are incorporated into the project to make those impacts less than significant. The staff report explicitly acknowledges in Finding 1. on page 11 that "all requisite findings pursuant to MCC Section 20.532.100(A) cannot be made because the Project may result in substantial degradation of ESHA." Given the disallowed impacts on ESHA identified in the staff report by allowing a non-resource dependent use in ESHA and the buffer, the fact that the development cannot be found consistent with ESHA policies, alone, should be considered an unavoidable significant adverse impact on ESHA that requires a statement of overriding considerations which is only possible through preparation of an environmental impact report (EIR) under CEQA. Furthermore, the staff report states, on page 12, that "there is no feasible less environmentally damaging alternative to the Project" yet a word search in the staff report for "alternative" reveals that the County did not actually evaluate any alternative designs, siting or consider renovation and an addition as a possible path to avoid ESHA impacts. Therefore, the Commission recommends that either the County prepare an EIR to adequately address the ESHA impacts or pursue an alternative project that avoids the significant adverse impacts on ESHA if it chooses to continue the path of adopting an MND for the Project.

2. LCP Requirements for Nonconforming Uses and Structures

The supporting application materials included with the staff report describe the cabin as a legally non-conforming structure. Therefore, the County's findings should address how any use and/or modification of the existing cabin conforms with the requirements of CZC Chapter 20.204 ("Nonconforming Uses and Structures").

Thank you again for the opportunity to provide comments. Should you have any questions, please contact me at Tamara.Gedik@coastal.ca.gov.

Sincerely,



TAMARA L. GEDIK
Supervising Analyst

Cc: Wynn Coastal Planning
CA Department of Fish and Wildlife











Brunsing Associates, Inc.

GEOTECHNICAL INVESTIGATION

DE ALBA RESIDENCE
33389 PACIFIC WAY
FORT BRAGG, CALIFORNIA

Project Number 13364.01

May 24, 2022

Engineers and Geologists

GEOTECHNICAL INVESTIGATION

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prepared for

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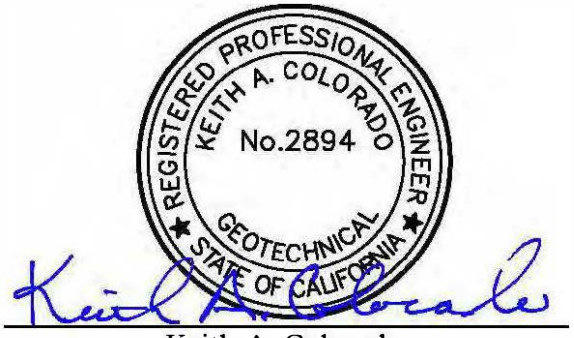

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1.0 INTRODUCTION

This report presents the results of the geotechnical investigation that Brunsing Associates, Inc. (BAI) has performed for the proposed De Alba residence at 33389 Pacific Way, Fort Bragg, California. The site is located on an ocean bluff approximately 400 feet northwest of Belinda Point, approximately three miles south-southwest of Fort Bragg, as shown on the Vicinity Map, Plate 1.

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 May 24, 2021, 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 Map 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 geotechnical reports prepared by BAI on nearby properties. A list of selected published references reviewed for this investigation is presented in Appendix A.

2.2 Aerial Photograph Studies

Our investigation was augmented by studying black and white, vertical aerial photograph prints of the site dated 1963, 1981, 1998, 1999 (color) and 2000. Color, vertical aerial photographs dated 1986 and 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 2003, 2004, 2005, 2009, 2010, 2012, 2013 and 2018.

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, 1979, 1987, 2002, 2005, 2009, 2013 and 2019. The 1979 and 2019 oblique aerial photographs are presented on Plate 2 for comparison purposes.

2.3 Field Reconnaissance

On June 9, 2021, BAI's Principal Engineering Geologist, Erik Olsborg and BAI's Staff Geologist David Stafford met with Surveyor Cliff Zimmerman at the site. Mr. Olsborg and Mr. Zimmerman performed a reconnaissance of the upper bluff edge in order to locate four survey monuments previously set by Mr. Zimmerman "within a few feet of the bluff edge;" three of those monuments

were set in 1991 and one in 1995. BAI and Zimmerman found all four of the "near bluff edge" monuments. Simultaneously, Mr. Stafford walked on the beach and over some rocks to examine the lower bluff face.

Our field reconnaissance consisted of examination of bedrock and soil exposed on the bluff face and interpretation of geomorphic expressions on the uppermost part of the bluffs within the property and vicinity. Our reconnaissance was performed during a tide level of approximately +3.0 feet, per published tide tables.

2.4 Subsurface Exploration

Our subsurface drilling exploration was conducted on June 29, 2021, and consisted of drilling, logging, and sampling three exploratory test borings, B-1 through B-3. The test borings were advanced to depths of 6.5 to 14.5 feet below ground surface, with a portable drill rig using solid stem flight auger drilling equipment. The approximate locations of our test borings are shown on Plate 3.

Our staff geologist made a descriptive log of each test boring and obtained relatively undisturbed (tube) samples of the soil and bedrock materials encountered for visual classification and laboratory testing. Relatively undisturbed samples were obtained using 3.0-inch (CA) and 2.5-inch (CM) outside diameter, modified California split-barrel samplers. Disturbed samples were obtained with a 2-inch outside diameter Standard Penetration Test (SPT) sampler. The inside of the sampler barrels contained tube liners for retaining the soil and bedrock samples. The samplers were driven by a 70-pound drop hammer falling 30 inches per blow. Blows required to drive the CA, CM and SPT samplers were converted to Standard Penetration Test (SPT) blow counts[1] for correlation with empirical test data using conversion factors of 0.32, 0.4, and 0.5, respectively. Blow counts are presented on the boring logs.

Graphic logs of the borings, showing the soil and bedrock materials encountered are presented on Plates 4, 5, and 6. The soils are classified in accordance with the Unified Soil Classification System outlined on Plate 7. The various descriptive properties used to describe the soils and bedrock are listed on Plates 8 and 9, 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 testing consisted of moisture content, dry density, direct shear, and unconsolidated, undrained triaxial compressive strength tests. The test results are presented opposite the samples tested on the boring logs. A key to test data is provided on Plate 7. In addition, direct shear test results are presented on Plate 10 and triaxial shear strength test results are presented on Plate 11.

[1] SPT blow counts provide a relative measure of soil consistency and strength, and are utilized in our engineering analyses.

3.0 SITE CONDITIONS

The property is located on an ocean bluff northeast of Belinda Point. The west-northwest end of the property is an ocean bluff approximately 35 to 40 feet in vertical height. A sand and gravel beach, with scattered cobbles and boulders, is located below the southwesterly portion of the property bluffs (Site Photographs A and B, Plates 12 and 13). Our photograph locations and orientations are shown on Plate 3. The beach extends northerly to the central portion of the property where a seasonal drainage swale outlets over the bluff to the beach (Site Photograph C, Plate 14).

The northwest property bluffs are lined with rocks at the water line (Site Photograph D, Plate 15). A small sea cave, approximately 10 feet high by 8 feet wide by 8 feet deep (Site Photograph E, Plate 16) is located on the northwest bluffs, as shown on Plate 3. The northwest corner of the property forms a small point or peninsula. A sand and gravel beach is located on the north side of this peninsula (Site Photograph F, Plate 17).

The four, bluff edge survey monuments (rebar and a large nail) that were set by Surveyor, Clifford Zimmerman in 1991 and 1995 (the northernmost monument), are shown on Plate 3. According to Mr. Zimmerman, the monuments were all set "within a few feet of the bluff edge" on the dates indicated. The monuments observed by BAI with Mr. Zimmerman are still "within a few feet of the bluff edge."

The property contains an existing house and a couple of sheds in the south-central portion of the site. The gravel driveway to the house runs south from Pacific Way though a roadway easement on the northeast side of the property. The driveway then runs along the southwest side of the property to a parking area next to the existing house.

The property is bordered to the north by a vacant lot. The eastern boundary of the property is flanked by a neighboring property on Pacific Way; while the southern edge of the subject property is bordered by an easement that allows public access to the beach that exists between Belinda Point and the property.

The property encompasses 3.2 acres of coastal prairie grassland that is home to small and large coastal pine trees. According to Google Earth, the proposed building site is at approximate elevation 43 to 47 feet.

The proposed building site is approximately 50 feet from the ocean bluff's edge. The building site gently slopes to the southwest and is comprised of hummocky grassland interspersed by several coastal pine trees. Along the westernmost edge of the proposed building envelope, BAI discovered what appears to be remnants of a previous structure fire. Several inches beneath the brush and grass, blackened pieces of plywood, old door hinges, and large gravels can be found concentrated in the area between where the current cabin is located is and the fire pit.

4.0 SITE GEOLOGY AND SOILS

4.1 Regional Geologic and Seismic Setting

The subject property occupies a gently-sloping marine terrace that 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 about 8,000 years ago.

4.2 Site Geology and Soils

The site is underlain by Tertiary-Cretaceous Period sedimentary rocks of the Franciscan Complex Coastal Belt. The bedrock on the lower portion of the property bluffs consists of gray and brown sandstone. The sandstone is poorly bedded, intensely to closely fractured, moderately hard to hard and moderately weathered. The bedrock exposed on the upper part of the bluffs and encountered at approximately 4 to 13.5 feet below the ground surface in our borings, consists of multi-colored sandstone. The colors vary from light brown to orange, red-orange, gray and blue. The sandstone is crushed, friable to moderately hard and deeply weathered. The borings encountered practical drilling refusal with the light portable drill rig in moderately hard sandstone at depths of 6 to 14.5 feet.

The Franciscan complex bedrock is overlain by poorly-consolidated, Pleistocene Epoch terrace deposits. The terrace deposits encountered in our borings were approximately 6 to 13.5 feet thick. The terrace materials were deposited in lenses that are generally flat, with local undulations resulting in variable thickness, caused by the variable-energy nature of the depositional environment. The upper terrace deposits are comprised of approximately 1 to 4 feet of dark brown to light brown silty sand topsoils that are generally loose, porous and locally contain roots. Below the topsoils, the terrace deposits consist of light brown to light yellow orange and light gray silty sands, to sands with silt that are loose to medium dense. The terrace deposits appear to have a low expansion potential (tendency for volume change with changes in moisture content). Cross Section A-A' on Plate 18 depicts the approximate bluff topography and interpretation of the subsurface terrace deposits and bedrock units.

No deep-seated landslides or areas of severe erosion were observed on the property bluffs and no landslides are shown on the property on the published geologic maps we reviewed. Minor erosion is occurring in the drainage swale, bluff outfall area, as can be seen in Site Photograph C, Plate 14.

No evidence of active faulting was found at the property, and none of the published references that we reviewed show faults on, or trending towards, the property. 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 off the Mendocino coast about 4.4 miles southwest of the property.

5.0 DISCUSSION AND CONCLUSIONS

5.1 General

Based upon the results of our research, reconnaissance, and subsurface exploration, we conclude that the site is geologically and geotechnically suitable for construction of the planned structure. The main geological and geotechnical considerations affecting the proposed construction are loose and porous near-surface soils, potential settlement, bluff stability, bluff erosion/retreat rate, strong seismic shaking from future earthquakes and liquefaction potential. These considerations and their possible mitigation measures are discussed below.

5.2 Loose and Porous Surface Soils

The areas of our borings are covered by approximately 3 to 4 feet of terrace deposits that are loose, porous and contain roots. These soils are weak and susceptible to settlement and erosion. These soils are not suitable to support foundation or concrete slabs on grade.

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

For our analysis, we used qualitative comparisons of the 1963 through 2018 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 over the years at the site.

Importantly, the bluff monuments set by Surveyor, Cliff Zimmerman, "a few feet from the bluff edge" in 1991 and 1995 are still "a few feet from the bluff edge". The fact that these monuments are still a few feet from the bluff edge after 26 years (one monument) and 30 years (three monuments) demonstrates that the bluff retreat rate is very low. BAI estimates the average bluff retreat rate to be approximately one inch per year, or less.

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 77 feet in the last 58 years (1963 to 2021, our earliest, accurate aerial photograph up to the present). Seventy-seven 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		
2021**	0.6	6.7	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		
2096**	6.2	76.6		
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 2096, the sea level will be as much as approximately 76.6 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 6.7 inches, projected.

Based upon historic aerial photographs and site observations, the current historic, average bluff retreat rate appears to be one inch per year, or less. The hard bedrock within the lower bluffs is very erosion resistant. Even with a 23-inch sea level rise by 2050, the ocean wave erosion will still be resisted by hard bedrock. The current bluff retreat rate (one inch per year) should continue until at least 2040.

Table 2: Bluff Retreat Rate				
Years	Span (years)	Cumulative Sea Level Rise (inches)*	Retreat Rate (inches per year)	Amount of Retreat (inches)
2021-2040	19	16"	1.0"/yr.	19
2040-2050	10	23"	1.5"/yr.	15
2050-2070	20	42"	2.0"/yr.	40
2070-2096	26	77"	2.5"/yr.	65
				139" = 12'

*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, located approximately 3.4 miles south of the subject property, 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 35 to 40 feet in vertical height, impact or inundation from a severe storm surge or tsunami event is a relatively low, but possible risk for the site.

Tsunamis are caused by large-scale sea floor elevation changes resulting from earthquakes on thrust faults associated with tectonic subduction zones. Major earthquakes have occurred along these Pacific Rim subduction zones in recent times; however, no significant tsunami in the Mendocino coastal zone has resulted from these earthquakes. Tsunami damage has been limited to moored boats and docks within the coves and harbors in Mendocino County. There are several factors that minimize the tsunami potential for Mendocino County:

- The San Andreas Fault is a strike slip fault. Earthquake fault rupture causes ground shifting relative to one side versus the other, but does not result in large, vertical uplift.
- The Mendocino Escarpment is a large, undersea ridge that extends west of Cape Mendocino. The ridge forms a partial wall that runs a few hundred miles to the west. According to Trenkwalder and Stover, the overall effect is that tsunami waves running south toward the escarpment tend to turn north "to impinge on Crescent City."
- In the area south of the Mendocino Escarpment, the ocean is deeper than in the region north of the escarpment. This effect causes a dispersion and reduction in tsunami wave energy in the coastal waters south of Cape Mendocino.

5.7 Seismicity and Faulting

As is typical of the Mendocino County area, the site will be subject to strong ground shaking during future, nearby, large magnitude earthquakes originating on the active San Andreas 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 development 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. The CGS report also suggest slopes that have a pseudo-static factor of safety greater than 1.0 using a seismic coefficient derived from the screening analysis procedure can be considered stable. For our analysis we used a seismic coefficient of 0.356.

The cross-section A-A,' as shown in Appendix B, was created from Exhibit Map, prepared by Forrest Francis, Land Surveyor, dated 8/21 and our subsurface exploration. The location of the cross section used for our stability analyses is shown on Plate 3.

From our subsurface exploration, four soil and bedrock units, with different density and strength parameters, were identified within the bluff for our stability analyses. Unit "1" is the silty sand (topsoil) that is very loose to loose, Unit "2" is the silty sand that is medium dense, Unit "3" is the sand with silt (few fines) that is medium dense, and Unit "4" is the moderately weathered sandstone that encountered drilling refusal. Table 3 summarizes soil and bedrock parameters used.

Table 3: Soil and Bedrock Parameters

Unit	Wet Density (pcf)	Cohesion (psf)	Friction Angle (ϕ)
1	110	100	15
2	125	400	28
3	113	300	36
4	130	750	40

The above assigned strengths were determined from strength test results obtained from this site, adjacent sites 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 the bluff has a factor of safety greater than 1.5 for static conditions and a factor of safety greater than 1.0 for pseudo-static conditions, seismic coefficient of 0.356.

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	0	1.7
B-2	0.25	1.2	2.0
B-3	0	0	1.2

6.0 RECOMMENDATIONS

6.1 Bluff Setback

We understand that the property has a "required" 50-foot bluff setback. Nonetheless, BAI is hereby presenting our recommended bluff setback for further consideration.

Our recommended bluff setback is based upon the current bluff retreat rate and the projections of increased retreat rates resulting from sea level rise. Our bluff slope stability analysis results show no increase to our bluff setback is necessary.

The bluff retreat rates presented in Table 2 can be used for bluff setback determination. Our bluff setback is based upon a period of 75 years, considered by the CCC to be the economic lifespan of a house, and the projections of increased retreat rates resulting from sea level rise. Using the amount of retreat (12 feet) over a period of 75 years, plus a safety factor of three results in our recommended bluff setback of 36 feet.

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 their 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 3.5 feet below existing grades as determined in the field by BAI. Deeper excavating may be necessary to remove isolated very weak soils.

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 natural supporting material or 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 18-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.

Where weak and porous, loose sands or soft clays are not removed; footing excavations should extend at least 12 inches into supporting material, resulting in footing excavations that are about 48 to 54 inches deep below existing grade. Deeper excavation might be required if loose or soft soils are exposed in the excavations. The lower portions of the deepened footing excavations can be filled with lean concrete (two sacks of cement per cubic yard) leaving sufficient space at the top of the footing excavation for a standard, reinforced footing. The footings should be tied into the lean concrete per the structural engineer's requirements. 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 residence 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 soil or bedrock, as determined by BAI. The supporting soil was encountered at approximately 4.0 feet below ground surface. The bedrock was encountered between 4 to 13.5 feet below the ground surface. The drilled piers should be at least nine feet in length. The piers should all be supported on similar material, if one pier penetrates the bedrock, all the piers should penetrate the bedrock. 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 250 pounds per square foot (psf) of shaft area may be used in the supporting soils, for dead loads plus live loads. 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. 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 200 psf (rectangular distribution) can be used within the supporting soils. An allowable passive pressure of 400 psf (rectangular distribution) can be used within the bedrock. Passive pressure should be neglected within the upper three feet where weak soils are not removed. 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 not encountered in our test borings. However, if piers are drilled during the wet/rainy season, caving could occur. 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 =	1.732g
Mapped Spectral Response Acceleration at 1.0 sec	S_1 =	0.706g
Modified Spectral Response Acceleration at 0.2 sec	S_{MS} =	2.079g
Modified Spectral Response Acceleration at 1.0 sec	S_{M1} =	0.988g
Design Spectral Response Acceleration at 0.2 sec	S_{DS} =	1.386g
Design Spectral Response Acceleration at 1.0 sec	S_{D1} =	0.659g
Site Coefficient	F_a =	1.2
Site Coefficient	F_v =	1.4
Long-period transition period	T_L =	12
Seismic Design Category	=	D

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 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 rocks 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 18. 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 or subsurface 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 19. 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 20.

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 a triangular distribution is recommended, varying from 0 (zero) pounds per square foot (psf) at the top of the embedded portion of the wall to 25H psf at the bottom of the embedded portion, where "H" is the height of the embedded portion (resultant dynamic thrust act at 0.33H 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.

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

Prior to construction, BAI should review the final grading and foundation plans, and soil related specifications for conformance with our recommendations. 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, and foundation construction. Foundation excavations should be reviewed by BAI while the excavation operations are being performed. 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.

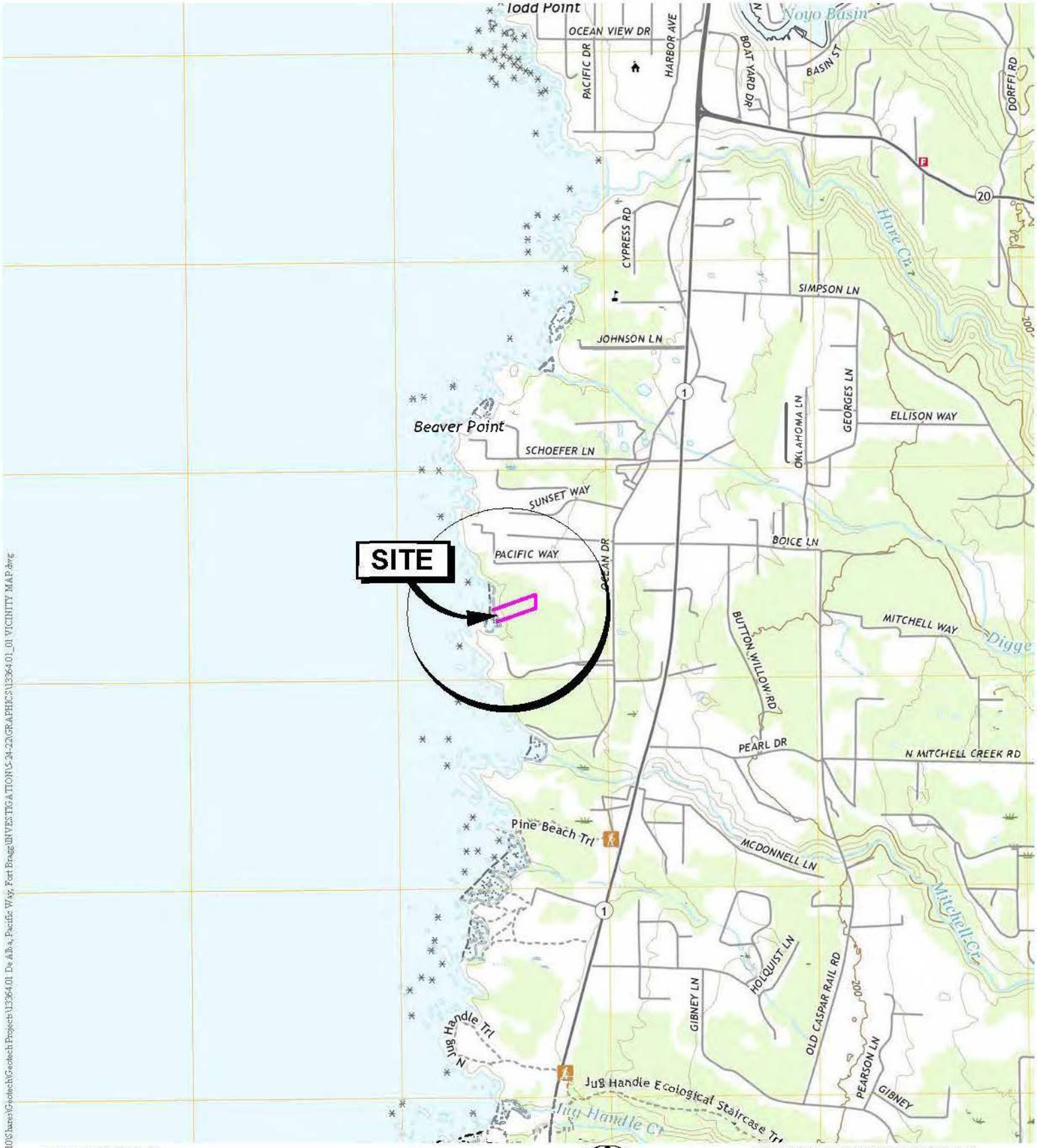
This report is issued with the understanding that it is the responsibility of the Owner, or his/her representative, to ensure that the information and recommendations contained herein are brought to the attention of all other design professionals for the project, and incorporated into the plans, and 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 building 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:
Fort Bragg Quadrangle
7.5-Minute Series, USGS, 2018

Latitude: 39.398420
Longitude: -123.818432

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.: 13364.01
Appr.: KAC
Date: 05/24/22

VICINITY MAP
DE ALBA RESIDENCE
33389 Pacific Way
Fort Bragg, California

PLATE
1

\\192.168.2.106\Banes\Geotech\Geotech Projects\13364.01 De Alba, Pacific Way, Fort Bragg\INVESTIGATION\5-24-22\GRAPHICS\13364.01_01 VICINITY MAP.dwg
12/7/2021 3:48:19 PM | save date
3/24/2022 2:58:40 PM | plot date



2019 COASTLINE OBLIQUE AERIAL PHOTOGRAPH

1979 COASTLINE OBLIQUE AERIAL PHOTOGRAPH

Reference:
California Coastal Records project, www.californiacoastline.org, by permission.

Brunsing Associates, Inc. 5468 Skylane Blvd., Suite 201 Santa Rosa, California 95403 Tel: (707) 528-6108	**Job No.:** 13364.01 **Appr.:** EEO **Date:** 05/24/22	**1979 and 2019 COASTLINE OBLIQUE AERIAL PHOTOGRAPHS** DE ALBA RESIDENCE 33389 Pacific Way Fort Bragg, California	**PLATE** **2**

\\192.168.2.10\Shares\Geotech\Geotech Projects\13364.01 De Alba, Pacific Way, Fort Bragg\INVESTIGATION\5-24-22\GRAPHICS\13364.01
5/24/2022 2:58:58 PM save date
AERIAL PHOTOGRAPHS.dwg
5/24/2022 2:59:06 PM plot date

LEGEND

B-3 Borings location and number

E Photograph location and the direction

A A' Cross Section

F

FOUND 3/4" REBAR NO TAG

50' BLUFF SETBACK

15' SETBACK FROM SWALE

B-2

BUILDING ENVELOPE

TOP OF BLUFF

FOUND 3/4" REBAR NO TAG

N 28°12'38" W 15.60'

N 62°51'07" W 36.51'

N 79°28'51" W 18.68'

N 59°13'50" W 53.97'

E

N 08°43'35" E 23.09'

N 44°03'01" W 7.53'

S 81°05'29" W 10.79'

N 21°39'18" W 9.44'

D

SWALE

B-1

C

B

Approximate Location of Nail

TOP OF BLUFF

MEAN HIGH TIDE LINE

N 02°59'16" W 65.98'

N 14°08'44" W 50.83'

A

A'

FOUND 3/4" REBAR NO TAG

X GREEN FLAGS

103.00'

EASEMENT FOR VERTICAL PUBLIC ACCESS PER 2203 O.R. 504 M.C.R.

S 72°02'00" W 336.00'

95.00'

B-3

SHED

DECK

HOUSE

31.29

25' EASEMENT FOR VERTICAL PUBLIC ACCESS PER 1778 O.R. 120 M.C.R.

S 24°49'36" W 34.34'

FOUND 3/4" NO TAG

S 06°47'15" W 21.73'

FOUND 3/4" RE NO TAG

X GREEN FLAGS

25.00

SHED

RECREATIONAL EASEMENT
STIPULATED JUDGEMENT NO. 59950
1927 O.R. 384 & 1970 O.R. 85

NORTH

APPROXIMATE SCALE (FEET)

0 15 30 60

REFERENCE:
Google Earth image overlaid with Exhibit Map, prepared by Forrest Francis Land Surveyor, dated 8/21

Brunsing Associates, Inc. 5468 Skylane Blvd., Suite 201 Santa Rosa, California 95403 Tel: (707) 528-6108	Job No.: 1336401 Appr.: EEO Date: 05/24/22	**SITE MAP** DE ALBA RESIDENCE 33389 Pacific Way Fort Bragg, California	**PLATE** **3**

Log of Boring B-1

Equipment: Light Portable Drill Rig (Little Beaver)
Date: 6/29/21 **Logged By:** DJS
Elevation: 43 feet*** **Latitude:** 39.398416 **Longitude:** -123.818501

Laboratory Tests	Sampler Type*	Moisture Content (%)	Dry Density (pcf)	Blows/foot	Depth (ft.)	Sample	
					1		DARK BROWN TO LIGHT BROWN SILTY SAND (SM) loose, dry
					2		LIGHT BROWN SILTY SAND (SM) loose, moist
	CA			8 **	3		
					4		LIGHT BROWN TO LIGHT RED TO GRAY SILTY SAND (SM) medium dense, moist
Tx 2658 (720) 17% Passing #200	CA	15.5	110	17 **	5		
					6		
					7		LIGHT BROWN TO YELLOW YELLOW SAND (SP-SM) with silt medium dense, moist to wet
DS 527 (500)		9.0	112		8		
DS 870 (1000)	CA	8.6	113	16/6"**	9		
					10		
					11		
					12	▽	LIGHT GRAY SAND (SP-SM) with silt medium dense, saturated few gravels
	CA			28 **	13		
	SPT			25/5"	14		RED-ORANGE GRAY SANDSTONE crushed, friable to low hardness, deeply weathered

Notes:
1. Free water encountered at 12 feet
2. No caving
3. Practical refusal at 14.5 feet

Latitude/Longitude estimated from Google Earth.
* See Soil Classification Chart & Key to Test Data
** Equivalent "Standard Penetration" Blow Counts.
*** Elevations interpolated from Google Earth.

Scale: 1" = 3'

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Job No.: 1336401
Appr: EEO
Date: 05/24/22

LOG OF BORING B-1
DE ALBA RESIDENCE
33389 Pacific Way
Fort Bragg, California

PLATE 4
SHEET 1 of 1

BORING LOG 1 PER PAGE - 1336401 GINT.GPJ - 6/1/22

Log of Boring B-2

Equipment: Light Portable Drill Rig (Little Beaver)

Date: 6/29/21 **Logged By:** DJS

Elevation: 43 feet *** **Latitude:** 39.398583 **Longitude:** -123.818492

Laboratory Tests	Sampler Type*	Moisture Content (%)	Dry Density (pcf)	Blows/foot	Depth (ft.)	Sample
					0	
					1	
		12.3	90		2	
	CA			3 **	3	
					4	
	CA			28 **	5	
					6	
					7	
					8	
Tx 2556 (1152) 5% Passing #200	CM	11.3	113	24**	9	
					10	
					11	
					12	
Tx 3249 (1584)		13.1	109			
	CM			21 **	13	
	SPT			25/3"	14	

DARK BROWN TO LIGHT BROWN SILTY SAND
very loose, dry

DARK AND LIGHT GRAY SILTY SAND (SM)
medium dense, moist

LIGHT GRAY SAND (SP-SM) with silt
medium dense, moist

DARK GRAY TO BLUE SANDSTONE
crushed, low hardness, deeply weathered

Notes:
1. Free water measured at 11 feet
2. No caving
3. Practical refusal at 14 feet

Latitude/Longitude estimated from Google Earth.
* See Soil Classification Chart & Key to Test Data
** Equivalent "Standard Penetration" Blow Counts.
*** Elevations interpolated from Google Earth.

Scale: 1" = 3'

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Job No.: 13364.01
Appr: EEO
Date: 05/24/22

LOG OF BORING B-2
DE ALBA RESIDENCE
33389 Pacific Way
Fort Bragg, California

PLATE 5

SHEET 1 of 1

BORING LOG 1 PER PAGE - 13364.01 GINT.GPJ - 6/1/22

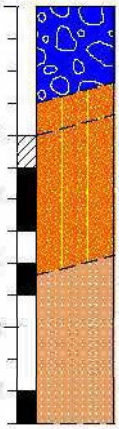
Log of Boring B-3

Equipment: Light Portable Drill Rig (Little Beaver)

Date: 6/29/21 **Logged By:** DJS

Elevation: 47 feet *** **Latitude:** 39.398507 **Longitude:** -123.81816

Sampler Type*	Blows/foot	Depth (ft.) Sample
		1
		2
CA	5 **	3
CA	16/6" **	4
		5
CM	20/3" **	6



GRAY GRAVEL (GP)
loose to medium dense, dry

DARK BROWN SILTY SAND (SM)
loose, damp

LIGHT YELLOW-ORANGE SILTY SAND (SM)
loose, moist

LIGHT BROWN TO ORANGE SANDSTONE
crushed, friable to moderate hardness, deeply to moderately weathered

Notes:
1. No free water encountered
2. No caving
3. Practical refusal at 6 feet

Latitude/Longitude estimated from Google Earth.
* See Soil Classification Chart & Key to Test Data
** Equivalent "Standard Penetration" Blow Counts.
*** Elevations interpolated from Google Earth.

Scale: 1" = 3'

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Job No.: 1336401
Appr.: EEO
Date: 05/24/22

LOG OF BORING B-3
DE ALBA RESIDENCE
33389 Pacific Way
Fort Bragg, California

PLATE 6

SHEET 1 of 1

BORING LOG 1 PER PAGE - 1336401 GINT.GPJ - 6/1/22

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
■ Sample Retained
▨ 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)

Consol - Consolidation
EI - Expansion Index
SA - Sieve Analysis

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

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SOIL CLASSIFICATION CHART & KEY TO TEST DATA

DE ALBA RESIDENCE
33389 Pacific Way
Fort Bragg, California

PLATE 7

I:\SOIL CLASSIFICATION CHART COLOR, 1336401.GINT.GPJ, 6/1/22

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.

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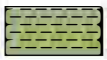
SOIL DESCRIPTIVE PROPERTIES
DE ALBA RESIDENCE
33389 Pacific Way
Fort Bragg, California

PLATE 8

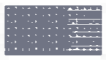
2 SOIL DESCRIPTIVE PROPERTIES; 1336401 GINT GPJ; 6/1/22

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.

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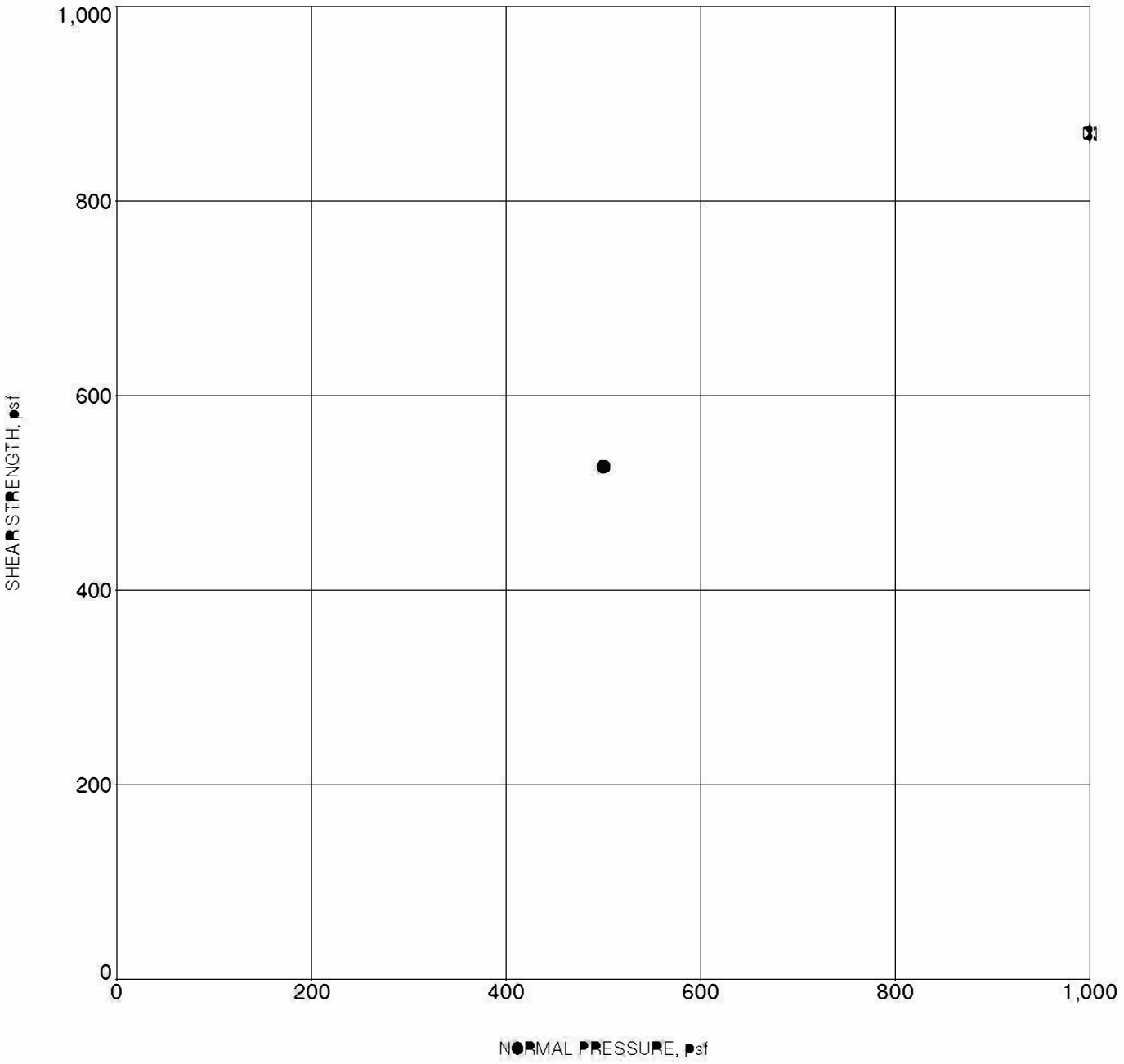
BEDROCK DESCRIPTIVE PROPERTIES
DE ALBA RESIDENCE
33389 Pacific Way
Fort Bragg, California

PLATE 9

3 ROCK DESCRIPTIVE PROPERTIES COLOR, 1336401 GINT GPJ, 6/1/22



Sample Source		Classification		γ_d	MC%	c	ϕ (degree)
●	B-1 at 8.0ft	LIGHT BROWN TO YELLOW YELLOW SAND (SP-SM) with silt	Initial	112	9.0	185	34
			After	119	18.4		
⊠	B-1 at 8.5ft	LIGHT BROWN TO YELLOW YELLOW SAND (SP-SM) with silt	Initial	113	8.6	185	34
			After	118	16.9		

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DIRECT SHEAR TEST RESULTS
DE ALBA RESIDENCE
33389 Pacific Way
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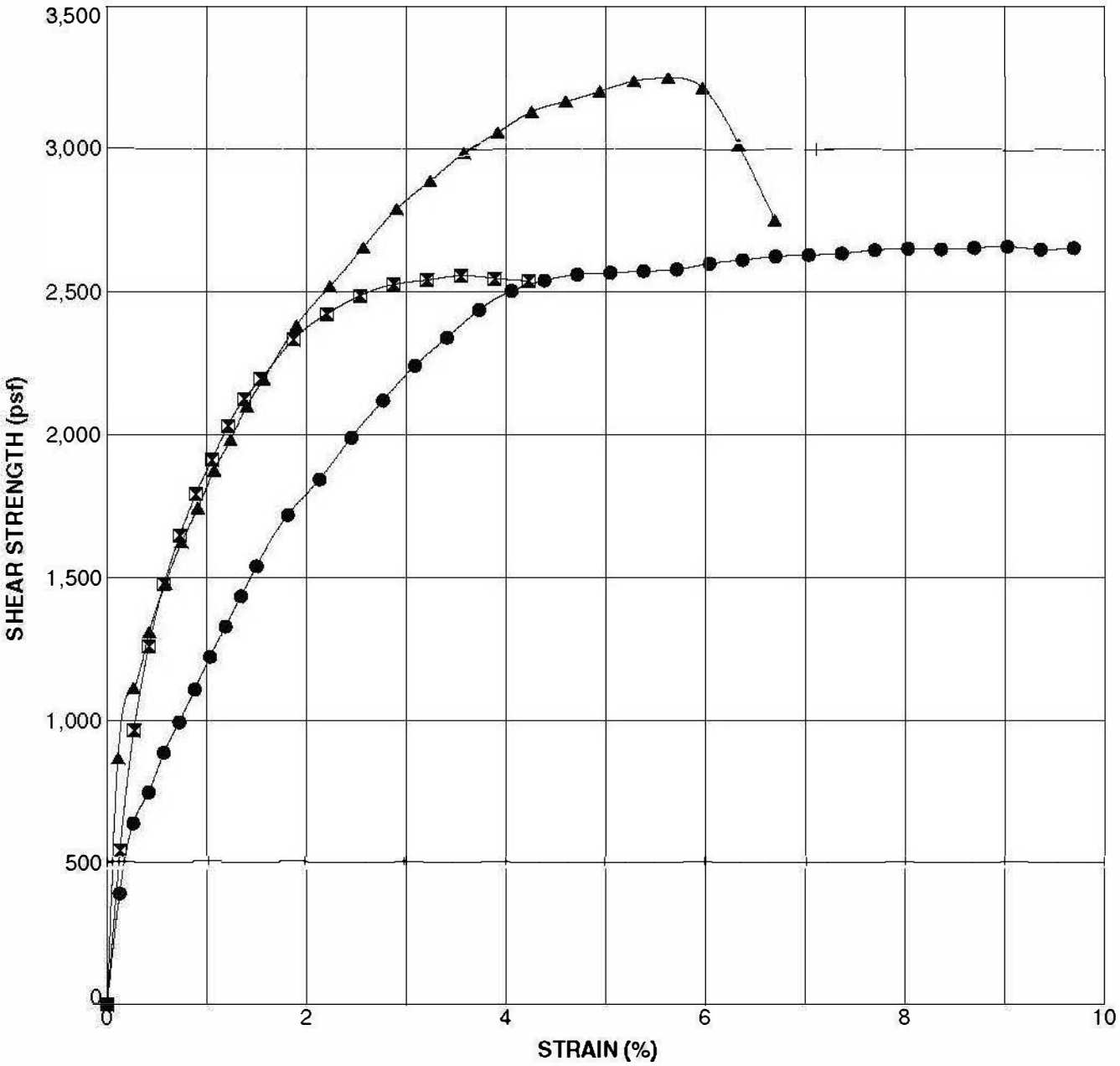
PLATE 10

DIRECT_SHEAR BAL_1336401 GINT.GPJ, 6/1/22



Sample Source	Classification	Confining Pressure (psf)	Ultimate Strength (psf)	Strain (%)	Dry Density (pcf)	Moisture Content (%)
● B-1 at 5 ft	LIGHT BROWN TO LIGHT RED TO GRAY SILTY SAND (SM)	720	2658	9.0	110	15.5
⊠ B-2 at 9 ft	LIGHT GRAY SAND (SP-SM) with silt	1152	2556	3.5	113	11.3
▲ B-2 at 12.5 ft	LIGHT GRAY SAND (SP-SM) with silt	1584	3249	5.6	109	13.1

UNCONFINED TRIAXIAL (ULTIMATE), 13364.01.GINT.GPJ, 6/1/22

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UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST RESULTS

DE ALBA RESIDENCE
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PLATE 11



REFERENCE: BAI photograph, 2021

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5/24/2022 3:00:20 PM, save date
5/24/2022 3:00:29 PM, plot date



REFERENCE: BAI photograph, 2021

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SITE PHOTOGRAPH B
DE ALBA RESIDENCE
33389 Pacific Way
Fort Bragg, California

PLATE
13

5/24/2022 3:00:45 PM save date
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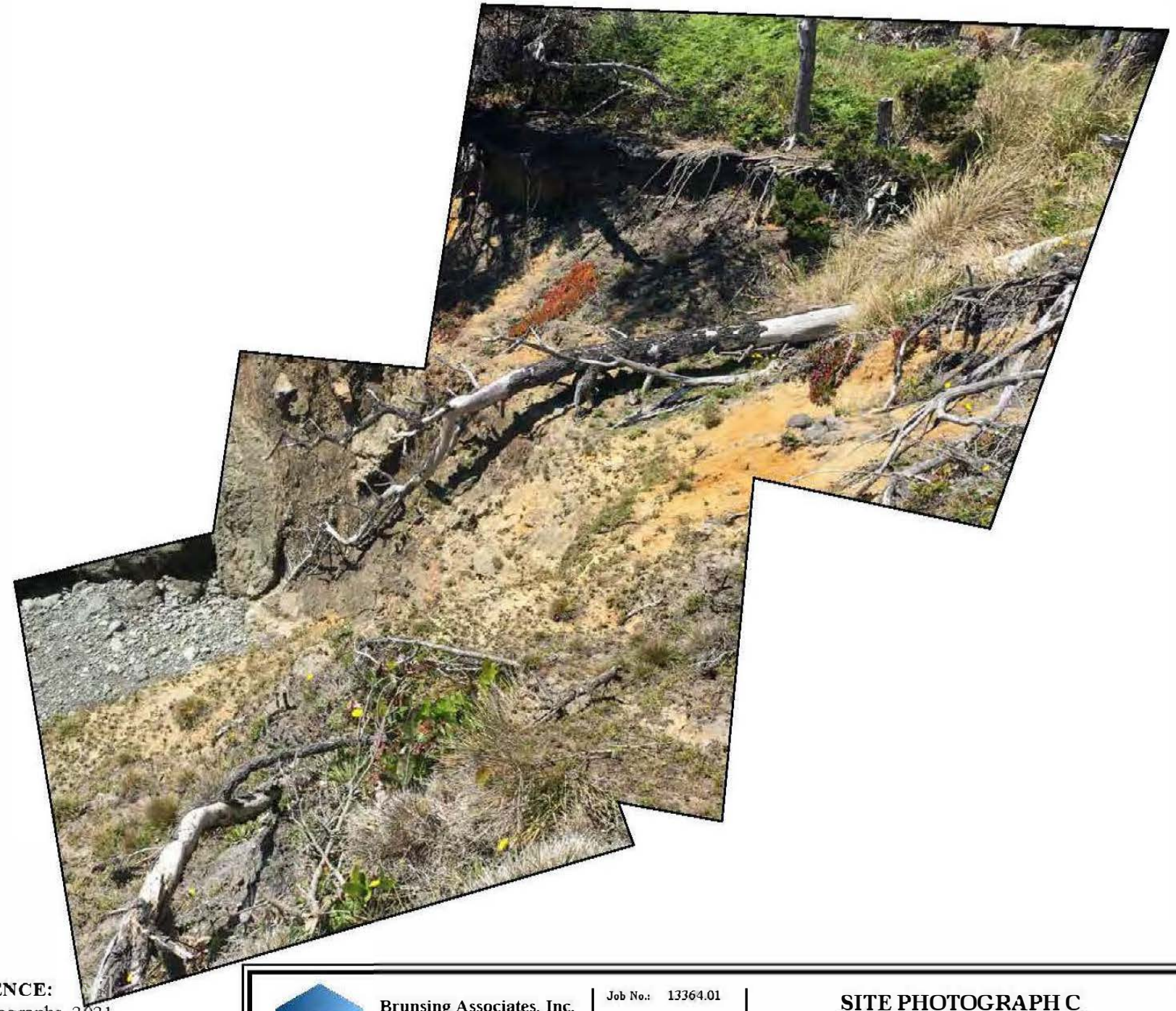

REFERENCE:
BAI photographs, 2021

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SITE PHOTOGRAPH C
DE ALBA RESIDENCE
33389 Pacific Way
Fort Bragg, California

PLATE
14

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SITE PHOTOGRAPH D
DE ALBA RESIDENCE
33389 Pacific Way
Fort Bragg, California

PLATE 15

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REFERENCE: BAI photograph, 2021

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Date: 05/24/22

SITE PHOTOGRAPH E
DE ALBA RESIDENCE
33389 Pacific Way
Fort Bragg, California

PLATE 16

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5/24/2022 3:03:01 PM plot date

REFERENCE: BAI photograph, 2021

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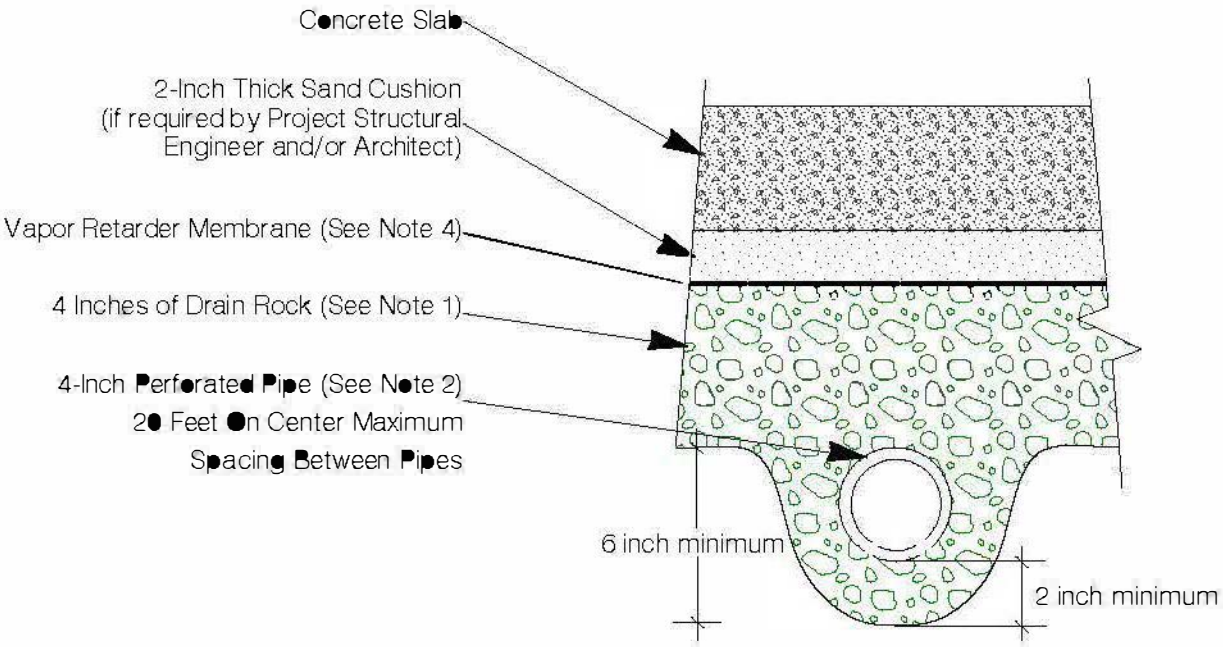

NOT TO SCALE

NOTES:

1. Drain rock should be clean, free-draining 3/4-inch crushed rock.
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 perforated pipe.
4. Vapor retarder should be at least 15-mils thick and installed in accordance with the manufacturer's specifications.

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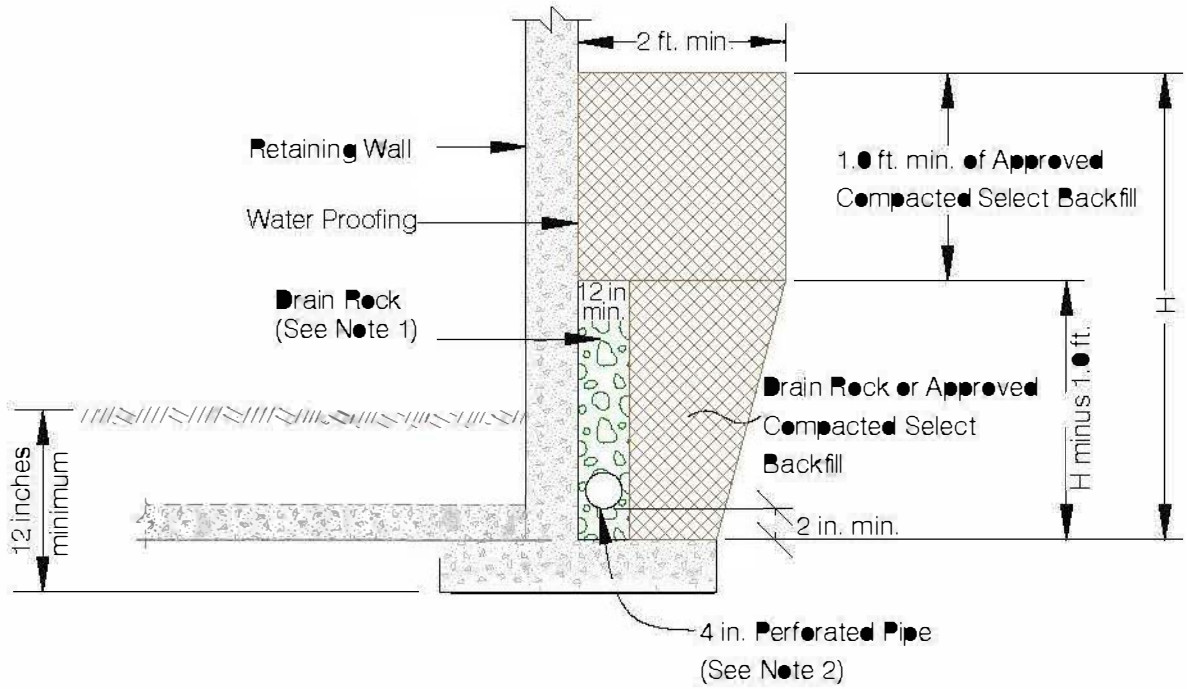
UNDERSLAB DRAINAGE DETAILS
DE ALBA RESIDENCE
33389 Pacific Way
Fort Bragg, California

PLATE 18

4 UNDERSLAB DRAINAGE DETAILS, 13364.01 GINT.GPJ; 6/1/22



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).

5 RETAINING WALL DRAINAGE DETAIL 1336401 GI MT GPJ 6/1/22

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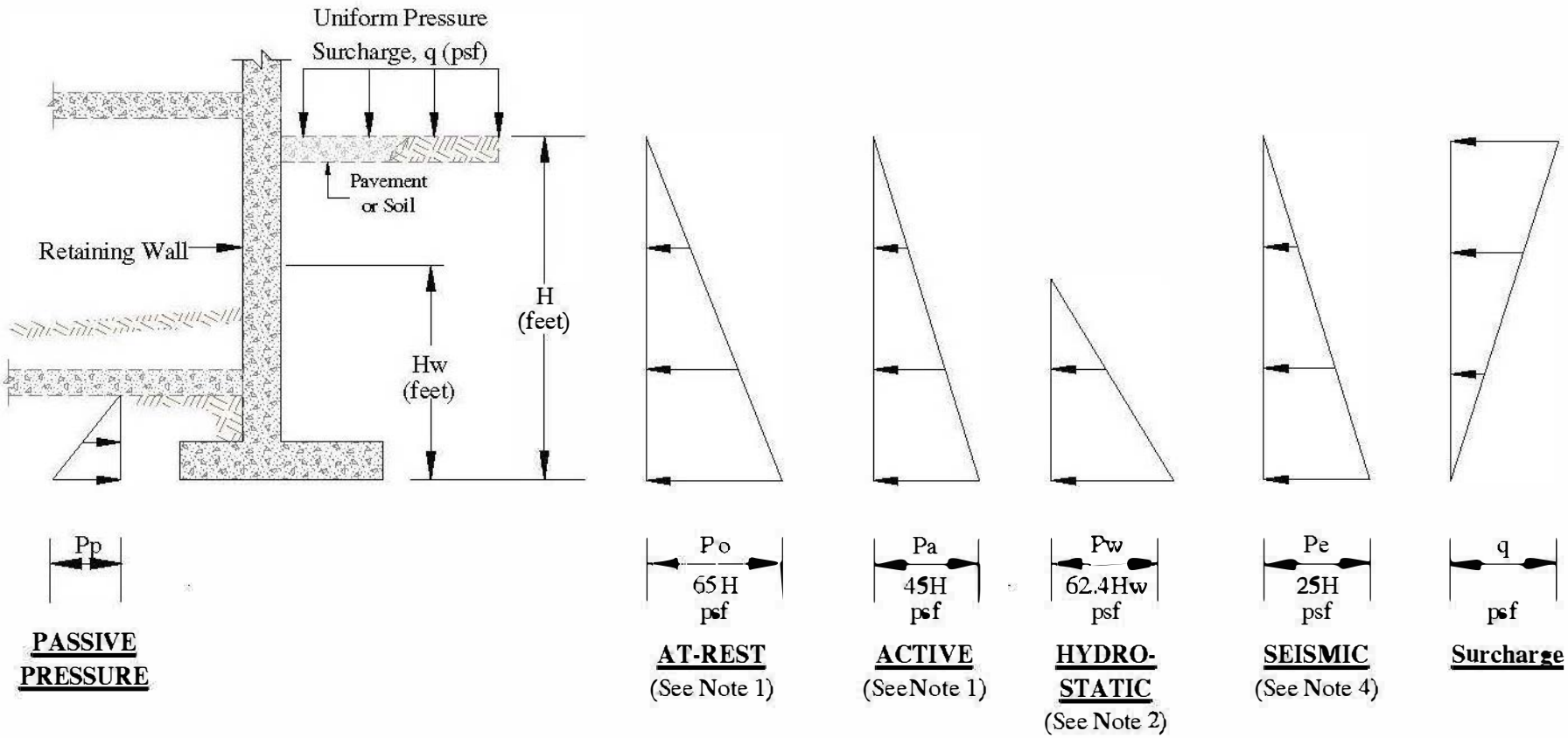
RETAINING WALL DRAINAGE DETAIL
DE ALBA RESIDENCE
33389 Pacific Way
Fort Bragg, California

PLATE 19



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 19 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.

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RETAINING WALL LATERAL EARTH PRESSURES

DE ALBA RESIDENCE
33389 Pacific Way
Fort Bragg, California

PLATE 20

6 RETAINING WALL LATERAL EARTH PRESSURE2, 1336401 GINT.GPJ, 6/1/22

APPENDIX A

References

- Geology and Geomorphic Features Related to Landsliding, Fort Bragg 7.5 Minute Quadrangle, Mendocino County, California, Open File Report (OFR) 83-5, SF, 1983, California Division of Mines and Geology (CDMG).
- Maps of Active Fault Near-Source Zones in California and Adjacent Parts of Nevada: International Conference of Building Officials, 1998, CDMG with the Structural Engineers Association of California Seismology Committee.
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- Hampton, M. A. and Griggs, G. B., 2004, "Formation, Evolution, and Stability of Coastal Cliffs – Status and Trends", USGS Professional Paper 1693.
- Hapke, C. J. and Reid, D., 2007, "National Assessment of Shoreline Change, Part 4: Historical Coastal Cliff Retreat along the California Coast": USGS. Open File Report 2007-1133.
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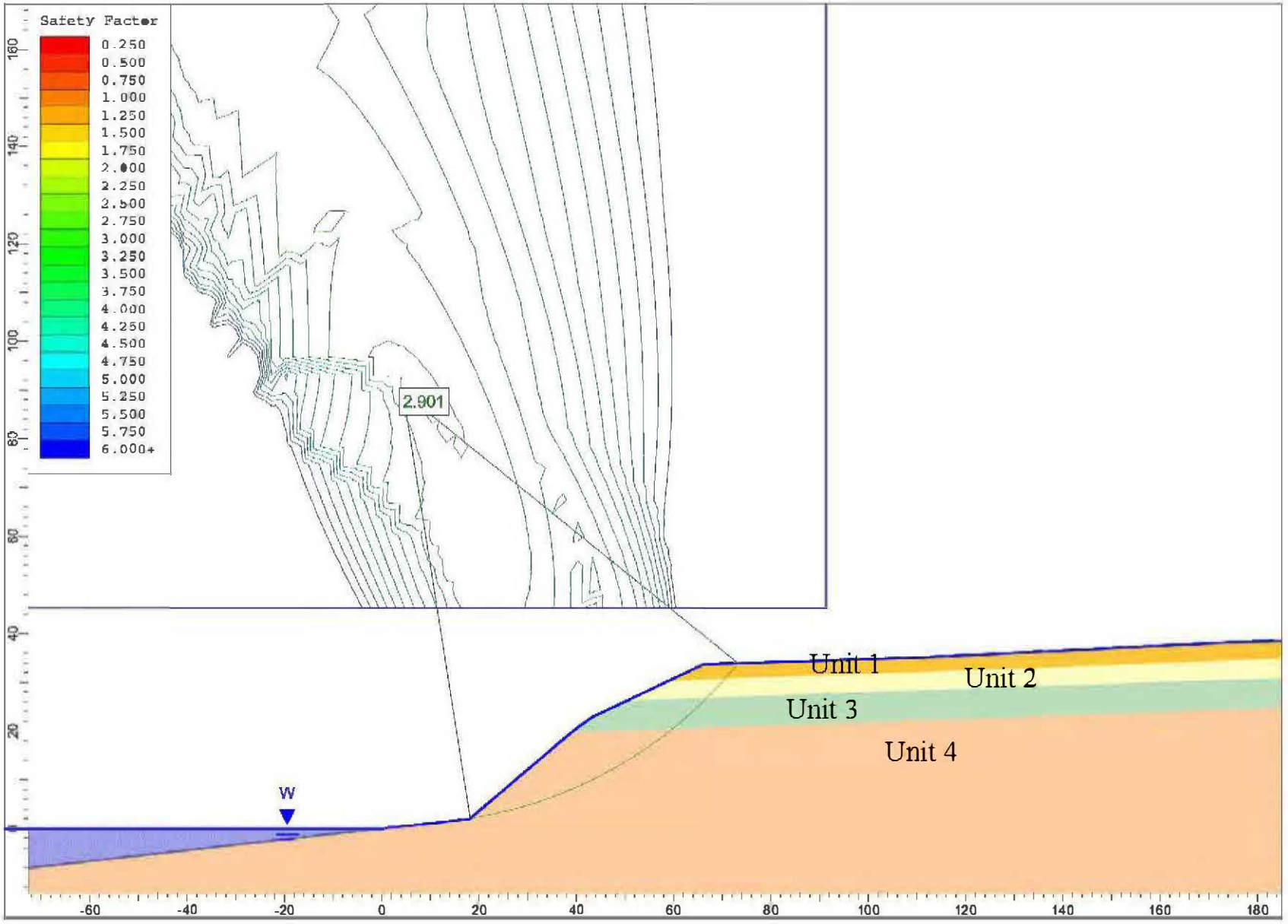
- Update to the Sea-level Rise Guidance Document, 2013, Coastal and Ocean Working Group of the California Climate Action Team.
- Sea-Level Rise for the Coasts of California, Oregon and Washington: Past, Present, and Future, 2012, National Research Council.
- Ted W. Trinkwalder and Ward L. Stover, the March 2011 Tsunami and its Impact on Crescent City Harbor, November/December 2011, Geo Strata.

APPENDIX B

Slope Stability Analysis



Notes:

1. Factor of Safety is greater than 1.5
2. Static Condition

APPROXIMATE SCALE (FEET)

0 15 30 60

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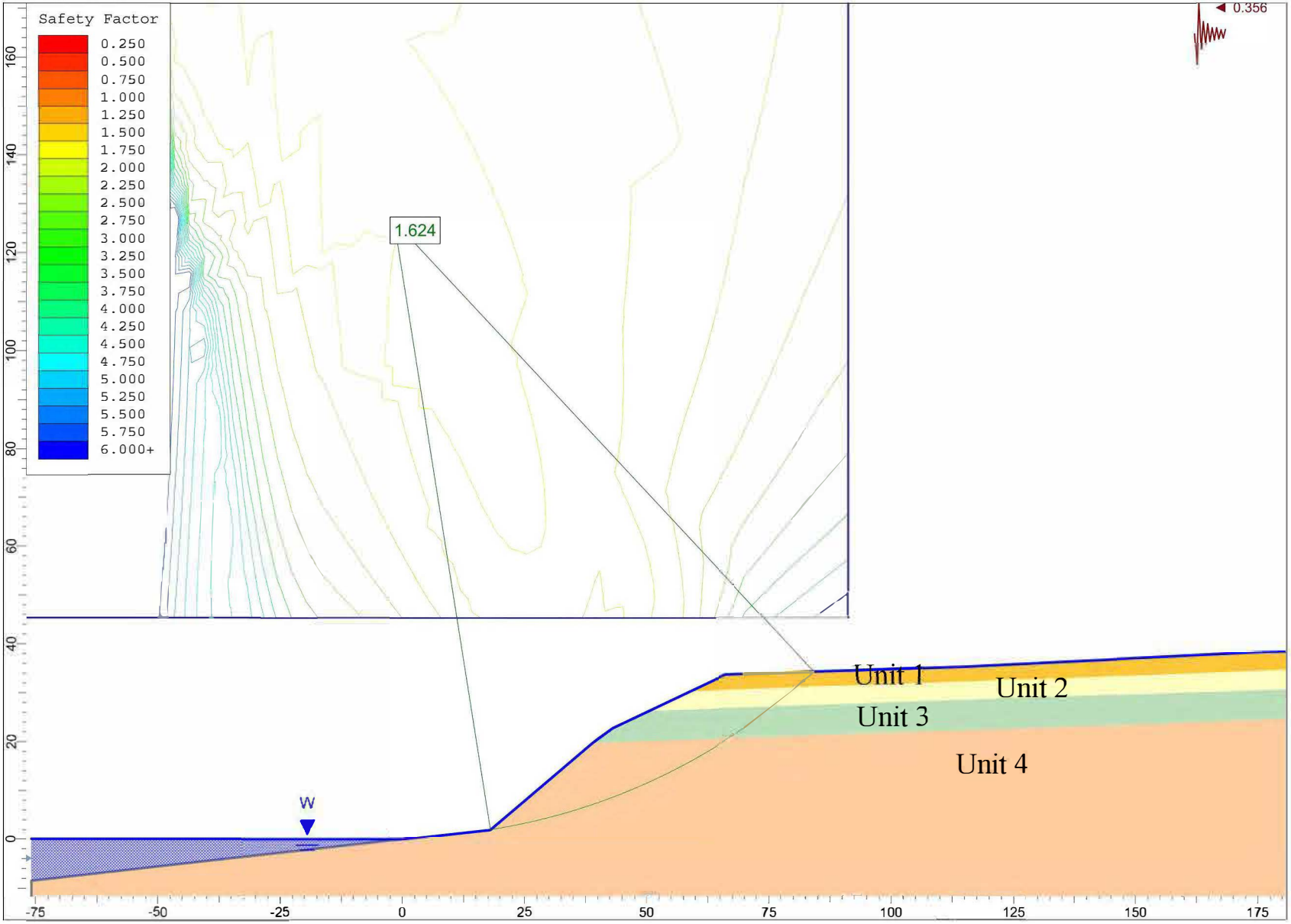
STATIC SLOPE STABILITY CROSS SECTION A-A'
DE ALBA RESIDENCE
33389 Pacific Way
Fort Bragg, California

PLATE
B1



Notes:

1. Factor of Safety is greater than 1.0
2. Horizontal Seismic Coefficient 0.356

APPROXIMATE SCALE (FEET)

0 15 30 60

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SEISMIC SLOPE STABILITY CROSS SECTION A-A'
DE ALBA RESIDENCE
33389 Pacific Way
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PLATE B2

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APPENDIX C

Liquefaction Analysis

Project	De Alba Residence
Project #	13364.01
Date	3/24/2022
Boring	B-1

Input Parameters:

Peak Ground Accel (g) =	0896					
Earthquake Magnitude, M =	7 8					
Water Table Depth (ft) =	2 4		8.00	(ft)		
Average γ Above Water Table (kN/m³) =		20.0	127.0	(lb/ft³)	Ko=	0.5
Average γ Below Water Table (kN/m³) =		19.6	125.0	(lb/ft³)	Nc=	18.1
Borehole Diameter (mm) =	10160		4	(in)		
Requires Correction for Sample Liners (YES/NO)			no			
Rod Length: 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)		13	42	(ft)		
Boring Distance from Exposed Face (m)		18	60	(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. Coef. r_d	CSR	MSF_{max}	MSF for Sand	K_σ for Sand	CRR for M=7.5 & σ'_v=1atm	CRR	Factor of Safety
1	0.46	1.50	0.46	0 23	4	SM		0	20	80	1.33	1	0.75	1.00	4.0	9	9	1.70	6 80	4.5	11.28	1 00	0.584	1 2	0.98	1.10	0 127	NA	NA
2	1 22	4.00	0.76	0 84	8	SM		0	20	80	1 33	1	0.75	1.00	8 0	24	24	1.70	13 60	4.5	18 08	1 00	0.582	1 4	0.96	1 10	0 184	NA	NA
3	2 13	7 00	0.91	1 68	17	SM		0	17	80	1 33	1	0.8	1 00	18 1	43	43	1 38	2500	3.0	2885	0.99	0 578	1.9	0 91	1 10	0421	NA	NA
4	2.44	8.00	0.30	2 29	32	SP-SM		1	5	80	1 33	1	0 8	1 00	34.1	55	55	1 20	40 86	0 0	40 86	0.99	0577	2 2	0 89	1 10	2000	1 95	2 00
5	3.51	11 50	1.07	2.97	32	SP-SM		1	5	80	1 33	1	0 85	1 00	36 3	68	58	1 17	42 49	0 0	42 50	0 98	0 676	2 2	0 89	1 10	2000	1 95	2 00
6	4.11	13 50	0 61	3 81	28	SP-SM		1	5	80	1 33	1	0 85	1 00	31 7	85	68	1 13	36 00	0 0	36 00	0 98	0706	2 2	0 89	1 10	1 377	1 34	1 90
7	4 42	14 50	0.30	4 27	60	sandstone		1	20	80	1 33	1	0 85	1 00	68 0	94	74	1 08	73 68	4 5	78 16	0 97	0716	2 2	0 89	1 09	2000	1 93	2 00

Liquefaction Potential

Liquefaction Induced Settlement and Lateral Spreading

Depth (m)	Depth (ft)	Limiting Shear Strain γ_{lim}	Parameter $c_1 F_s$	Maximum Shear Strain γ_{max}	ΔH_i (m)	ΔLDI_i (in)	ΔLDI_i (in)	Vertical Reconsol Strain ε_v	ΔS_i(m)	ΔS_i(in)
0 46	1 50	0 411	0 883	0 000	0 46	0 000	0 0	0 000	0 000	0 00
1 22	4 00	0 197	0 616	0 000	0 76	0 000	0 0	0 000	0 000	0 00
2 13	7 00	0 054	-0 012	0 000	0 91	0 000	0 0	0 000	0 000	0 00
2 44	8 00	0 007	-0 869	0 000	0 30	0 000	0 0	0 000	0 000	0 00
3 51	11 50	0 005	-0 994	0 000	1 07	0 000	0 0	0 000	0 000	0 00
4 11	13 50	0 019	0 508	0 000	0 61	0 000	0 0	0 000	0 000	0 00
4 42	14 50	0 000	4 028	0 000	0 30	0 000	0 0	0 000	0 000	0 00
					LDI=	0 00 (in)	0 0 (in)	S=	0 000 (in)	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)
0 056	0 06	252 6	0.126	33459	1 00	1 939	2 165	0 8
0.148	0 17	482 8	0 131	18575	1 00	1 129	1 229	0 7
0 257	0 30	746 3	0.136	13277	0 43	0 279	0 303	0 2
0 329	0 34	8960	0 137	12255	0 00	0000	0000	0 0
0407	0 49	10884	0 143	98572	0 00	0000	0 000	0 0
0 504	0 57	11158	0 146	8953	0 00	0 000	0 000	0 0
0 557	0 61	14973	0 148	85773	0 00	0 000	0 000	0 0
							S=	1 74 (in)

(1) Flag "nlp" – based on laboratory testing of fine content, plasticity index, liquid limits and potential intact moisture content
'nlp' - no liquefaction potential

Project	De Alba Residence
Project #	1336401
Date	5/24/2022
Boring	B-2

Input Parameters

Peak Ground Accel (g) =	0.896			
Earthquake Magnitude, M =	7.2			
Water Table Depth (m) =	2.4		8.00	(ft)
Average γ Above Water Table (kN/m^3) =	16.0		102.0	(lb/ft^3)
Average γ Below Water Table (kN/m^2) =	19.6		125.0	(lb/ft^3)
Borehole Diameter (mm) =	101.60		4	(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)	1.3		4.2	(ft)
Boring Distance from Exposed Face (m)	18		60	(ft)

K_σ =	0.5
N_{ch} =	18.1

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_H	$(N_1)_{60}$	ΔN for Fines Content	$(N_1)_{60cs}$	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	0.91	3.00	0.91	0.46	3	SM		0	20	80	1.33	1	0.75	1.00	3.0	15	15	1.70	5.10	4.5	9.58	1.00	0.523	1.2	0.91	1.10	0.115	NA	NA
2	2.13	7.00	1.22	1.52	28	SM		0	20	80	1.33	1	0.8	1.00	29.9	34	34	1.34	40.07	4.5	44.55	0.99	0.578	2.2	0.89	1.10	2.000	NA	NA
3	2.44	8.00	0.30	2.29	24	SP-SM		1	5	80	1.33	1	0.8	1.00	25.6	47	47	1.30	33.25	0.0	33.25	0.99	0.577	2.2	0.89	1.10	0.792	0.77	1.34
4	3.51	11.50	1.07	2.97	24	SP-SM		1	5	80	1.33	1	0.85	1.00	27.2	60	49	1.27	34.51	0.0	34.51	0.98	0.693	2.2	0.89	1.10	1.004	0.98	1.41
5	4.11	13.50	0.61	3.81	21	SP-SM		1	5	80	1.33	1	0.85	1.00	23.8	74	58	1.23	29.21	0.0	29.21	0.98	0.731	2.0	0.91	1.10	0.440	0.44	0.60
6	4.27	14.00	0.15	4.19	100	sandstone		1	20	80	1.33	1	0.85	1.00	113.3	81	63	1.13	128.41	4.5	132.88	0.98	0.731	2.2	0.89	1.10	2.000	1.95	2.00

Liquefaction Potential

Liquefaction Induced Settlement and Lateral Spreading

Depth (m)	Depth (ft)	Limiting Shear Strain γ_{lim}	Parameter F_α	Maximum Shear Strain$_{max}$	ΔH_i(m)	ΔLDI_i (m)	ΔLDI_i (in)	Vertical Reconsol Strain ε_v	ΔS_i(m)	ΔS_i(in)
0.91	3.00	0.496	0.932	0.000	0.91	0.000	0.0	0.000	0.000	0.00
2.13	7.00	0.003	-1.154	0.000	1.22	0.000	0.0	0.000	0.000	0.00
2.44	8.00	0.029	0.312	0.000	0.30	0.000	0.0	0.000	0.000	0.00
3.51	11.50	0.024	-0.401	0.000	1.07	0.000	0.0	0.000	0.000	0.00
4.11	13.50	0.052	-0.036	0.052	0.61	0.032	1.2	0.011	0.006	0.25
4.27	14.00	0.000	9.239	0.000	0.15	0.000	0.0	0.000	0.000	0.00
					LDI =	0.03 (m)	1.2 (in)	S=	0.006 (m)	0.25 (in)

Dry Sand Settlement

τ_{avg} (tsf)	Average Stress (p) (tsf)	Max Shear Modulus (Gmax) (tsf)	n	K	γ (%)	ε_{15}(%)	ε_{Nc} (%)	Dry Sand Settlement (in)
0.019	0.10	3032	0.128	25172	1.00	2.419	2.634	1.9
0.206	0.24	7731	0.133	15144	0.21	0.079	0.086	0.1
0.283	0.27	7496	0.135	13978	0.00	0.000	0.000	0.0
0.358	0.39	9100	0.139	11243	0.00	0.000	0.000	0.0
0.442	0.46	9327	0.142	10212	0.00	0.000	0.000	0.0
0.426	0.43	15737	0.143	99912	0.00	0.000	0.000	0.0
							S=	1.98 (in)

(1) Flag "nlp" – based on laboratory testing of fines content, plasticity index, liquid limits and potential in-soot wet stone content
"nlp" - no liquefaction potential

Project	De Alba Residence
Project #	13364.01
Date	5/24/2022
Boring	B-3

Input Parameters:

Peak Ground Accel (g) =	0.896			
Earthquake Magnitude, M =	7.8			
Water Table Depth (m) =	1.2		4.00	(ft)
Average γ Above Water Table (kN/m³)=	17.8		113.0	(lb/ft³)
Average γ Below Water Table (kN/m³) =	19.6		125.0	(lb/ft³)
Borehole Diameter (mm) =	101.60		4	(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)	13		42	(ft)
Boring Distance from Exposed Face (m)	18		60	(ft)

K_sat	0.5
Hc=	18.1

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	$(N_1)_{60}$	ΔNfor Fines Content	$(N_1)_{60cs}$	Stress Reduct. Coeff. r_d	CSR	MSF_{max}	MSFfor Sand	K_σ for Sand	CRRfor M=7.5 & σ_{vc}=1atm	CRR	Factor of Safety
1	0.46	1.50	0.46	0.23	10	GM		0	20	80	1.33	1	0.75	1.00	100	8	8	1.70	17.00	4.5	21.48	1.00	0.584	1.6	0.95	1.10	0.225	NA	NA
2	0.61	2.00	0.15	0.53	5	SM		0	20	80	1.33	1	0.75	1.00	50	11	11	1.70	8.50	4.5	12.98	1.00	0.584	1.3	0.98	1.10	0.140	NA	NA
3	1.07	3.50	0.46	0.84	5	SM		0	20	80	1.33	1	0.75	1.00	50	19	19	1.70	8.50	4.5	12.98	1.00	0.582	1.3	0.98	1.10	0.140	NA	NA
4	1.30	4.25	0.23	1.18	32	SM		1	20	80	1.33	1	0.75	1.00	320	25	24	1.45	46.46	4.5	50.93	1.00	0.599	2.2	0.89	1.10	2.000	1.94721	2.00
5	1.98	6.50	0.69	1.64	80	sandstone		1	20	80	1.33	1	0.8	1.00	853	34	27	1.42	121.31	4.5	125.79	0.99	0.742	2.2	0.89	1.10	2.000	1.94721	2.00

Liquefaction Potential

Liquefaction Induced Settlement and Lateral Spreading

Depth (m)	Depth (ft)	Limiting Shear Strain γ_{lim}	Parameter F_α	Maximum Shear Swain γ_{max}	ΔH_i(m)	ΔLDI_i (m)	ΔLDI_i (in)	Vertical Reconal Strain ε_v	ΔS_i (m)	ΔS_i(in)
0.46	1.50	0.135	0.438	0.000	0.46	0.000	0.0	0.000	0.000	0.00
0.61	2.00	0.342	0.831	0.000	0.15	0.000	0.0	0.000	0.000	0.00
1.07	3.50	0.342	0.831	0.000	0.46	0.000	0.0	0.000	0.000	0.00
1.30	4.25	0.000	-1.665	0.000	0.23	0.000	0.0	0.000	0.000	0.00
1.98	6.50	0.000	-8.581	0.000	0.69	0.000	0.0	0.000	0.000	0.00
					LDI=	0.00 (m)	0.0 (m)	S=	0.000 (m)	0.00 (in)

Dry Sand Settlement

τ_{avg} (tsf)	Average Stress (g) (tsf)	Max Shear Modulus (Gmax) (tsf)	a	b	γ (%)	ε_{15} (%)	ε_{vc} (%)	Dry Sand Settlement (in)
0.050	0.06	2953	0.126	35888	0.79	0.725	0.789	0.3
0.066	0.08	2883	0.127	30199	1.00	1.680	1.829	0.2
0.115	0.13	3814	0.129	21586	1.00	1.680	1.829	0.7
0.153	0.16	6630	0.130	19212	0.00	0.000	0.000	0.0
0.206	0.24	11082	0.134	14889	0.00	0.000	0.000	0.0
							S=	1.15 (in)

(1) Flag "nlp" – based on laboratory testing of fine content, plasticity index, liquid limits and potential intact moisture content
"nlp" - no liquefacten potential

Project	De Alba Residence
Project #	13364.01
Date	5/24/2022
Boring	B-3

Input Parameters:

Peak Ground Accel (g) =	0.896						
Earthquake Magnitude, M =	7.8						
Water Table Depth (m) =	1.2		4.00	(ft)			
Average γ Above Water Table (kN/m^3)=		17.8	113.0	(lb/ft^3)	K_{sat} =	0.5	
Average γ Below Water Table (kN/m^3) =		19.6	125.0	(lb/ft^3)	M_w =	18.1	
Borehole Diameter (mm) =	101.60		4	(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)		13	42	(ft)			
Boring Distance from Exposed Face (m)		18	60	(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	$(N_1)_{60}$	ΔNfor Fines Content	$(N_1)_{60cs}$	Stress Reduct. Coeff. r_d	CSR	MSF_{max}	MSFfor Sand	K_σ for Sand	CRRfor M=7.5 & σ_{vc}=1atm	CRR	Factor of Safety
1	0.46	1.50	0.46	0.23	10	GM		0	20	80	1.33	1	0.75	1.00	100	8	8	1.70	17.00	4.5	21.48	1.00	0.584	1.6	0.95	1.10	0.225	NA	NA
2	0.61	2.00	0.15	0.53	5	SM		0	20	80	1.33	1	0.75	1.00	50	11	11	1.70	8.50	4.5	12.98	1.00	0.584	1.3	0.98	1.10	0.140	NA	NA
3	1.07	3.50	0.46	0.84	5	SM		0	20	80	1.33	1	0.75	1.00	50	19	19	1.70	8.50	4.5	12.98	1.00	0.582	1.3	0.98	1.10	0.140	NA	NA
4	1.30	4.25	0.23	1.18	32	SM		1	20	80	1.33	1	0.75	1.00	320	25	24	1.45	46.46	4.5	50.93	1.00	0.599	2.2	0.89	1.10	2.000	1.94721	2.00
5	1.98	6.50	0.69	1.64	80	sandstone		1	20	80	1.33	1	0.8	1.00	853	34	27	1.42	121.31	4.5	125.79	0.99	0.742	2.2	0.89	1.10	2.000	1.94721	2.00

Liquefaction Potential

Liquefaction Induced Settlement and Lateral Spreading

Depth (m)	Depth (ft)	Limiting Shear Strain γ_{lim}	Parameter F_α	Maximum Shear Swain γ_{max}	ΔH_i(m)	ΔLDI_i (in)	ΔLDI_i (in)	Vertical Reconsol Strain ε_v	ΔS_i (m)	ΔS_i(in)
0.46	1.50	0.135	0.438	0.000	0.46	0.000	0.0	0.000	0.000	0.00
0.61	2.00	0.342	0.831	0.000	0.15	0.000	0.0	0.000	0.000	0.00
1.07	3.50	0.342	0.831	0.000	0.46	0.000	0.0	0.000	0.000	0.00
1.30	4.25	0.000	-1.665	0.000	0.23	0.000	0.0	0.000	0.000	0.00
1.98	6.50	0.000	-8.581	0.000	0.69	0.000	0.0	0.000	0.000	0.00
					LDI=	0.00 (m)	0.0 (m)	S=	0.000 (m)	0.00 (in)

Dry Sand Settlement

τ_{avg} (tsf)	Average Stress (g) (tsf)	Max Shear Modulus (Gmax) (tsf)	a	b	γ (%)	c_{15} (%)	c_{Nc} (%)	Dry Sand Settlement (in)
0.050	0.06	2953	0.126	35888	0.79	0.725	0.789	0.3
0.066	0.08	2883	0.127	30199	1.00	1.680	1.829	0.2
0.115	0.13	3814	0.129	21586	1.00	1.680	1.829	0.7
0.153	0.16	6630	0.130	19212	0.00	0.000	0.000	0.0
0.206	0.24	11082	0.134	14889	0.00	0.000	0.000	0.0
							S=	1.15 (in)

(1) Flag "nlp" – based on laboratory testing of fine content, plasticity index, liquid limits and potential intact moisture content
"nlp" - no liquefacten potential

DISTRIBUTION

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NATURAL RESOURCES STUDY

FOR

33389 PACIFIC WAY
MENDOCINO, CA
MENDOCINO COUNTY
APN 017-320-51

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May 7, 2022

Site Map, Mitigation Measures, and Reduced Buffer Analysis Updated February 20, 2023

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Appendix E. Wetland Data Sheets
Appendix F. Reduced Buffer Analysis

1.0 Summary and Background

A new residence is proposed on a bluff top property about two miles south of Fort Bragg in Mendocino County. The property is located at 33389 Pacific Way, and is currently developed with an existing residence and sheds, and a gravel driveway.

During 2021 and 2022, Spade Natural Resources Consulting visited the site numerous times for a full floristic botanical survey, wildlife scoping survey, and wetland delineation, to determine the extent of the sensitive nature of the site in order to inform the proposed development. This study documents the findings of the 2021 and 2022 surveys, in order to support the issuance of permits needed for the proposed improvements to the site, which include a residence and attached garage, an addition to the driveway to serve the new development, and a new septic system.

The project area is located in the Coastal Zone, west of Highway 1, on the bluff. The project area is a relatively flat coastal terrace vegetated by a mix of vegetation types including Bishop pine forest, beach pine forest, eucalyptus forest, broom patch, pacific reedgrass meadow, purple velvetgrass – sweet vernal grass meadow, twinberry scrub, salmonberry-wax myrtle scrub, and salal-berry brambles.

Wetlands have been identified on the site including a drainage to the bluff on the western side of the property, and the twinberry and salmonberry – wax myrtle scrub areas.

The property may provide habitat for special status Western Bumblebee, Obscure Bumblebee, Western pond turtle, Northern red-legged frog, Sonoma tree vole, special status bats, and special status and protected nesting birds.

Identified protected natural resources are outlined in Table 1.

Avoidance and restoration measures are recommended to protect special status natural resources. A reduced buffer analysis for development in the buffer and resource area, is included as an attachment to this study, in compliance with Section 20.496.020 of the Mendocino County Coastal Zoning Code.

The biological scoping survey has been conducted to facilitate the issuance of a permit for development within the Coastal Zone in Mendocino County. The determinations outlined in this study reflect the professional opinion of Spade Natural Resources Consulting. Agencies may need to be consulted to determine if they are in agreement.

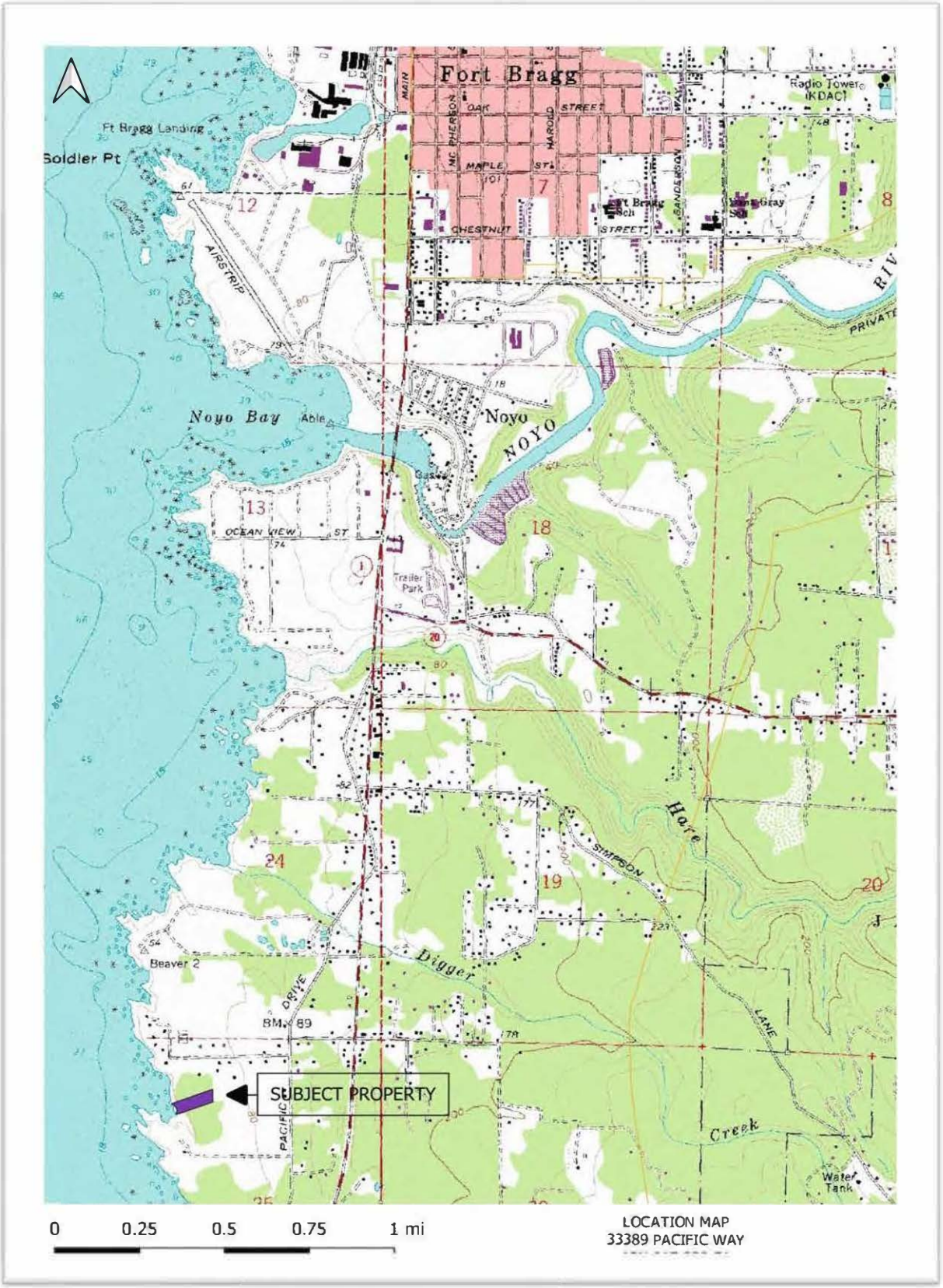

Figure 1. Project location.

Table 1. Sensitive resource areas observed at the project site.

Special Status Resource	Resource Type	Potentially Present Special Status Wildlife	Ranking / Qualifier	Extent
Bishop Pine Forest	Vegetation Alliance	Sonoma tree vole, nesting birds, special status bats, migrating Northern red-legged frogs, Western bumblebee	CDFW CRPR G3 S3.2	~74,800 sf
Beach Pine Forest	Vegetation Alliance	Sonoma tree vole, nesting birds, special status bats, migrating Northern red-legged frogs, Western bumblebee	CDFW CRPR G5 S3	~5,500
Twinberry Scrub	Vegetation Alliance/Wetland	Nesting birds, migrating Northern red-legged frogs	Coastal Act Wetland	~5600 sf
Pacific Reedgrass Meadow	Vegetation Alliance	Nesting birds, Northern red-legged frog, western pond turtle	CDFW CRPR G4 S2	~23,340 sf
Salmonberry - Wax Myrtle Scrub	Vegetation Alliance/Wetland	Nesting birds, migrating Northern red-legged frogs	CDFW CRPR G4 S3	~175 sf
Seaside Wooly Sunflower - Seaside Daisy - Buckwheat Patch	Vegetation Alliance	Nesting birds, Obscure Bumblebee, Western Bumblebee	CDFW CRPR G3 S3	~8,300 sf
Stream	Stream	Northern red-legged frogs, western pond turtles	US Army Corps Section 404 Stream	~100 lf

2.0 Project Site Description

2.1 General Site Description

The project location is roughly two miles south of Fort Bragg, at the ocean bluff west of Pacific Way. The Belinda Point public access trail is present along the south side of the property. The parcel is 3.2 acres in size and is surrounded by rural residential properties ranging from around two to ten acres in size, that have residential developments interspersed among a mosaic of terrace grasslands, forests and wetlands. The site is relatively flat and a small, well-built residence with a deck and two sheds are present. There is an existing well and existing gravel driveway.

2.2 Vegetation, Hydrology, and Soils

The property contains a mix of high-quality native habitat and areas of non-native invasives. Both native and non-native dominated grasslands are present as well as native and non-native dominated woodlands.

There is a small drainage located near the bluff in the Pacific reedgrass meadow on the west side of the property. A coastal wetland thicket is present to the east of the existing residence, vegetated predominantly by twinberry (*Lonicera involucrata*). The site is relatively flat but tends to slope slightly in a southwesterly direction.

Soils are mapped as Tregoning - Cleone Complex, 0 to 5 percent slopes, according to the Natural Resources Conservation Service Web Soil Mapper (see Custom Soil Resource Report, included as Appendix B). Tregoning and Tropaquepts soils found in the Tregoning – Cleone Complex are hydric soils according to the Natural Resources Conservation Service hydric soils list, and constitute about 63% of the acreage of this complex.

3.0 Methods

3.1 Wildlife Scoping Survey

Wildlife scoping surveys were based on the scoping lists in Tables 1-3 in Appendix A, and were conducted within the building envelope. The investigator, Teresa R. Spade, has a Bachelor's Degree in Natural Resources Planning and Interpretation.

Surveys were conducted by walking the project area, and documenting all observed habitat for special status wildlife species.

3.2 Botanical Survey

Survey methodology was informed by guidance provided in the Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018). Per the CDFW 2018 protocol, special status plants, for the purposes of this document, include all plants that meet one or more of the following criteria:

- Listed or proposed for listing as threatened or endangered under the Endangered Species Act (ESA) or candidates for possible future listing as threatened or endangered under the ESA (50 C.F.R., § 17.12).
- Listed or candidates for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.)4. In CESA, "endangered species" means a native species or subspecies of plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease (Fish & G. Code, § 2062). "Threatened species" means a native species or subspecies of plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by CESA (Fish & G. Code, § 2067). "Candidate species" means a native species or subspecies of plant that the California Fish and Game Commission has formally noticed as being under review

by CDFW for addition to either the list of endangered species or the list of threatened species, or a species for which the California Fish and Game Commission has published a notice of proposed regulation to add the species to either list (Fish & G. Code, § 2068).

- Listed as rare under the California Native Plant Protection Act (Fish & G. Code, § 1900 et seq.). A plant is rare when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens (Fish & G. Code, § 1901).
- Meet the definition of rare or endangered under CEQA Guidelines section 15380, subdivisions (b) and (d), including:
  - Plants considered by CDFW to be "rare, threatened or endangered in California." This includes plants tracked by the California Natural Diversity Database (CNDDB) and the California Native Plant Society (CNPS) as California Rare Plant Rank (CRPR) 1 or 2;
  - Plants that may warrant consideration on the basis of declining trends, recent taxonomic information, or other factors. This may include plants tracked by the CNDDB and CNPS as CRPR 3 or 4.
- Considered locally significant plants, that is, plants that are not rare from a statewide perspective but are rare or uncommon in a local context such as within a county or region (CEQA Guidelines, § 15125, subd. (c)), or as designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G). Examples include plants that are at the outer limits of their known geographic range or plants occurring on an atypical soil type.

To the extent possible, natural communities or vegetation alliances are described and mapped based on the online Manual of California Vegetation (Sawyer and Keeler Wolf., 2009). Sensitive natural communities are determined by the most current version of the California Department of Fish and Wildlife's List of California Terrestrial Natural Communities found online at the VegCamp website.

Surveys were based on the scoping lists in Tables 1-3 in Appendix A, and were conducted throughout the property. The investigator was Teresa R. Spade, AICP. Teresa R. Spade has a BS degree in Natural Resources Planning and Interpretation. She has 15 years of experience working in land use planning and natural resources, and is a certified planner per the American Institute of Certified Planners. She has contributed to hundreds of coastal development projects in Mendocino County. She has been trained in Army Corps wetland delineation by Richard Chinn Environmental Training in Sacramento, CA. She is on the Fish and Wildlife Service approved list for Point Arena mountain beaver surveys and has surveyed for the Federally Endangered Behren's silverspot butterfly.

3.2.1 Botanical Survey Literature Review

Existing records of special-status plant and animal species occurrences were reviewed to determine which special-status species have the potential to occur in the project vicinity. The following sources were consulted:

- California Native Plant Society (CNPS) Electronic Inventory occurrence records, nine-quad search centering in the Fort Bragg USGS 7.5 minute quadrangle.
- California Natural Diversity Data Base (CNDDB) occurrence records for the Fort Bragg 7.5 minute quadrangle.
- Aerial imagery and topographic maps analysis, to gather baseline info regarding habitat in the project area.

3.2.2 Botanical Survey Field Methods

The surveys were conducted on April 17, June 9, and July 14, 2021, using as guidance thefloristic survey protocol recommended in CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (March 20, 2018). Field survey schedules to identify special status plants were determined based on the known blooming periods of these species, the geographic location, the natural communities present, and the weather patterns of the year in which the surveys were conducted. Plant species are identified to the taxonomic level necessary to determine rarity and listing status. Nearby accessible known occurrences of sensitive plant species are expected to be observed to determine that the plants are identifiable at the time of the survey.

Botanical surveys are conducted by field observers walking throughout the project area, and areas within 100 feet, in a systematic method sufficient to ensure thorough coverage. All plant species detected within the project area are recorded. The location of any found special status plant or plant community was recorded using a Global Positioning System (GPS) where available, or by use of a detailed map (1:24,000 or larger) showing the locations and boundaries of each special status plant community and population in relation to the project area, with occurrences and boundaries marked as accurately as possible. In areas under the forest canopy, GPS is less accurate. A professional survey by a land surveyor is recommended if a greater degree of accuracy is desired, where special status plants or habitats are found within 100 feet of the project area. Where the number of individual species is small, that number is counted. Where large populations are observed, the number of individuals is estimated. A meter by meter population estimating square is used to estimate larger populations. To the extent possible, information is provided on the percentage of each special status plant in each life stage observed such as seeding, vegetative, flowering,

and fruiting. The density of populations is provided, describing whether special status plants are present in a relatively low, medium or high density. Photographs are also taken of special status plants and vegetation alliances, showing identifying features.

For known occurrences, any adverse conditions, such as disease, drought, predation, fire, herbivory or other disturbances that may preclude the presence or identification of potentially present special status plants or vegetation alliances are considered when making a negative finding. If adverse conditions exist during survey efforts, the known occurrence is considered still potentially present until surveys are repeated during appropriate times of the year for proper identification, when normal conditions are present and known reference sites are consulted to verify that blooms or other identifying features should be visible.

3.3 Wetland Delineation

Surveys were conducted to identify the presence, extent, and quality of waters, including wetlands that may be considered jurisdictional by the U.S. Army Corps of Engineers (Corps) under Section 404 of the Clean Water Act, and areas considered by the California Coastal Commission as Coastal Act wetlands.

This report summarizes the results of the wetland investigation and provides technical documentation for all delineated wetlands. Included in this report are the wetland delineation data necessary for a jurisdictional determination by the Corps, Regional Water Quality Control Board, (RWQCB, or Water Board), California Department of Fish and Wildlife (CDFW), and the California Coastal Commission (CCC). The wetland methodology used in this report is consistent with methods described in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (USACE, 2008) and the Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987). This wetland delineation is subject to review and approval by the RWQCB, USACE, CDFW, CCC, and Mendocino County Department of Planning and Building. The maps included in this report were generated from field measurements, aerial photography, Global Positioning System (GPS) data, and existing geospatial datasets.

3.3.1 Wetland Delineation Literature Review

Imagery - Aerial photographs or satellite imagery can be particularly useful for the identification of saturated soils where plant cover is sparse and ponding or where drainage patterns become evident. Particularly, a comparison of the same site over time and at different times during the year can show areas of inundation or saturation or patterns of vegetation reflecting hydric conditions. Numerous sources of

imagery are available such as National Agriculture Imagery Program (NAIP), Land Satellite (LANDSAT), Digital Orthophoto Quadrangles (DOQ), and Google Earth. These types of images are also useful in the identification of riparian vegetation and prominent wetland features that are not accessible or that occur adjacent to but offsite the project area.

Google Satellite imagery was used in QGIS for aerial photo mapping.

Saturation visible on aerial imagery is considered by the Army Corps as a secondary indicator for the presence of hydrology in a study area. These signatures of wetland hydrology can be examined in the office and then confirmed during a field site visit. Prior to the wetland delineation site visit, aerial imagery from GoogleEarth was used to determine any visible saturation in the project area. As viewed from GoogleEarth, the project area appears greener than areas of wheat colored grassland visible on properties in the vicinity.

National Wetland Inventory Maps - The USFWS produces wetland maps and geospatial wetland data for the United States and makes these data available to the public (USFWS 2018). Wetlands are primarily mapped by identifying them from aerial imagery and then classified using the Cowardin system (FGDC 2009). These maps are a supplemental tool for onsite wetland investigations and should be used with caution as all wetlands have not been mapped and the maps can be limited by scale.

A USFWS NWI map was created by using the web application (Figure 2) to show its relation to the Study Area. As shown in the NWI map, no wetlands were presumed to be present on the property. These maps have limited accuracy, and field surveys are necessary to verify the location and extent of wetlands.

Soil Survey – The Natural Resources Conservation Service (NRCS) maintains published soil surveys for counties across the United States that provide information on the origin of soils, their composition and texture, and their use for agriculture. Additionally, NRCS maintains the "Hydric Soils List of California," which lists soils from county soil surveys that are sufficiently wet in the upper part to develop anaerobic conditions during the growing season.

The online database for the national list of hydric soils was reviewed prior to the wetland delineation field visits, and a soil map and report were produced using NRCS's online Web Soil Survey (NRCS 2021). These reports are useful in determining the composition of the soil map units, which are rarely comprised of entirely the same soil.

A custom soil report for the project area was created using NRCS's online Web Soil Survey (Appendix D).

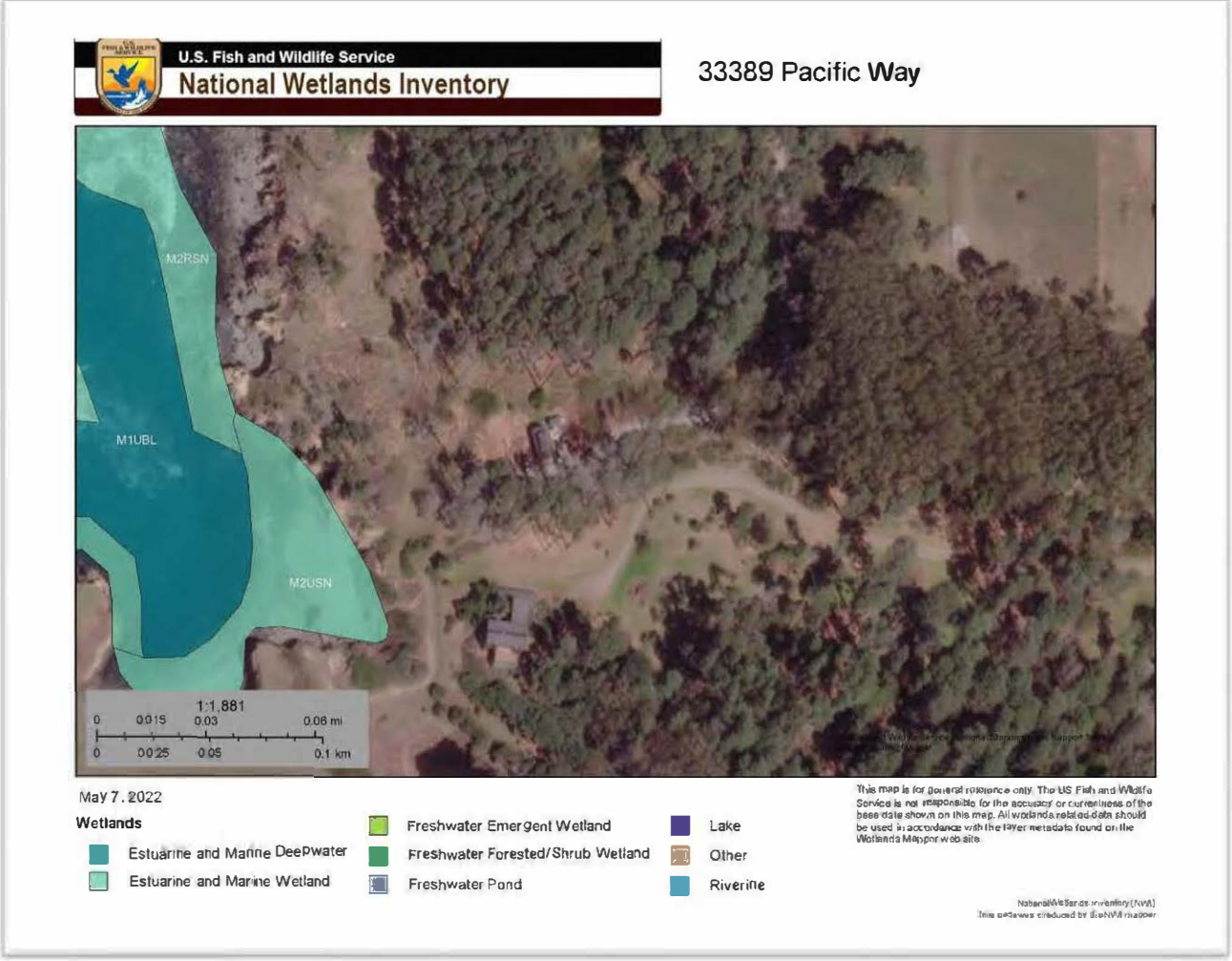

Figure 2. US Fish and Wildlife National Wetlands Inventory map.

3.3.2 Wetland Delineation Field Methods

Section Potential 404 Jurisdictional Wetlands - This delineation study has been conducted in accordance with the U.S. Army Corps of Engineers Wetlands Delineation Manual (Corps Manual) (Environmental Laboratory 1987) and the Western Mountains, Valleys, and Coast Region (Version 2.0) Regional Supplement (USACE 2010). This study evaluated the presence or absence of indicators of three wetlands parameters described in the Corps Manual. The three parameters used to determine the presence of wetlands are (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. According to the Corps Manual (1987): "…[E]vidence of a minimum of one positive wetland indicator from each

parameter (hydrology, soil, and vegetation) must be found in order to make a positive wetland delineation."

Sample points in the study area were established to collect data on vegetation, hydrology, and soils and reported on Western Mountains, Valleys, and Coast Region Corps data forms included in Appendix F. A description of these three indicators is summarized below. The location of these sample points and the extent of the wetland boundary were recorded using a Wide Area Augmentation System (WAAS) corrected GPS receiver and the area of the delineated wetland was calculated using GIS software.

Hydrophytic Vegetation - The indicator status assigned to a species designates the probability of that species occurring in a wetland. A species with an indicator of OBL, FACW, or FAC is considered to be typically adapted for life in a wetland (hydrophytic vegetation). A species indicator of, FACU and UPL determines an upland species. The wetland occurrence probability and abbreviations utilized in the lists are presented below.

Table 2. Wetland Indicator Status Groups

Wetland Indicator Status	Definition
Obligate Wetland (OBL)	Almost always occur in wetlands
Facultative Wetland (FACW)	Usually occur in wetlands, but may occur in non-wetlands
Facultative (FAC)	Occur in wetlands or non-wetlands
Facultative Upland (FACU)	Usually occur in non-wetlands, but may occur in wetlands
Obligate Upland (UPL)	Almost never occur in wetlands

The vegetation at each sampling point was recorded and evaluated for prevalence of hydrophytes using the most recent list of hydrophytic plants (Lichvar 2016).

Hydric Soils - The Natural Resource Conservation Service defines a hydric soil as: "A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part." (Federal Register July 13, 1994, US Department of Agriculture, Natural Resource Conservation Service.) Soils formed over long periods of time under wetland (anaerobic) conditions sometimes possess characteristics that indicate that they meet the definition of hydric soils. In each pit distinct soil layer depths were noted and their matrix and mottle colors (if present) were compared to the Munsell soil color chart (GretagMacbeth 2000) for color appearance (hue), intensity (value), and shade (chroma). Redoximorphic features and soil texture were noted.

Wetland Hydrology - Wetland hydrology is a term which encompasses hydrologic characteristics of areas that are periodically inundated or saturated within 12 inches of the surface at some time during the growing season. Recorded data can be used when available to determine wetland hydrology. Recorded data showing inundation or saturation within 12 inches of the surface for a minimum of five percent of the growing season (approximately 14 days) is considered evidence of wetland hydrology. When studies are conducted at a time of year when surface water, ground water, or saturated soils cannot be observed, evidence of wetland hydrology is based on observation of the hydrologic indicators described in the 1987 Corps Manual. Evidence of wetland hydrology can include direct evidence (primary indicators), such as visible inundation or saturation, surface sediment deposits, and drift lines, or indirect indicators (secondary indicators), such as oxidized root channels and algal mats. If indirect or secondary indicators are used, at least two secondary indicators must be present to conclude that an area has wetland hydrology. The wet areas in the study area were examined for these hydrologic indicators. The presence of any primary or secondary wetland hydrologic indicators was noted at each sampling point.

Potential Section 404 Jurisdictional "Other Waters" - Non-wetland non-tidal waters are those bodies of water that convey water such as perennial, intermittent and ephemeral streams, or bodies of water such as lakes and ponds that are deep enough to exclude the growth of hydrophytic vegetation. Typically, these are hydrological features with a defined stream channel, bed, and bank.

All of these types of features that were present, were documented within the project area and mapped in the field with a GPS or also with the aid of georeferenced aerial photography in GIS.

Potential Section 401 Jurisdictional Waters - Some water bodies, such as isolated wetlands that the Corps would not regulate, fall under the jurisdiction of the SWRCB if there is discharge involved. However, if the Corps determines that a water body is not subject to regulation under Section 404, then no 401 certification is required by the State *if* there is no discharge into waters of the State. Because "waters of the State" is a much more encompassing term than "waters of the United States," it can be used to regulate isolated wetlands and wetlands not otherwise under federal jurisdiction.

Wetlands and other waters were delineated using the same methods for determining presence of wetland indicators: hydrophytic vegetation, hydric soils, and hydrology.

Potential Section 1602 Jurisdictional Waters- Riparian vegetation often includes vegetation beyond that growing in the active channel or floodplain. The measurement of riparian vegetation can extend to a point

where vegetation provides shade for plants and wildlife as well as to a point where vegetation contributes large woody debris (LWD) or fine litter to the watercourse. This can be above the floodplain and even above the terrace on to the hillslope. Generally, CDFW's jurisdiction over lakes and streams is measured from channel to the top of the bank or edge of the riparian as determined by the upland side of the dripline, whichever is greater.

Potential California Coastal Act Jurisdictional Wetlands and Waters- All wetlands and waters that can be considered 404 and 401 jurisdictionally regulated, including one and two parameter wetlands and riparian vegetation and watercourses regulated under 1602 can be considered for regulation by the California Coastal Commission (CCC). Essentially, the CCC can regulate any and all wetlands and waters regulated or not regulated by ACOE, RWQCB, and CDFW. Therefore all methods for identifying federal and state waters and wetlands and riparian vegetation are used for identifying the same features regulated by the CCC.

4.0 Survey Results

4.1 Special Status Plants

Botanical site visits occurred on April 17, June 9, and July 14, 2021, when special status species with the potential for presence would have been in bloom or otherwise identifiable. Areas surveyed included areas within 100 feet of existing and proposed development.

No special status plant species were observed. The scoping lists are included as Appendix A, and the list of plant species found at the site is included as Appendix C.

As of May 2022, four plant species have been added to the nine-quad search scoping list. Those species are as follows:

American glehnia (*Glehnia littoralis* ssp. *leiocarpa*) (CRPR 4.2), bloom window May-August. This is a member of the Apiaceae family, which is found in the coastal strand. There is no coastal strand habitat in the project area, and only one member of the Apiaceae family was observed in the project area, which was determined to be Henderson's angelica (*Angelica hendersonii*). Site visits occurred during the bloom window of this watch list species. No follow up surveys are warranted.

Tracy's tarweed (*Hemizonia congesta* ssp *tracy*) (CRPR 4.3), bloom window May-October. No tarweed species were identified on the property. Surveys occurred during the bloom window for this watch list species. No follow up surveys are warranted.

Broad -lobed leptosiphon (*Leptosiphon latisectus*) (CRPR 4.3), bloom window April – June. No Polemoniaceae species were observed during survey efforts, and surveys occurred during the bloom window for this watch list species. No follow up surveys are warranted.

Round-headed beaked rush (*Rhynchospora globularis*) (CRPR 2.B1) bloom window July-August. One common rush species was observed (Juncus effusus) during survey efforts. Surveys occurred during the bloom window for this species. No follow up surveys are warranted.

4.2 Vegetation Alliances/Associations

Vegetation alliance/Associations observed in the project area are shown in Figure 7 and are described below.

4.2.1 Bishop Pine – Monterey Pine Forest and Woodland (ESHA)

***Pinus muricata* – *Pinus radiata* Forest and Woodland Alliance (G3 S3.2)**

Much of the property is comprised of Bishop Pine Forest. The dominant understory species vary throughout the property. Pacific reedgrass (*Calamagrostis nutkaensis*) dominates in some areas, with false Solomon's-seal (*Maianthemum dilatatum*) dominate in others. Patches of wax myrtle (*Morella californica*) are present in the understory, and areas with coffeeberry (*Frangula californica*), California blackberry (*Rubus ursinus*), bracken (*Pteridium aquilinum* var. *pubescens*), wax myrtle and sword fern (*Polystichum munitum*). This alliance also extends into the non-native grassland understory.

This vegetation alliance is in transition, as it is apparent that several trees have died within the past decade, and dead trees still standing are apparent in the vicinity as shown in Figure 3.



Figure 3. Standing dead Bishop pines in the vicinity.

Bishop and beach pines are naturally regenerating on the site, as shown in Figure 4. Areas of natural regeneration have been included as part of the mapped Bishop pine forest due to the presence of seedlings and saplings.



Figure 4. Naturally regenerating beach and Bishop pines at the site.



Figure 5. Dead pines decaying in place in the forest.



Figure 6. Bishop pine forest transition from false lily of the valley understory to Pacific reedgrass.

4.2.2 Eucalyptus - Tree of Heaven – Black Locust Groves

***Eucalyptus* spp – *Ailanthus altissima* – *Robinia pseudoacacia* Forest and Woodland Alliance (G3 S3.2)**

A eucalyptus grove is present on the southeast side of the property, in a swath between the driveway and property line. This grove is part of a larger area of eucalyptus that extends east of the property. Species observed in and near the understory include twinberry (*Lonicera involucrata*), California blackberry (*Rubus ursinus*), Douglas iris (*Iris douglasiana*), sword fern, wax myrtle, and coffeeberry.

4.2.3 Beach Pine Forest and Woodland (ESHA)

***Pinus contorta* ssp *contorta* Forest and Woodland Alliance (G5 S3)**

Small patches of beach pine are present near the bluff. These patches have California blackberry, bracken, Pacific reedgrass, and twining honeysuckle (*Lonicera hispidula*) in and near.

4.2.4 Twinberry Scrubland Alliance (ESHA)

Lonicera involucrata scrub (Not yet described or ranked)

Behind the existing residence is a patch of twinberry, roughly 1/5 of an acre in size. This patch is about 99% twinberry with some Labrador tea (*Rhododendron columbianum*), California blackberry and bracken also present. There is currently no Vegetation Alliance that corresponds, but it can be presumed to be Twinberry Scrubland if considered on its own. It may also broadly be in association with the Bishop Pine Forest. This twinberry patch was determined to be a Coastal Act wetland.

4.2.5 Broom Patch

***Cytisus scoparius* – *Genesta Monspessulana* – *Cotoneaster* spp. Shrubland Alliance (GNA CNA)**

Areas in the vicinity of the Belinda Point public access trail are dominated by Scotch broom. California blackberry is dominant in the understory, with rattlesnake grass (*Briza maxima*), oxe-eye daisy (*Leucanthemum vulgare*), and false Solomon's seal.

4.2.6 Salmonberry – Wax Myrtle Scrub (ESHA)

***Rubus spectabilis* – *Morella californica* Shrubland Alliance Forest and Woodland Alliance (G3 S3.2)**

A small patch of salmonberry (*Rubus spectabilis*) is present directly adjacent to the twinberry scrub. Other species observed here include coffeeberry and twinberry. These are facultative wetland species.

This area is presumed to be wetland based on vegetative dominance and its proximity to the twinberry scrub.

4.2.7 Pacific Reedgrass Meadow (ESHA)

***Calamagrostis nutkaensis* Herbaceous Alliance (G4 S2)**

Areas dominated by Pacific reedgrass are found to the northwest of the project area. These may once have had an overstory of Bishop Pine, and may therefore also be in association with the Bishop pine forest. This area is roughly a half-acre in size, and other plant species observed here include California blackberry and bracken. There is a short drainage that is located in the Pacific reedgrass meadow that runs to the bluff and into the ocean. Other species observed in the Pacific reedgrass meadow include California blackberry, Douglas iris (*Iris douglasiana*), seedling and young Bishop pines, and wax myrtle.

4.2.8 Common Velvet Grass – Sweet Vernal Grass Meadow

***Holcus lanatus – Anthoxanthum odoratum* Herbaceous Semi-Natural Alliance (GNA-SNA)**

The clearing to the west of the existing residence is dominated by non-native grasses and forbs, with native grasses and forbs also present. Sweet vernal grass (*Anthoxanthum odoratum*) is the most dominant grass, with Douglas iris (*Iris douglasiana*), bracken, and California blackberry also present.

4.2.9 Salal-Berry Brambles/Seaside Wooly Sunflower – Seaside Daisy – Buckwheat Patches

***Gaultheria shallon – Rubus* (*ursinus*) Shrubland Alliance (GNR S4) / Eriophyllum staechadifolium - Erigeron glaucus - Eriogonum latifolium Herbaceous Alliance (G3/S3) (ESHA)**

Along the bluff edge, bracken, salal (*Gautheria shallon*), dudleya (*Dudleya farinosa*) and iceplant (*Carpobrotus edulis* and *Carpobrotus chilensis*) dominate. Other species generally found on the bluff edge that were observed here include Douglas iris, yarrow (*Achillea millefolium*), coast buckwheat (*Eriogonum latifolium*), bluff lupine (*Lupinus littoralis*), California blackberry, California poppy (*Eschscholzia californica*), pale flax (*Linum bienne*), sea pink (*Armeria maritima* ssp. *californica*), seaside daisy (*Erigeron glaucus*), wooly sunflower (*Eriophyllum lanatum*), and coastal gumweed (*Grindelia stricta*). I have included two Vegetation Alliances here as it is a hybrid of both.

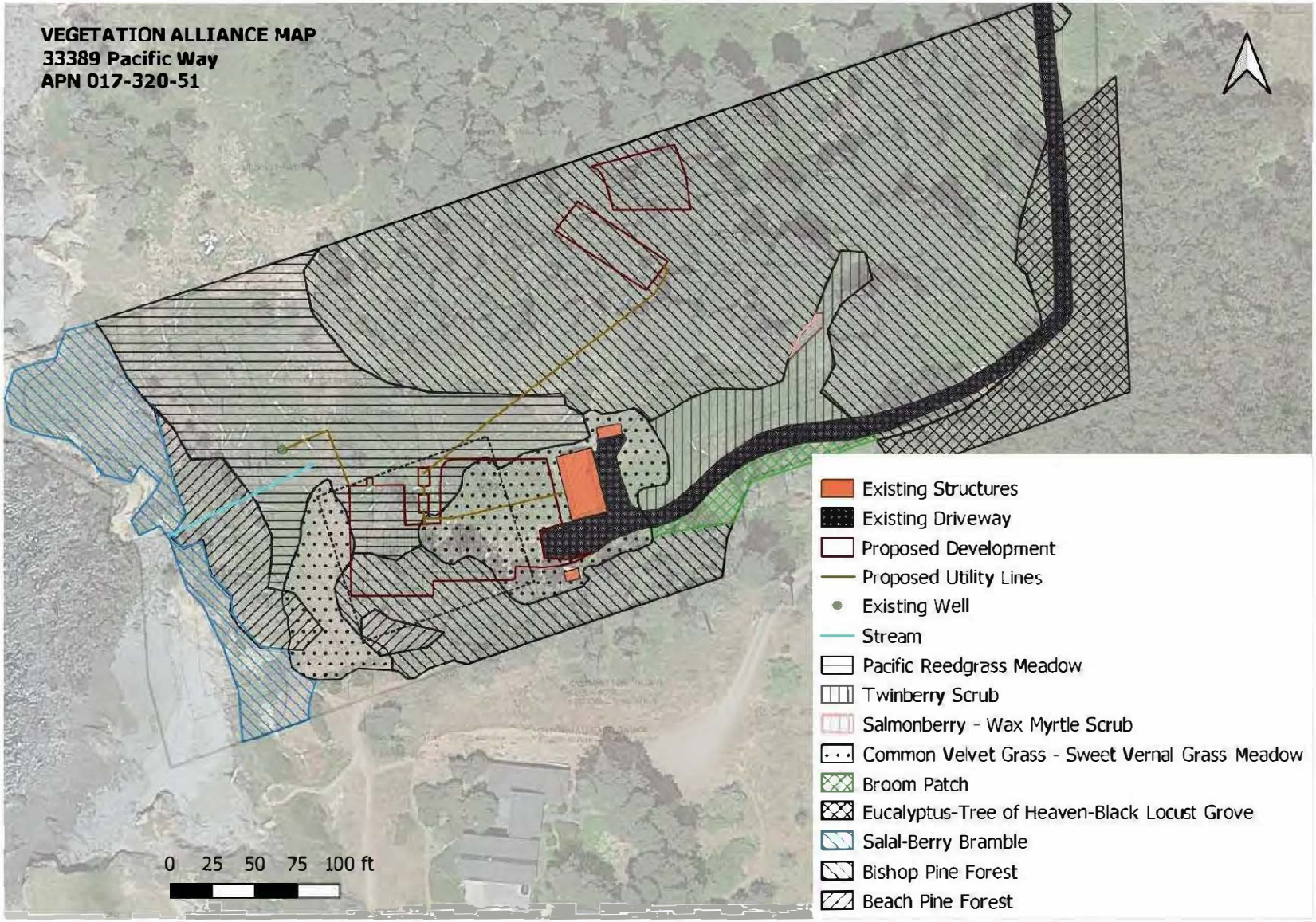

Figure 7. Vegetation Alliance Map.

4.3 Special Status Wildlife Habitat

4.3.1 Invertebrates

Ten Mile shoulderband snail



Figure 8 Ten Mile Shoulderband snail observed near the Ten Mile Bridge. (photo credit SpadeNRC).

Ten Mile shoulderband (*Noyo intersessa*) is listed as a G2 S2 species, indicating that the global status for the species is imperiled. This species is not currently listed under the state or federal endangered species act. Ten Mile shoulderband is a terrestrial snail found in dunes in Humboldt and Mendocino Counties.

Little information is known about the Ten Mile shoulderband snail or its habitat. The Morro shoulderband (*Helminthoglypta walkeriana*), is a related dune sand species found in San Luis Obispo County. According to the California Department of Parks and Recreation, the Morro shoulderband feeds on decaying vegetation and is usually found in moist areas under bushes or vegetation duff.

The project area does not contain dune habitat and is not near the Ten Mile Dunes, which is north of Fort Bragg. The project area has no potential as habitat for the Ten Mile shoulderband snail.

Globose dune beetle



Figure 9 Globose dune beetles (photo credit Spade NRC).

Globose dune beetle (*Coelus globosus*) is listed as a G1 S1S2 status species, an indication that this species is considered critically imperiled worldwide. This species is not currently protected by the federal or state endangered species acts. The historic species range is listed on NatureServe as along the coastline from central California into Mexico, ranging eastward between 30 and 300 meters. Globose dune beetle is a flightless beetle that lives in sand dunes. This is a nocturnal species that feeds on dead vegetation that accumulates on the sand.

There is no dune habitat in the project area. The project area does not contain habitat for this species.

Lotis blue butterfly



Figure 10. Male and female lotis blue butterflies (photo credit USFWS File Photograph)

The Lotis blue (*Lycaeides argyrognomon lotis* [aka *Lycaeides idas lotis*]) was first recognized as a Federally Endangered species in 1976. At that time, it was sighted at a single location in a sphagnum bog, approximately two miles north of the town of Mendocino. It was last observed there in 1983.

Little is known of the Lotis blue butterfly's habitat requirements and ecology, however other northern California *Lycaeides idas* typically occur in wet meadows, bogs, seeps, springs, and along the shorelines of streams. Coastal lotus (*Hosackia gracilis*) is a presumed larval food plant.

No coastal lotus or other Hosackia species were found on the property or in the project area. The site is fairly close to the last known location, which is about seven miles south. The site does not contain sphagnum bog. It is the professional opinion of Spade Natural Resources Consulting that there is a very low potential for presence of lotis blue butterfly, and additional studies are not warranted for this species in this location.

Behren's silverspot butterfly



Figure 11. Male and female Behren's silverspot butterflies (photo credit SpadeNRC).

The Behren's silverspot (*Speyeria zerene behrensii*) is Federally Endangered, listed December 5, 1997. The known historic range is along the coast from near the Town of Mendocino in Mendocino County to Salt Point State Park in Sonoma County. The larval food plant is currently thought to be early blue violet (*Viola adunca*), based on studies of the closely related coastal subspecies, Oregon silverspot butterfly (*Speyeria zerene hoppolyta*). It inhabits coastal terrace prairie habitat in areas with a strong ocean influence.

The project area is within the historical range of this species. The larval foodplant, early blue violet, was not found during the botanical site visits. The project area has a very low potential for presence of this species, and additional studies are not warranted in this location.

Obscure bumblebee

Obscure bumblebee (*Bombus caliginosus*) is in decline along the west coast of the United States, which is its native range. This species is very similar to the common yellow-faced bumblebee (*Bombus vosnesenskii*), differentiated by the structure of the male genitalia. The obscure bumblebee tends to have longer hairs, however, and yellow hairs are found on the underside of the abdomen.

This species is found in open, grassy, coastal prairies and coast range meadows. The Mendocino Coast is within the historic range for obscure bumblebee. The project area may be considered an appropriate habitat area for Obscure bumblebee.

Western bumble bee

The project area is in the former historical range of this Western bumblebee (*Bombus occidentalis*). Little is known about the overwintering habitat requirements for this species, however it is believed that loose bare ground and evergreen needle litter in wooded and open areas may be important for overwintering habitat. The project area has the potential to provide habitat for Western Bumblebee.



Figure 12. Diagrams of Color Markings for Western Bumblebee (image credit http://www.xerces.org/western-bumble-bee/)

4.3.2 Fish

Tidewater Goby

Tidewater goby (*Eucyclogobius newberryi*) is listed as Federally Endangered. They are found in estuaries, marshes and lagoons immediately adjacent to the ocean. The limited stream in the project area does not provide for habitat for tidewater goby as it is disconnected from the ocean below.

4.3.3 Reptiles

Western Pond Turtle

The western pond turtle is present year-round throughout Mendocino County. They are normally associated with permanent ponds, lakes, streams, irrigation ditches, or permanent pools along intermittent streams. Basking sites include partially submerged logs, rocks, mats of floating vegetation, or open mud banks. Nests are generally along sandy banks but have been reported as far away as 325 feet from water, in many soil types, from sandy to hard. Nests must have a relatively high internal humidity in order for eggs to develop and hatch properly. The stream banks associated with the small stream may provide for nesting habitat for western pond turtle.

4.3.4 Amphibians

Northern red-legged frog

Northern red-legged frog (*Rana aurora aurora*) is listed as a California Department of Fish and Wildlife Species of Special Concern. The range extends from the southwest British Colombia coast to central Mendocino County. Often found in woods adjacent to streams and streamsides with plant cover, Northern red-legged frog breeds in permanent water sources, including lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps.

The small stream on the site could provide breeding habitat for northern red-legged frog. Additionally, this species is known to migrate as far as a mile between breeding areas during dispersal periods. The project area could contain northern red-legged frogs that pass through during dispersal periods.

Pacific Tailed Frog

Pacific tailed frog (*Ascaphus truei*) is not a Federal or State protected species but is a California State Species of Concern. Their known range is coastal from Anchor Bay, Mendocino County, north to the Oregon border. They inhabit 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. There is no habitat for Pacific tailed frog in the project area.

Foothill Yellow-Legged Frog

Foothill yellow-legged frog (*Rana boylii*) is listed as an Endangered Species under the California Endangered Species Act. This frog species is present year-round along most of the coast of California, in northwestern California, and in the western Sierra Foothills. This frog species is found in or near rocky streams in many habitat types, including but not limited to mixed coniferous forest, coastal scrub, and wet

meadows. Foothill yellow-legged frog is rarely found away from permanent water. There is no habitat for Foothill yellow-legged frog in the project area.

Southern torrent salamander

Southern torrent salamander (*Rhyacotriton variegatus*) is a California State Species of Special Concern. This salamander is found in permanent cold forest streams and seeps among rocks and pebbles. They are found in northwestern California south to Point Arena, and are found within water and in the splash zone of water. The project area does not contain habitat for this species.

4.3.5 Birds

Nesting Birds and Special Status Birds

Special status and nesting birds protected under the Migratory Bird Treaty Act may be present on or near the property. Nesting habitats can include trees, brush, grassy areas, and sometimes man-made structures, burrows, or on the ground. While no nests or nesting activity were observed during the survey effort, there is a potential for presence for nesting birds in the study area during the nesting season, including but not limited to special status species.

Western Snowy Plover

Western Snowy Plover (*Charadrius nivosus nivosus*) is listed as threatened under the federal Endangered Species Act and is a California listed Species of Special Concern. The Western snowy plover is a small shorebird that nests in the sand adjacent to tidal waters of the Pacific Ocean. The nesting area is typically just above the high tide line on the beach and consists of a scrape in the sand, usually with three eggs.

The project area is on the coastal terrace approximately 50 feet above sea level, and is about 150 feet east of the sandy beach. The project area is too far east and too separated from the ocean and sandy shore to be appropriate habitat for western snowy plover.

4.3.4 Mammals

Special Status Bats

Special Status Bats in General

Many species of bats roost in hollowed areas, crevices, or under bark of trees in forested areas near water, and, several special status species require a nearby fresh water source for feeding over and for drinking, because they do not have a good urine concentrating ability. There is a potential for presence of special status bats within the wooded areas near the project area.

Sonoma Tree Vole

Sonoma tree vole (*Arborimus pomo*) is listed as a G3 S3 Species of Special Concern. The state listing indicates the species is considered vulnerable in its range due to a restricted range, relatively few populations, recent and widespread declines or other factors.

The Sonoma tree vole range is located along the coast from Sonoma County through Mendocino, Humboldt, and Trinity County. The total population is unknown but is estimated at over 10,000. Preferred habitat is considered mesic old growth Douglas Fir Forest; however Sonoma tree voles are known to live in other coniferous forests. They are known to eat primarily Douglas fir (*Pseudotsuga menziesii*) needles but eat grand fir (*Abies grandis*) needles as well, and have been found in Bishop pine (*Pinus muricata*) in Mendocino County. They may also eat the inner bark of twigs. Sonoma tree voles live in the tree canopy and are thought to have limited dispersal capabilities, and so are threatened by canopy removal and fragmentation (Blois and Natureserve 2008).

The Bishop pine and beach pine forest on the property may be habitat for Sonoma tree vole.

4.4 Wetlands and Watercourses

4.4.1 Wetlands and Watercourses Summary

A wetland delineation was performed on April 9, 2022, consisting of four wetland data points, as shown in Figure 13.

Two of the points are located in the Bishop pine forest, with one of the points in an area where wax myrtle is present in the understory of Bishop pine, and the other point being in a location where Pacfic reedgrass dominates the understory. These points were located in the general proximity of the proposed septic leachfield. The third wetland data point was within the Pacific reedgrass meadow in an area that does not have a dominant overstory of Bishop pine, and the fourth location was in the twinberry scrub behind the house. Of the four locations, the first three were determined to be non-wetland, and the fourth location, in the twinberry scrub was determined to be Coastal Act wetland.



Figure 13. Wetland data points.

In addition to the identified Coastal Act wetland, a stream, roughly 100 feet in length, is present on the west side of the property, adjacent to the bluff edge, and in the Pacific reedgrass meadow. Because this small stream has standing water and hydrological connectivity to the Pacific Ocean, it is presumed to be an Army Corps jurisdictional wetland or watercourse (Waters of the US).

4.4.2 Wetland Data Points

The following summarizes information collected in the field in association with the wetland delineation. The wetland data sheets are included as Appendix E.

Sample point location SP01 was selected in the Bishop pine forest just within the cover of a patch of wax myrtle (*Morella californica*). The point was selected because wax myrtle is considered a facultative wet (FACW) species, and the subject location is in the vicinity of the proposed septic leachfield. The overstory in this location is dominated by the presence of Bishop pine (*Pinus muricata*), which is not indicated as a wetland species according to the wetland plant list. In the shrub layer, wax myrtle is

dominant and is a facultative wetland species. Due to the thickness of the wax myrtle present, there was not a significant vegetative presence in the herb or woody vine layer to consider any of the plants there dominant. The percentage of dominant wetland species was determined to be 50%. For the dominance test, the percentage must be greater than 50%. For this reason the vegetation parameter was determined to be upland. A soil pit was dug to 20+ inches, and no soil or hydrology indicators were observed. The sample point SP01 was determined to be upland.

Sample point location SP02 was selected in the Bishop pine forest in an area with significant understory presence of Pacific reedgrass (*Calamagrostis nutkaensis*). This point was selected because the leachfield will be located within or near areas of Bishop pine forest with significant Pacific reedgrass presence. At the selected location, Bishop pine (NI) dominates the overstory, no shrub layer was observed, Pacific reedgrass (FACW) dominates the herb layer, while California blackberry (*Rubus ursinus*) (FACU) is dominant is the woody vine layer. Percentage of dominant wetland plant species was determined to be 33%.

The soil pit was dug to 18+ inches and no wetland soil indicators or wetland hydrology indicators were observed. Sample point SP02 was determined to be upland.

Sample point location SP03 was selected in an area that had a significant presence of Pacific reedgrass, but less coverage of Bishop pine in the overstory. At this location, Bishop pine was determined to be dominant in the overstory with 7% coverage, Pacific reedgrass was determined to be dominant in the shrub layer with 40% coverage, and California blackberry was determined to be dominant in the woody vine layer, with five percent coverage. Accordingly, the percentage of dominant wetland plants present was 33%. A soil pit was dug to 18+ inches, and no soil or hydrology indicators were observed. Sample point SP03 was determined to be located in an upland area.

Sample point location SP04 was selected in the twinberry (*Lonicera involucrata*) scrub behind the existing residence, due to the observed dominance of twinberry, which is a facultative (FAC) wetland plant species. While Bishop pine was determined to be present in the overstory, it was only present at about 3% coverage, and did not constitute a dominant species. In the shrub layer, twinberry was determined to be dominant, with about 80% absolute cover, and in the herb layer, bracken (*Ptieridium aquilinum*) (FACU), purple velvet grass (*Holcus lanatus*) (FAC) and forget-me-not (*Myosotis discolor*) (FAC) were considered dominant, with 2% cover each. In the woody vine layer, California blackberry (FACU) was present and was considered dominant with 3% coverage. Three of the five dominant species

are wetland indicator species, meaning that the percentage of wetland dominant species was determined to be 60%. Hydric vegetation was determined to be present. A soil pit was dug to 20+ inches, and no wetland soil or wetland hydrology indicators were observed, however it was noted that while not saturated, the soil was very wet, and is likely saturated during the wettest time of the year. Sample point SP04 was determined to be located in a Coastal Act wetland.

A small portion of scrubland directly adjacent to the twinberry scrub was observed to be dominated by salmonberry (*Rubus spectabilis*), which is a facultative (FAC) wetland species. Due to the direct proximity to the twinberry scrub and the FAC dominance, this small area of salmonberry is also presumed to be Coastal Act wetland.

A small drainage of about 100 feet in length was observed to have standing water, and was therefore presumed to be an Army Corps jurisdictional watercourse, due to it draining over the bluff and into the Pacific Ocean.

The small water course and areas of determined wetlands are shown in Figure 14.

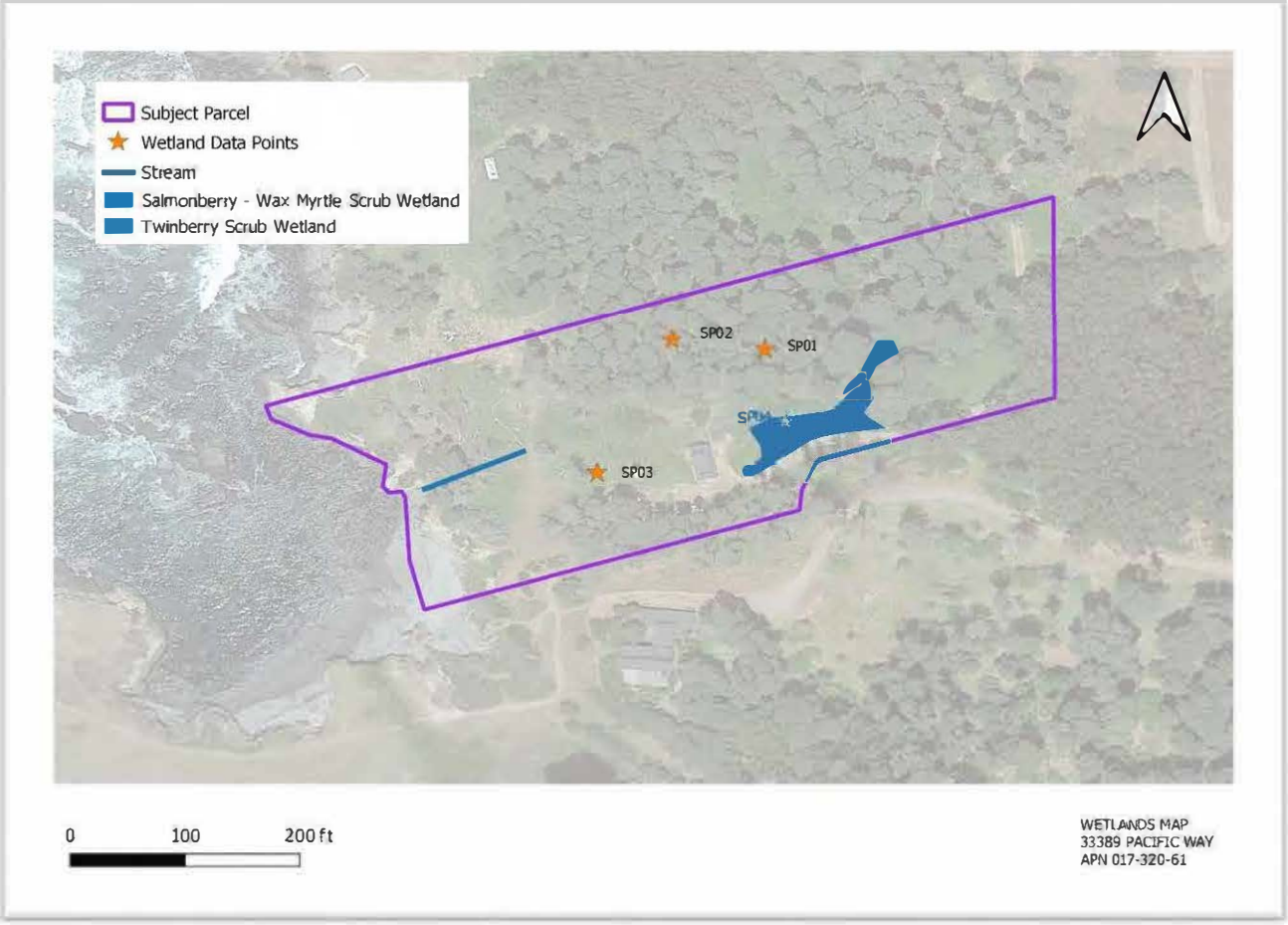

Figure 14. Wetlands and watercourse found in the project area.

5.0 Discussion

The site contains a stream, wetland, and several special status vegetation alliances, including bishop pine forest, beach pine forest, Pacific reedgrass meadow, salal-berry scrub, twinberry scrub, and salmonberry-wax myrtle scrub.

Roughly 3800 square feet of new residential structural development is proposed and 3000 square feet of new driveway and parking development is proposed on a site with an existing driveway and parking and cabin. By necessity, the new septic system, consisting of roughly 1300 square feet of developed system area and 190 linear feet of new septic line, and an additional 1500 square feet of designated replacement field must be located in the bishop pine forest ESHA. Additionally, a utility line is proposed to run through the stream in order to provide water to the residence from an existing well.

Of the proposed ~3800 square feet of new residential footprint development, approximately 1500 square feet will be located in the Pacific Reedgrass Meadow ESHA and an additional ~1500 square feet will be located in the bishop pine forest ESHA. This is necessary in order to accommodate the new residence in the designated building envelope.

The site contains habitat for Sonoma tree vole, overwintering and nectar habitat for Western and obscure bumblebees, breeding and migrating habitat for northern red-legged frog, and habitat for nesting birds and special status bats. Species- specific surveys for these species have not occurred.

There are non-native and invasive plants at the site including ~1600 square feet of invasive broom, and ~6,000 square feet of eucalyptus forest.

Avoidance, mitigation, and restoration measures are recommended in Section 5.1 below to assure that resources are protected to the extent practicable, and to assure the project will not result in overall detrimental impacts to special status habitats or species.

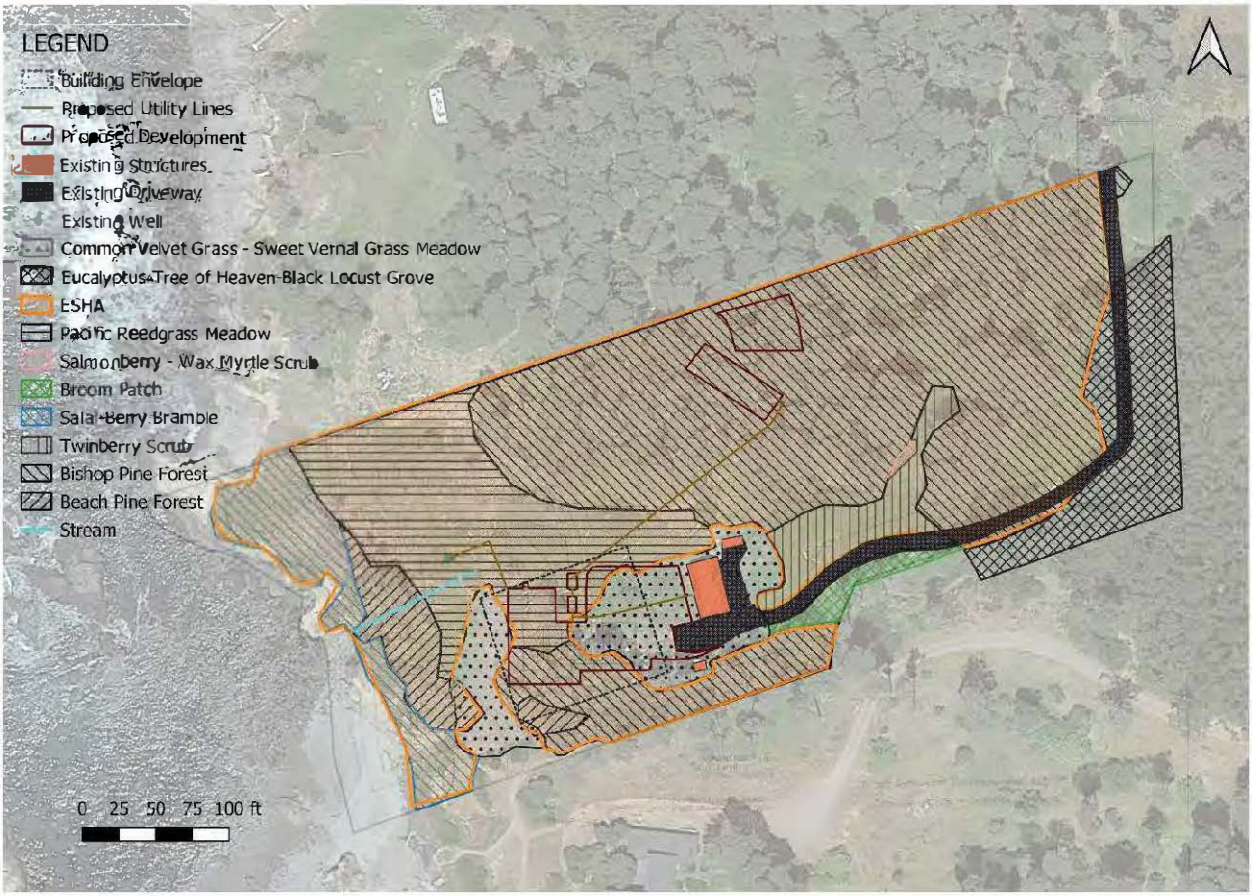

Figure 15. ESHA and Site Plan.

5.1 Recommended Avoidance, Mitigation, and Restoration Measures

5.1.1 Special Status Sonoma Tree Vole

A Sonoma tree vole survey shall occur within two weeks of tree removal activities. If tree vole nests are found in trees to be removed, the California Department of Fish and Wildlife shall be immediately notified and steps shall be taken to protect Sonoma tree voles present per California Department of Fish and Wildlife requirements. Should tree voles be found, project commencement shall not occur until California Department of Fish and Wildlife gives clearance.

5.1.2 Special Status Amphibians

Within two weeks prior to any vegetation removal or ground disturbance, project contractors will be trained by a qualified biologist in the identification of the Northern red-legged frog. Construction crews will begin each day with a visual search around all stacked or stored materials, as well as in and near the stream corridor and any pools or present water, to detect the presence of Northern red-legged frog. If a Northern red-legged frog is detected, construction or demolition crews cease all ground disturbing activity within 100 feet, and will contact the California Department of Fish and Wildlife or a qualified biologist who will provide assistance. Ground disturbing activities within 100 feet will be allowed to proceed after clearance is given from CDFW and/or the qualified biologist.

If a rain event occurs during the construction period, all construction-related activities will cease for a period of 48 hours after the rain stops. Prior to resuming construction or demolition activities, trained construction crew member(s) will examine the site for the presence of Northern red-legged frog. If no Northern red-legged frog are found, construction activities may resume.

5.1.3 Special Status Invertebrates

Ground disturbance and vegetation removal shall be limited to impacts necessary to accommodate the development.

If feasible, ground disturbance and vegetation removal activities shall occur outside of the summer season, when bumblebees are most active. If ground disturbance must occur during the summer, bumblebee surveys shall occur within two weeks prior to ground disturbance or vegetation removal, by a biologist qualified to identify special status bumblebees, and the survey results submitted to the California Department of Fish and Wildlife for approval prior to ground disturbance or vegetation removal. If

special status bumblebees are found, The California Department of Fish and Wildlife will be consulted for avoidance measures and clearance.

To the extent feasible, flowering native vegetation that could provide forage for bumblebees shall be retained at the site. Although bumblebees are generalists and will visit many diverse nectar plants, preferred food sources for Western Bumblebee include but are not limited to *Melilotus*, *Cirsium*, *Trifolium*, *Centaurea*, *Chrysothamnus*, and *Eriogonum* plant species (Koch, et al, 2012). Preferred food plants for Obscure bumblebee include but are not limited to *Baccharis*, *Cirsium*, *Lupinus*, *Lotus*, *Grindelia*, and *Phacelia* species (Koch 2012).

5.1.4 Special Status Birds and Bats

The bird breeding season typically extends from February to August. Ideally, vegetation removal and project ground disturbing impacts be done in the non-breeding season between September and January. If these activities cannot be done in the non-breeding season, a qualified biologist shall perform preconstruction breeding bird surveys within 14 days of the onset of ground disturbing impacts or clearing of vegetation. If active breeding bird nests are observed, no ground disturbance activities shall occur within a minimum 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 disturbances.

As with birds, bat roost and hibernation sites can change from year to year, so pre-construction or demolition surveys are usually necessary to determine the presence or absence of bat roost sites in a given area. Pre-construction bat surveys do not need to be performed if ground disturbing work or vegetation removal is conducted between September 1 and October 31, after young have matured and prior to the bat hibernation period. However, if it is necessary to disturb potential bat roost sites between November 1 and August 31, pre-construction surveys should be conducted. Pre-construction bat surveys involve surveying trees, rock outcrops, and buildings subject to removal or demolition for evidence of bat use (guano accumulation, or acoustic or visual detections). If evidence of bat use is found, then biologists shall conduct acoustic surveys under appropriate conditions using an acoustic detector, to determine whether a site is occupied. If bats are found, a minimum 50-foot buffer should be implemented around the roost tree. Removal of roost trees should occur in September and October, or after the bats have left the roost. In summary, no impacts would be expected and therefore no preconstruction surveys would be required for the species above if vegetation removal (including standing dead trees) is scheduled for the months of

September or October. The months of November through August would require a bird and/or bat survey dependent on the time of year.

5.1.4 Western Pond Turtle

A visual survey for Western Pond Turtle shall occur between May and July, in the vicinity of the stream and surrounding areas, following the USGS protocol for Western Pond Turtle surveys. If western pond turtles are found, California Department of Fish and Wildlife shall be consulted for guidance on avoidance measures.

5.1.5 Erosion Control and Ground Disturbance Minimization

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. Silt fencing and orange construction fencing shall be placed and maintained between construction/ground disturbance, and resource areas, to the extent feasible, for all areas where construction will occur within 50 feet of identified special status habitats as shown in Figure 15. Equipment use, and equipment and materials storage and staging shall not occur within the fenced protection areas. Any soil stockpiles will need to be covered or otherwise stabilized to prevent dust impacts. Any bare soil created by the construction phase of the project shall be re-vegetated with native vegetation and/or native seed mixes appropriate to the site for soil stabilization. Low Impact Development techniques such as permeable paving should be utilized to minimize stormwater runoff from new impervious surfaces where practical and feasible. Stormwater runoff from new impervious structures shall be engineered such that it will not result in erosion issues or convey beyond the boundaries of the property.

5.1.6 Bishop Pine Forest Active Management Plan

An active management plan shall be developed for the Bishop Pine Forest in order to provide restoration of areas impacted by development, and for the long-term health of the forest habitat. The active management plan shall be prepared by a qualified ecologist, biologist or forester familiar with the Bishop pine forest, and approved by the Department of Fish and Wildlife, and shall include: restoration of areas impacted by forest removal to facilitate development of the residence and septic system; a regular understory management regimen to facilitate the growth of new recruits; and identification, removal, and prevention of pathogens killing Bishop pine trees and other native flora, and monitoring and reporting.

5.1.7 Invasive Plant Species Removal and Prevention

Invasive Plant Species – Landscaping on the parcel shall not include any invasive plants and shall consist of native plants compatible with the adjacent plant communities.

Prior to entering the site, the tires and undercarriage of heavy equipment shall be washed in order to remove any invasive plant seed that may be present.

Invasive plants with a California Invasive Plant Council rating of Low, Moderate and High are present on the property. These plants include but are not limited to English ivy (*Hedera helix*), Scotch broom (*Cytisus scoparius*), Eucalyptus (*Eucalyptus globulus*), iceplant (*Carpobrotus edulis*, *Carpobrotus chilensis*), bull thistle (*Cirsium vulgare*), and ripgut brome (*Bromus diandrus*).

As part of a restoration plan, a plan shall be developed for the removal of invasive species from the property in order to protect the sensitive vegetation alliances and habitat present from invasion, and to mitigate for the impacts of the proposed development. The plan shall include identification of the locations and extent of invasives, the timing and steps needed for removal and maintenance, and monitoring and reporting.

Appendix A. Scoping Tables
Table 1. CNPS Nine Quad Search

CNPS Rare Plant Inventory

California Native Plant Society

Search Results

75 matches found. Click on scientific name for details

Search Criteria: CRPR is one of [1A:1B:2A:2B:3:4], 9-Quad include [3912346:3912356:3912357:3912347:3912336:3912337]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK
Abronia umbellata var. breviflora	pink sand-verbena	Nyctaginaceae	annual herb	Jun-Oct	None	None	G4G5T2	S2	1B.1
Agrostis blasdalei	Blasdale's bent grass	Poaceae	perennial rhizomatous herb	May-Jul	None	None	G2	S2	1B.2
Angelica lucida	sea-watch	Apiaceae	perennial herb	Apr-Sep	None	None	G5	S3	4.2
Arctostaphylos pumila ssp. mendocinoensis	pygmy manzanita	Ericaceae	perennial evergreen shrub	Jan	None	None	G3?T1	S1	1B.2
Astragalus agnicidus	Humboldt County milk-vetch	Fabaceae	perennial herb	Apr-Sep	None	CE	G2	S2	1B.1
Blennosperma nanum var. robustum	Point Reyes blennosperma	Asteraceae	annual herb	Feb-Apr	None	CR	G4T2	S2	1B.2
Calamagrostis bolanderi	Bolander's reed grass	Poaceae	perennial rhizomatous herb	May-Aug	None	None	G4	S4	4.2
Calamagrostis crassiglumis	Thurber's reed grass	Poaceae	perennial rhizomatous herb	May-Aug	None	None	G3Q	S2	2B.1
Calystegia purpurata ssp. saxicola	coastal bluff morning-glory	Convolvulaceae	perennial herb	(Mar)Apr-Sep	None	None	G4T2T3	S2S3	1B.2
Campanula californica	swamp harebell	Campanulaceae	perennial rhizomatous herb	Jun-Oct	None	None	G3	S3	1B.2
Carex californica	California sedge	Cyperaceae	perennial rhizomatous herb	May-Aug	None	None	G5	S2	2B.2
Carex lenticularis var. limnophila	lagoon sedge	Cyperaceae	perennial herb	Jun-Aug	None	None	G5T5	S1	2B.2
Carex livida	livid sedge	Cyperaceae	perennial rhizomatous herb	Jun	None	None	G5	SH	2A
Carex lyngbyei	Lyngbye's sedge	Cyperaceae	perennial rhizomatous herb	Apr-Aug	None	None	G5	S3	2B.2
Carex saliniformis	deceiving sedge	Cyperaceae	perennial rhizomatous herb	Jun(Jul)	None	None	G2	S2	1B.2
Carex viridula ssp. viridula	green yellow sedge	Cyperaceae	perennial herb	(Jun)Jul-Sep(Nov)	None	None	G5T5	S2	2B.3
Castilleja ambigua var. ambigua	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	Mar-Aug	None	None	G4T4	S3S4	4.2
Castilleja ambigua var. humboldtiensis	Humboldt Bay owl's-clover	Orobanchaceae	annual herb (hemiparasitic)	Apr-Aug	None	None	G4T2	S2	1B.2
Castilleja latifolia	Monterey Coast paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Feb-Sep	None	None	G4	S4	4.3
Castilleja litoralis	Oregon coast	Orobanchaceae	perennial herb	Jun	None	None	G3	S3	2B.2

	paintbrush		(hemiparasitic)						
Castilleja mendocinensis	Mendocino Coast paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Apr-Aug	None	None	G2	S2	1B.2
Ceanothus gloriosus var. exaltatus	glory brush	Rhamnaceae	perennial evergreen shrub	Mar-Jun(Aug)	None	None	G4T4	S4	4.3
Ceanothus gloriosus var. gloriosus	Point Reyes ceanothus	Rhamnaceae	perennial evergreen shrub	Mar May	None	None	G4T4	S4	4.3
Chorizanthe howellii	Howell's spineflower	Polygonaceae	annual herb	May-Jul	FE	CT	G1	S1	1B.2
Chrysosplenium glechomifolium	Pacific golden saxifrage	Saxifragaceae	perennial herb	Feb-Jun	None	None	G5?	S3	4.3
Clarkia amoena ssp. whitneyi	Whitney's farewell-to spring	Onagraceae	annual herb	Jun-Aug	None	None	G5T1	S1	1B.1
Collinsia corymbosa	round-headed Chinese-houses	Plantaginaceae	annual herb	Apr-Jun	None	None	G1	S1	1B.2
Coptis laciniata	Oregon goldthread	Ranunculaceae	perennial rhizomatous herb	(Feb)Mar-May(Sep Nov)	None	None	G4?	S3?	4.2
Cornus Unalaschkensis	bunchberry	Cornaceae	perennial rhizomatous herb	May-Jul	None	None	G5	S2	2B.2
Cuscuta pacifica var. papillata	Mendocino dodder	Convolvulaceae	annual vine (parasitic)	(Jun)Jul Oct	None	None	G5T1	S1	1B.2
Darlingtonia californica	California pitcherplant	Sarraceniaceae	perennial rhizomatous herb (carnivorous)	Apr Aug	None	None	G4	S4	4.2
Erigeron supplex	supple daisy	Asteraceae	perennial herb	May-Jul	None	None	G2	S2	1B.2
Erysimum concinnum	bluff wallflower	Brassicaceae	annual/perennial herb	Feb-Jul	None	None	G3	S2	1B.2
Erysimum menziesii	Menzies' wallflower	Brassicaceae	perennial herb	Mar Sep	FE	CE	G1	S1	1B.1
Gilia capitata ssp. pacifica	Pacific gilia	Polemoniaceae	annual herb	Apr-Aug	None	None	G5T3	S2	1B.2
Gilia millefoliata	dark-eyed gilia	Polemoniaceae	annual herb	Apr Jul	None	None	G2	S2	1B.2
Glehnia littoralis ssp. leiocarpa	American glehnia	Apiaceae	perennial herb	May-Aug	None	None	G5T5	S2S3	4.2
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	Asteraceae	annual herb	Apr-Nov	None	None	G5T2	S2	1B.2
Hemizonia congesta ssp. tracyi	Tracy's tarplant	Asteraceae	annual herb	(Mar)May-Oct	None	None	G5T4	S4	4.3
Hesperevax sparsiflora var. brevifolia	short-leaved evax	Asteraceae	annual herb	Mar-Jun	None	None	G4T3	S3	1B.2
Hesperocyparis pygmaea	pygmy cypress	Cupressaceae	perennial evergreen tree		None	None	G1	S1	1B.2
Horkelia marinensis	Point Reyes horkelia	Rosaceae	perennial herb	May-Sep	None	None	G2	S2	1B.2
Hosackia gracilis	harlequin lotus	Fabaceae	perennial rhizomatous herb	Mar-Jul	None	None	G3G4	S3	4.2
Iris longipetala	coast iris	Iridaceae	perennial rhizomatous herb	Mar-May(Jun)	None	None	G3	S3	4.2
Juncus supiniformis	hair-leaved rush	Juncaceae	perennial rhizomatous herb	Apr-May(Jun-Jul)	None	None	G5	S1	2B.2
Lasthenia californica ssp. bakeri	Baker's goldfields	Asteraceae	perennial herb	Apr Oct	None	None	G3T1	S1	1B.2

Isocoma menziesii var. vernonioides	Vernon's goldenbush	Asteraceae	perennial rhizomatous herb	(Jul)Aug-Nov	None	None	G3T3	S3	1B.2
Lasthenia californica ssp. macrantha	perennial goldfields	Asteraceae	perennial herb	Jan-Nov	None	None	G3T2	S2	1B.2
Lathyrus palustris	marsh pea	Fabaceae	perennial herb	Mar-Aug	None	None	G5	S2	2B.2
Leptosiphon latisectus	broad-lobed leptosiphon	Polemoniaceae	annual herb	Apr-Jun	None	None	G4	S4	4.3
Lilium maritimum	coast lily	Liliaceae	perennial bulbiferous herb	May-Aug	None	None	G2	S2	1B.1
Lilium rubescens	redwood lily	Liliaceae	perennial bulbiferous herb	Apr-Aug(Sep)	None	None	G3	S3	4.2
Listera cordata	heart-leaved twayblade	Orchidaceae	perennial herb	Feb-Jul	None	None	G5	S4	4.2
Lycopodium clavatum	running-pine	Lycopodiaceae	perennial rhizomatous herb	Jun-Aug(Sep)	None	None	G5	S3	4.1
Microseris borealis	northern microseris	Asteraceae	perennial herb	Jun-Sep	None	None	G5	S1	2B.1
Mitellastra caulescens	leafy stemmed mitrewort	Saxifragaceae	perennial rhizomatous herb	(Mar)Apr-Oct	None	None	G5	S4	4.2
Oenothera wolfii	Wolf's evening-primrose	Onagraceae	perennial herb	May-Oct	None	None	G2	S1	1B.1
Packera bolanderi var. bolanderi	seacoast ragwort	Asteraceae	perennial rhizomatous herb	(Jan-Apr)May-Jul(Aug)	None	None	G4T4	S2S3	2B.2
Phacelia insularis var. continentis	North Coast phacelia	Hydrophyllaceae	annual herb	Mar-May	None	None	G2T2	S2	1B.2
Pinus contorta ssp. bolanderi	Bolander's beach pine	Pinaceae	perennial evergreen tree		None	None	G5T2	S2	1B.2
Piperia candida	white-flowered rein orchid	Orchidaceae	perennial herb	(Mar)May-Sep	None	None	G3	S3	1B.2
Pityopus californicus	California pinefoot	Ericaceae	perennial herb (achlorophyllous)	(Mar-Apr)May-Aug	None	None	G4G5	S4	4.2
Pleuropogon refractus	nodding semaphore grass	Poaceae	perennial rhizomatous herb	(Mar)Apr-Aug	None	None	G4	S4	4.2
Puccinellia pumila	dwarf alkali grass	Poaceae	perennial herb	Jul	None	None	G4?	SH	2B.2
Ramalina thrausta	angel's hair lichen	Ramalinaceae	fruticose lichen (epiphytic)		None	None	G5?	S2S3	2B.1
Rhynchospora alba	white-beaked rush	Cyperaceae	perennial rhizomatous herb	Jun-Aug	None	None	G5	S2	2B.2
Rhynchospora globularis	round-headed beaked-rush	Cyperaceae	perennial rhizomatous herb	Jul-Aug	None	None	G4	S1	2B.1
Sanguisorba officinalis	great burnet	Rosaceae	perennial rhizomatous herb	Jul-Oct	None	None	G5?	S2	2B.2
Sidalcea malachroides	maple-leaved checkerbloom	Malvaceae	perennial herb	(Mar)Apr-Aug	None	None	G3	S3	4.2
Sidalcea malviflora ssp. purpurea	purple-stemmed checkerbloom	Malvaceae	perennial rhizomatous herb	May-Jun	None	None	G5T1	S1	1B.2
Tiarella trifoliata var. trifoliata	trifoliate laceflower	Saxifragaceae	perennial rhizomatous herb	(May)Jun-Aug	None	None	G5T5	S2S3	3.2
Trifolium trichocalyx	Monterey clover	Fabaceae	annual herb	Apr-Jun	FE	CE	G1	S1	1B.1
Triquetrella californica	coastal triquetrella	Pottiaceae	moss		None	None	G2	S2	1B.2

Usnea longissima	Methuselah's beard lichen	Parmeliaceae	fruticose lichen (epiphytic)		None	None	G4	S4	4.2
Veratrum fimbriatum	fringed false-hellebore	Melanthiaceae	perennial herb	Jul-Sep	None	None	G3	S3	4.3
Viola palustris	alpine marsh violet	Violaceae	perennial rhizomatous herb	Mar-Aug	None	None	G5	S1S2	2B.2

Showing 1 to 75 of 75 entries

Suggested Citation:
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Appendix A – Scoping Tables
Table 2. CNDDB Search Mendocino Quad

Selected Elements by Common Name
California Department of Fish and Wildlife
California Natural Diversity Database

Query Criteria: Quad IS (Fort Bragg (3912347))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
alpine marsh violet *Viola palustris*	PDVIO041G0	None	None	G5	S1S2	2B.2
angel's hair lichen *Ramalina thrausta*	NLLEC3S340	None	None	G5?	S2S3	2B.1
Baker's goldfields *Lasthenia californica ssp. bakeri*	PDAST5L0C4	None	None	G3T1	S1	1B.2
Blasdale's bent grass *Agrostis blasdalei*	PMPOA04060	None	None	G2	S2	1B.2
bluff wallflower *Erysimum concinnum*	PDBRA160E3	None	None	G3	S2	1B.2
Bolander's beach pine *Pinus contorta ssp. bolanderi*	PGPIN04081	None	None	G5T2	S2	1B.2
bunchberry *Cornus unalaschkensis*	PDCOR010F0	None	None	G5	S2	2B.2
California sedge *Carex californica*	PMCYP032D0	None	None	G5	S2	2B.2
coast lily *Lilium maritimum*	PMLIL1A0C0	None	None	G2	S2	1B.1
coastal bluff morning-glory *Calystegia purpurata ssp. saxicola*	PDCON040D2	None	None	G4T2T3	S2S3	1B.2
coastal triquetrella *Triquetrella californica*	NBMUS7S010	None	None	G2	S2	1B.2
dark-eyed gilia *Gilia millefoliata*	PDPLM04130	None	None	G2	S2	1B.2
deceiving sedge *Carex saliniformis*	PMCYP03BY0	None	None	G2	S2	1B.2
dwarf alkali grass *Puccinellia pumila*	PMPOA531L0	None	None	G4?	SH	2B.2
foothill yellow-legged frog *Rana boylii*	AAABH01050	None	Endangered	G3	S3	SSC
globose dune beetle *Coelus globosus*	IICOL4A010	None	None	G1G2	S1S2	
great burnet *Sanguisorba officinalis*	PDROS1L060	None	None	G5?	S2	2B.2
hair-leaved rush *Juncus supiniformis*	PMJUN012R0	None	None	G5	S1	2B.2
Howell's spineflower *Chorizanthe howellii*	PDPGN040C0	Endangered	Threatened	G1	S1	1B.2
Mendocino Coast paintbrush *Castilleja mendocinensis*	PDSCR0D3N0	None	None	G2	S2	1B.2

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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Mendocino dodder *Cuscuta pacifica var. papillata*	PDCUS011A2	None	None	G5T1	S1	1B.2
Mendocino Pygmy Cypress Forest *Mendocino Pygmy Cypress Forest*	CTT83161CA	None	None	G2	S2.1	
Menzies' wallflower *Erysimum menziesii*	PDBRA160R0	Endangered	Endangered	G1	S1	1B.1
North Coast phacelia *Phacelia insularis var. continentis*	PDHYD0C2B1	None	None	G2T2	S2	1B.2
northern red-legged frog *Rana aurora*	AAABH01021	None	None	G4	S3	SSC
obscure bumble bee *Bombus caliginosus*	IIHYM24380	None	None	G2G3	S1S2	
Oregon coast paintbrush *Castilleja litoralis*	PDSCR0D012	None	None	G3	S3	2B.2
Pacific gilia *Gilia capitata ssp. pacifica*	PDPLM040B6	None	None	G5T3	S2	1B.2
Pacific tailed frog *Ascaphus truei*	AAABA01010	None	None	G4	S3S4	SSC
perennial goldfields *Lasthenia californica ssp. macrantha*	PDAST5L0C5	None	None	G3T2	S2	1B.2
pink sand-verbena *Abronia umbellata var. breviflora*	PDNYC010N4	None	None	G4G5T2	S2	1B.1
Point Reyes blennosperma *Blennosperma nanum var. robustum*	PDAST1A022	None	Rare	G4T2	S2	1B.2
Point Reyes horkelia *Horkelia marinensis*	PDROS0W0B0	None	None	G2	S2	1B.2
purple-stemmed checkerbloom *Sidalcea malviflora ssp. purpurea*	PDMAL110FL	None	None	G5T1	S1	1B.2
pygmy cypress *Hesperocyparis pygmaea*	PGCUP04032	None	None	G1	S1	1B.2
pygmy manzanita *Arctostaphylos nummularia ssp. mendocinoensis*	PDERI04280	None	None	G3?T1	S1	1B.2
round-headed Chinese-houses *Collinsia corymbosa*	PDSCR0H060	None	None	G1	S1	1B.2
seacoast ragwort *Packera bolanderi var. bolanderi*	PDAST8H0H1	None	None	G4T4	S2S3	2B.2
short-leaved evax *Hesperevax sparsiflora var. brevifolia*	PDASTE5011	None	None	G4T3	S3	1B.2
southern torrent salamander *Rhyacotriton variegatus*	AAAAJ01020	None	None	G3G4	S2S3	SSC
Sphagnum Bog *Sphagnum Bog*	CTT51110CA	None	None	G3	S1.2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
swamp harebell *Campanula californica*	PDCAM02060	None	None	G3	S3	1B.2
Ten Mile shoulderband *Neoe intersessa*	IMGASC5070	None	None	G2	S2	
tidewater goby *Eucyclogobius newberryi*	AFCQN04010	Endangered	None	G3	S3	
western bumble bee *Bombus occidentalis*	IIHYM24250	None	None	G2G3	S1	
western pond turtle *Emys marmorata*	ARAAD02030	None	None	G3G4	S3	SSC
western snowy plover *Charadrius nivosus nivosus*	ABNNB03031	Threatened	None	G3T3	S2	SSC
white beaked-rush *Rhynchospora alba*	PMCYP0N010	None	None	G5	S2	2B.2
Whitney's farewell-to-spring *Clarkia amoena ssp. whitneyi*	PDONA05025	None	None	G5T1	S1	1B.1

Record Count: 49

Appendix A. – Scoping Tables

Table 3. California Sensitive Natural Communities A partial list of vegetation alliances occurring in coastal Mendocino County, is derived from the California Department of Fish and Wildlife's "California Natural Community List (2021) (https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities).

Scientific Name	Common Name	Global& State Rank
Woodland and Forest Alliances and Stands		
Abies grandis Alliance	Grand fir forest	G4 S2
Abies grandis – Picea sitchensis / Gaultheria shallon / Polystichum munitum Association	Grand fir forest	G1 S1
Abies grandis – Tsuga heterophylla / Polystichum munitum Association	Grand fir forest	G2 S1
Acer macrophyllum Alliance	Bigleaf maple forest	G4S3
Alnus rubra Alliance	Red alder forest	G5 S4
Arbutus menziesii Alliance	Madrone forest	G4 S3
Eucalyptus spp – Ailanthus altissima – Robinia pseudoacacia Association	Eucalyptus – tree of heaven – black locust groves semi natural	GNA SNA
Hesperocyparis macrocarpa – Pinus radiata Alliance	Monterey cypress Monterey Pine Stands	GNA SNA
Hesperocyparis pigmaea Alliance	Mendocino pygmy cypress woodland	G1 S1
Notholithocarpus densiflorus Alliance	Tanoak forest	G4 S3
Picea sitchensis Alliance	Sitka spruce forest	G5 S2
Pinus attenuata Alliance	Knobcone pine forest	G4S4
Pinus contorta ssp. *contorta* Alliance	Beach pine forest	G5 S3
Pinus muricata Alliance	Bishop pine – Monterey pine forest	G3 S3
Pinus muricata – (Arbutus menziesii) / Vaccinium ovatum Association	Bishop pine – Monterey pine forest	G2 S2
Pinus muricata – Chrysolepis chrysophylla / Arctostaphylos nummularia Association	Bishop pine – Monterey pine forest	G2 S2
Pinus muricata – Notholithocarpus densiflorus Association	Bishop pine – Monterey pine forest	G3 S3
Pinus muricata - Pinus radiata	Bishop pine – Monterey pine forest	G3 S3
Pseudotsuga menziesii Alliance	Douglas fir forest	G5 S4
Pseudotsuga menziesii – Chrysolepis chrysophylla – Notholithocarpus densiflorus Association	Douglas fir forest	G3 S3
Pseudotsuga menziesii / Baccharis pilularis Association	Douglas fir forest	G4 S4?
Pseudotsuga menziesii - Notholithocarpus densiflorus Association	Douglas fir - tanoak forest	G3 S3
Pseudotsuga menziesii – Notholithocarpus densiflorus / Rhododendron macrophyllum Association	Douglas fir - tanoak forest	G2 S2
Salix laevigata Alliance	Red willow thickets	G4S3
Salix lucida Alliance	Shining willow groves	G4 S3
Sequoia sempervirens Alliance	Redwood forest	G3 S3
Sequoia sempervirens – Chrysolepis chrysophylla / Arctostaphylos glandulosa	Redwood forest	G2 S2?
Sequoia sempervirens – Hesperocyparis pigmaea	Redwood forest	G1 S1
Tsuga heterophylla Alliance	Western hemlock forest	G5 S2
Umbellularia californica Alliance	California bay forest	G4 S3
Shrubland Alliances and Stands		
Arctostaphylos (canescens, glandulosa, Adenostoma fasciculatum) Alliance	Hoary, Eastwood manzanita and chamise chaparral	G3 S3
Arctostaphylos nummularia Alliance	Glossy leaf manzanita chaparral	G2 S2
Arctostaphylos sensitiva Alliance	Glossy leaf manzanita chaparral	G2 S2
Arctostaphylos manzanita Alliance	Common manzanita chaparral	G3 S3
Baccharis pilularis Alliance	Coyote brush scrub	G5 S5
Baccharis pilularis – Ceanothus thyrsiflorus	Coyote brush scrub	G3 S3?
Baccharis pilularis – Frangula californica – Rubus spp.	Coyote brush scrub	G5 S5
Baccharis pilularis / Carex obnupta – Juncus patens	Coyote brush scrub	G3 S3?

Scientific Name	Common Name	Global& State Rank
Baccharis pilularis / Danthonia californica	Coyote brush scrub	G2 S2
Baccharis pilularis / Deschampsia cespitosa	Coyote brush scrub	G2 S1
Scientific Name	**Common Name**	**Global& State Rank**
Baccharis pilularis / Eriophyllum staechadifolium	Coyote brush scrub	G3 S3
Broom (Cytisus scoparius and Others)	Broom patches	GNA SNA
Ceanothus cuneatus Alliance	Wedge leaf ceanothus chaparral; Buck brush chaparral	G4S4
Ceanothus thyrsiflorus Alliance	Blue blossom chaparral	G4S4
Ceanothus thyrsiflorus Rubus ursinus	Blue blossom chaparral	G3 S3?
Ceanothus thyrsiflorus Vaccinium ovatum Rubus parviflorus	Blue blossom chaparral	G3 S3?
Chrysolepis chrysophylla	Golden chinquapin thickets	G2 S2
Corylus cornuta var. *californica* Alliance	Hazelnut scrub	G3 S2?
Frangula californica -Rhododendron occidentale - Salix breweri Alliance	California coffee berry western azalea scrub Brewer's willow	G3 S3
Diplacas aurantiacus Alliance	Bush monkeyflower scrub	G3 S3?
Lupinus arboreus scrub	Yellow bush lupine scrub	G4S4
Rhododendron columbianum Alliance	Western Labrador-tea thickets	G4 S2?
Rosa californica Alliance	California rose briar patches	G3 S3
Rubus spectabilis Morella californica Alliance	Salmonberry WaxMyrtle Scrub	G3 S3
Rubus armeniacus	Himalayan blackberry rattlebox edible fig riparian scrub	GNR SNR
Rubus armeniacus-Rubus ursinus	Himalayan blackberry rattlebox edible fig riparian scrub	GNR SNR
Salix hookeriana Alliance	Coastal dune willow thickets	G4 S3
Salix lasiolepis Alliance	Arroyo willow thickets	G4S4
Salixlasiolepis Rubus ursinus	Arroyo willow thickets	G4S4
Salix lasiolepis Salix lucida	Arroyo willow thickets	G3 S3?
Salix sitchensis Alliance	Sitka willow thickets	G4 S3?
Toxicodendron diversilobum Alliance	Poison oak scrub	G4S4
Toxicodendron diversilobum Baccharis pilularis	Poison oak scrub	G4S4
Toxicodendron diversilobum Diplacus aurantiacus	Poison oak scrub	G3 S3?
Herbaceous Alliances and Stands		
Abronia latifolia Erigeron glaucus Alliance	Dune mat	G3 S3
Ammophila Arenaria Alliance	European beach grass swards	GNA SNA
Argentina egedii	Pacific silverweed marshes	G4 S1
Avena spp Bromus spp	Wild oats and annual brome grasslands	GNA SNA
Calamagrostis nutkaensis Alliance	Pacific reed grass meadows	G4 S2
Calamagrostis nutkaensis Carex (obnupta) Juncus (patens)	Pacific reed grass meadows	G2 S2.1
Calamagrostis nutkaensis / Baccharis pilularis	Pacific reed grass meadows	G2 S1.2
Carex obnupta Alliance	Slough sedge swards	G4S3
Carex obnupta Juncus patens Alliance	Slough sedge swards	G3 S3?
Carex pansa Alliance	Sand dune sedge swaths	G4? S3?
Conium maculatum - Foeniculum vulgare Alliance	Poison hemlock or fennel patches	GNA SNA
Cortaderia (jubata, selloana) Alliance	Pampas grass patches	GNA SNA
Cynosurus echinatus Bromus hordeaceus Avena fatua Alliance	Annual dogtail grasslands	GNA SNA
Danthonia californica Alliance	California oat grass prairie	G4 S3
Darlingtonia californica	California pitcher plant fens	G4 S3?
Deschampsia caespitosa - Hordeum brachyantherum Danthonia cali Alliance	Tufted hair grass-Meadow barley-California oatgrass meadows	GNR S3
Deschampsia cespitosa Anthoxanthum odoratum	Tufted hair grass meadows	G5 S4?
Deschampsia cespitosa Danthonia californica	Tufted hair grass meadows	G2 S2

Deschampsia cespitosa – Horkelia marinensis	Tufted hair grass meadows	G3 S1
Distichlis spicata	Salt grass flats	GNR S4
Eleocharis macrostachya Alliance	Pale spike rush marshes	G4S4
Elymus glaucus Alliance	Blue wild rye meadows	G3? S3?
Festuca idahoensis Alliance	Idaho fescue grassland	GNR S3?
Grindelia (stricta) Provisional Alliance	Gum plant patches	G2G3 S2S3
Heterotheca (sessiflora) Alliance	Goldenaster patches	G3 S3
Scientific Name	**Common Name**	**Global& State Rank**
Holcus lanatus – Anthoxanthum odoratum Alliance	Common velvet grass – sweet vernal grass meadows	GNA SNA
Juncus articus (var. *balticus, mexicanus*)	Baltic and Mexican rush marshes	G5 S4
Juncus effusus Alliance	Soft rush marshes	G4 S4?
Lasthenia californica – Plantage erecta – Vulpia microstachys Alliance	California goldfields – dwarf plantain – small fescue flower fields	G4S4
Leymus mollis Alliance	Sea lyme grass patches	G4 S2
Mimulus (guttatus) Alliance	Common monkey flower seeps	G4?S3?
Nassella pulchra Alliance	Purple needle grass grassland	G3 S3?
Poa secunda Alliance	Curley bluegrass grassland	G4 S3?
Scirpus microcarpus Alliance	Small-fruited bulrush marsh	G4 S2

Appendix B. References

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Appendix C. List of Plants Found on Site

Group	Family	Latin name	Common name	Native
FERNS AND ALLIES				
	Blechnaceae			
		Woodwardia fimbriata	giant chain fern	Y
	Dennstaedtiaceae			
		Pteridium aquilinum var. pubescens	bracken; western bracken; hairy bracken fern	Y
	Dryopteridaceae			
		Polystichum munitum	western sword fern	Y
	Equisetaceae			
		Equisetum arvense	field horsetail; common horsetail	Y
		Equisetum telmateia ssp. braunii	giant horsetail	Y
	Polypodiaceae			
		Polypodium sp.	polypody	
GYMNOSPERMS				
	Cupressaceae			
		Hesperocyparis macrocarpa	Monterey cypress	Y
	Pinaceae			
		Abies grandis	grand fir; lowland fir	Y
		Picea sitchensis	Sitka spruce	Y
		Pinus contorta ssp. contorta	shore pine; beach pine	Y
		Pinus muricata	Bishop pine; prickle-cone pine; bull pine	Y
		Pseudotsuga menziesii var. menziesii	Douglas fir	Y
DICOTS				
	Aizoaceae			
		Carpobrotus chilensis	sea fig	N
		Carpobrotus edulis	sea fig, hottentot fig, iceplant	N
	Apiaceae			
		Angelica hendersonii	Henderson's angelica	Y
	Araliaceae			
		Hedera helix	English ivy	N
	Asteraceae			
		Achillea millefolium	yarrow	Y

Group	Family	Latin name	Common name	Native
		Baccharis pilularis	coyote brush	Y
		Bellis perennis	English daisy	N
		Cirsium vulgare	bull thistle	N
		Erigeron glaucus	seaside daisy	Y
		Eriophyllum lanatum	wooly sunflower	Y
		Grindelia stricta	coastal gumweed	Y
		Hypochaeris radicata	rough cat's ear, hairy cat's ear	N
		Leucanthemum vulgare	oxe eye daisy, oxeye daisy	N
		Senecio minimus	little erechtites, Australian fireweed	N
		Symphyotrichum chilense	california aster	Y
	Betulaceae			
		Alnus rubra	red alder, Oregon alder	Y
		Myosotis discolor	forget-me-not, changing forget me not	N
	Brassicaceae			
		Cardamine californica	bitter cress, California toothwort, milk maids	Y
		Raphanus sativus	wild radish	N
	Caprifoliaceae			
		Lonicera hispidula	hairy honeysuckle	Y
		Lonicera involucrata	coast twinberry, Twinberry honeysuckle	Y
	Crassulaceae			
		Dudleya farinosa	north coast dudleya, Bluff lettuce, Powdery liveforever	Y
	Ericaceae			
		Gaultheria shallon	salal	Y
		Rhododendron columbianum	western Labrador tea, Labrador tea	Y
		Vaccinium ovatum	California huckleberry	Y
	Fabaceae			
		Cytisus scoparius	Scotch broom	N
		Lathyrus vestitus	Pacific pea	Y
		Lupinus latifolius	broadleaf lupine	Y
		Lupinus littoralis	seashore lupine, blufflupine	Y
		Vicia gigantea	giantvetch	Y

Group	Family	Latin name	Common name	Native
	Fagaceae			
		Notholithocarpus densiflorus var. densiflorus	tanoak	Y
	Garryaceae			
		Garrya elliptica	coast silk tassel	Y
	Lamiaceae			
		Prunella vulgaris	self-heal	
		Stachys rigida	rigid hedge-nettle	Y
	Linaceae			
		Linum bienne	pale flax	N
	Myricaceae			
		Morella californica	wax-myrtle	Y
	Myrtaceae			
		Eucalyptus globulus	blue gum	N
	Onagraceae			
		Fuchsia magellenica	hardy fuchsia	N
	Papaveraceae			
		Eschscholzia californica	California poppy	Y
	Philadelphaceae			
		Whipplea modesta	yerba de selva, modesty	Y
	Plantaginaceae			
		Plantago lanceolata	English plantain, ribwort, narrow leaved plantain, ribgrass	N
		Plantago maritima	maritime plantain, seaside plantain, goose tongue	Y
	Plumbaginaceae			
		Armeria maritima ssp. californica	California sea-pink	Y
	Polygonaceae			
		Eriogonum latifolium	coast buckwheat	Y
		Rumex acetosella	common sheep sorrel	N
	Portulacaceae			
		Claytonia perfoliata	miner's lettuce	Y
	Primulaceae			
		Lysimachia arvensis	scarlet pimpernel, poor man's weathervane	N

Group	Family	Latin name	Common name	Native
	Rhamnaceae			
		Frangula californica	California coffeeberry	Y
	Rosaceae			
		Fragaria vesca	woodland strawberry, wood strawberry	Y
		Rosa californica	California wild rose	Y
		Rosa nutkana	Nootka rose	Y
		Rubus armeniacus	Himalaya-berry, Himalayan blackberry	N
		Rubus spectabilis	salmon berry	Y
		Rubus ursinus	California blackberry	Y
	Rubiaceae			
		Galium aparine	common bedstraw; cleavers; goose-grass	Y
	Violaceae			
		Viola sempervirens	evergreen violet, redwood violet	Y
MONOCOTS				
	Cyperaceae			
		Carex obnupta	slough sedge	Y
	Iridaceae			
		Crocosmia Xcrocosmiiflora	montbretia	N
		Iris douglasiana	Douglas' iris	Y
		Sisyrinchium bellum	blue-eyed grass	Y
	Juncaceae			
		Juncus effusus	common bog rush	Y
	Liliaceae			
		Allium dichlamydeum	coastal onion	Y
		Clintonia andrewsiana	blue-bead lily, red clintonia	Y
		Scoliopus bigelovii	slink-pod, fetid adder's tongue	Y
	Orchidaceae			
		Goodyera oblongifolia	rattlesnake plantain	Y
	Poaceae			
		Aira praecox	yellow hairgrass, little hairgrass	N
		Anthoxanthum odoratum	sweet vernal grass	N
		Briza maxima	big quaking grass; rattlesnake grass	N

Group	Family	Latin name	Common name	Native
		Bromus carinatus var. carinatus	California brome	Y
		Bromus diandrus	ripgut brome; ripgut	N
		Bromus hordeaceus	soft chess	N
		Calamagrostis nutkaensis	Pacific reedgrass	Y
		Dactylis glomerata	orchard-grass	N
		Deschampsia cespitosa ssp. holciformis	coastal tuftedhair-grass	Y
		Festuca myuros	rattail fescue	N
		Festuca perennis	perrenial ryegrass, English ryegrass	N
		Festuca rubra	red fescue	Y
		Holcus lanatus	common velvetgrass	N
	Ruscacea			
		Maianthemum dilatatum	two-leaf false Solomon's-seal	Y
		Maianthemum stellatum	little false-solomon's-seal	Y

Appendix D. Soil Report

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

33389 Pacific Way



May 7, 2022

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.

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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

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
212
Soil Map may not be valid at this scale.
Map Scale: 1:1,160 if printed on A landscape (11" x 8.5") sheet.
N
0
55
110
220
330
440
Feet
0
90
180
360
540
720
Meters
9


MAP LEGEND
MAP INFORMATION
Warning: Soil Map may not be valid at this scale.
Please rely on the bar scale on each map sheet for map measurements.
Soil Survey Area: Mendocino County, Western Part, California
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.
Soil Survey Area: Mendocino County, Western Part, California
Survey Area Data: Version 16, Sep 5, 2019
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.
Date(s) aerial images were photographed: May 5, 2016—Jun 3, 2019
Interstate Highways
US Routes
Local Roads
Aerial Photography

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
212	Tregoning-Cleone complex, 0 to 5 percent slopes	2.9	100.0%
Totals for Area of Interest		2.9	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

212—Tregoning-Cleone complex, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: hmpl
Elevation: 40 to 350 feet
Mean annual precipitation: 40 to 55 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 290 to 330 days
Farmland classification: Not prime farmland

Map Unit Composition

Tregoning and similar soils: 60 percent
Cleone and similar soils: 20 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tregoning

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 sands derived from sandstone

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material
A - 2 to 11 inches: sandy loam
Bg - 11 to 25 inches: sandy loam
Bhsm - 25 to 64 inches: sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: 20 to 40 inches to ortstein
Drainage class: Poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 12 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F004BL101CA - Very acidic marine terraces
Hydric soil rating: Yes

Description of Cleone

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 sands derived from sandstone

Typical profile

A - 0 to 3 inches: loamy sand
2Bt1 - 3 to 7 inches: sandy loam
2Bt2 - 7 to 13 inches: gravelly sandy loam
3Bt3 - 13 to 40 inches: sandy loam
4C - 40 to 62 inches: loamy sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 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: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F004BL101CA - Very acidic marine terraces
Hydric soil rating: No

Minor Components

Cabrillo

Percent of map unit: 4 percent
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Downslope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Heeser

Percent of map unit: 4 percent
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Blacklock

Percent of map unit: 4 percent
Landform: Marine terraces
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Harecreek

Percent of map unit: 4 percent
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Tropaquepts

Percent of map unit: 4 percent
Landform: Depressions
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

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Appendix E. Wetland Data Sheets

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

Project/Site: 33389 Pacific Way City/County: Fort Bragg/Mendocino Sampling Date: 04/09/22
Applicant/Owner: De Alba State: CA Sampling Point: SP01
Investigator(s): Teresa Spade Section, Township, Range:
Landform (hillslope, terrace, etc): terrace Local relief (concave, convex, none): none Slope (%): 0
Subregion(LRR): A Lat: N39°23.930' Long: W123°49.070' Datum: NAD 83
Soil Map Unit Name: Tregoning-Cleone Complex 0-5% Slopes NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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 X	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: *This area was determined by the septic designer to be appropriate for the location of a septic leachfield. The determination made by the septic designer strongly supports the determination of non-wetland.*

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1. *Pinus muricata*	70	Y	NI
2.			
3.			
4.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20')			
1. *Morella californica*	50	Y	FACW
2.			
3.			
4.			
5.			
	54.5	= Total Cover	
Herb Stratum (Plot size: 10')			
1. *Maianthemum dilatatum*	3	N	FAC
2. *Goodyera oblongifolia*	<1	N	FACU
3. *Holcus lanatus*	<1	N	FAC
4. *Pteridium aquilinum*	<1	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	
Woody Vine Stratum (Plot size: 10')			
1. *Lonicera involucrata*	<1	N	FAC
2. *Rubus ursinus*	<1	N	FACU
		= Total Cover	

% Bare Ground in Herb Stratum 97

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (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 X

Remarks:
Herb stratum was sparse, and there was much needle duff. Since the total herb and woody vine strata constituted less than 5% coverage, these strata were added to total cover for the shrub stratum. Due to the early spring timing, Pteridium was just emerging. It is likely that this upland species is more prominent during the peak of the growing season in June.

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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
-4 - 1								undecomposed needle duff
0 - 12	10YR 2/1	100					sandy loam	sand grains visible
12 - 20+	10YR 2/1	50	7.5 YR 4/6	50	C	M	sand	chunks partially concreted sand 2-15 cm within a matrix of sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or CoatedSand 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 X

Remarks:

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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

US Army Corps of Engineers

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

Project/Site: 33389 Pacific Way City/County: Fort Bragg/Mendocino Sampling Date: 04/09/22
Applicant/Owner: DeAlba State: CA Sampling Point: SP02
Investigator(s): Teresa Spade Section, Township, Range:
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope(%): 0
Subregion(LRR): A Lat: N39°23932' Long: W123°49.087' Datum: NAD83
Soil Map Unit Name: Tregoning-Cleone Complex 0-5% Slopes NWI classification: Upland
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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 X	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus muricata	60	Y	NI
2.			
3.			
4.			
	60 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 10)			
1. Calamagrostis nutkaensis	90	Y	FACW
2. Pteridium aquilinum	3	N	FACU
3. Latherus vestidus	1	N	NI
4. Maianthemum stellatum	1	N	FAC
5. Morella californica	1	N	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 10)			
1. Rubus ursinus	4	Y	FACU
2. Lonicera hispidula	3	N	FACU
	7 = Total Cover		

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (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 X

Remarks:
Shrub stratum is less than 5% so is included with the herb stratum.

SOIL

Sampling Point: SP02

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4								undecomposed needle duff
4-15	10YR 2/2	100					sandy loam	
15-18+	5YR 3/3	90	5YR 2.5/1	10			loamy sand	

[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 X

Remarks:

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 X Depth (inches): _____

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

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

Wetland Hydrology Present? Yes ___ No X

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

Remarks:

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

Project/Site: 33389 Pacific Way City/County: Fort Bragg/Mendocino Sampling Date: 04/09/22
Applicant/Owner: DeAlb_a State: CA Sampling Point: SP03
Investigator(s): Teresa Spade Section, Township, Range:
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): A Lat: N39°23.908' Long: W123°49.101 Datum: NAD83
Soil Map Unit Name: Tregoning-Cleone Complex 0-5% Slopes NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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 X	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30)			
1. Pinus muricata	7	Y	NI
2.			
3.			
4.			
	7 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10)			
1. Lonicera involucrata	2	N	FAC
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 10)			
1. Calamagrostis nutkaensis	40	Y	FACW
2. Stachys rigida	5	N	FACW
3. Pteridium aquilinum	<1	N	FACU
4. Holcus lanatus	5	N	FAC
5. Scoliopus bigelovii	<1	N	NI
6. Maianthemum stellatum	2	N	FAC
7. Iris douglasiana	2	N	NI
8. Viola sempervirens	<1	N	NI
9.			
10.			
11.			
	57 = Total Cover		
Woody Vine Stratum (Plot size: 10)			
1. Rubus ursinus	5	Y	FACU
2.			
	5 = Total Cover		

% Bare Ground in Herb Stratum 43

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (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 X

Remarks:
Shrub stratum is less than 5% and has been included in total cover for herb layer

SOIL

Sampling Point: SP03

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
4 - 0								partially decomposed duff
0 - 4	10YR2/1	100					sandy loam	sand grains visible
4 - 14	10YR 2/1	100					sandy loam	10 - 50 cm angular rock
14 - 18+	7.5YR3/2	80	7.5YR4/4	10	C	M	sandy clay loam	
			10YR 2/1	10	C	M		

[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 X

Remarks:

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 X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

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

Remarks:

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

Project/Site: 33389 Pacific Way City/County: Fort Bragg/Mendocino Sampling Date: 04/09/22
Applicant/Owner: DeAlb_a State: CA Sampling Point: SP04
Investigator(s): Teresa Spade Section, Township, Range:
Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): A Lat: N39°23.917' Long: W123°49.066 Datum: NAD83
Soil Map Unit Name: Tregoning-Cleone Complex 0-5% Slopes NWI classification: Upland
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? No (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 X No ____	Is the Sampled Area within a Wetland? Yes X No ____
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pinus muricata	3	N	NI
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 20)			
1. Lonicera involucrata	80	Y	FAC
2. Calamagrostis nutkaensis	2	N	FACW
3.			
4.			
5.			
	85	= Total Cover	
Herb Stratum (Plot size: 10)			
1. Pteridium aquilinum	2	Y	FACU
2. Holcus lanatus	2	Y	FAC
3. Myosotis discolor	2	Y	FAC
4. Stachys rigida	<1	N	FACW
5. Lathyrus vestitus	1	N	NI
6.			
7.			
8.			
9.			
10.			
11.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: 10)			
1. Rubus ursinus	3	Y	FACU
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 2

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 60 (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 X No ____

Remarks:
Tree stratum added to shrub layer total because it is less than 5% coverage. Woody vine added to herb stratum total because it is less than 5% coverage

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SOIL

Sampling Point: SP04

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
-2 - 0								partially decomposed duff
0 - 16	10YR 2/1	100					sandy loam	sand grains visible
16-18	10YR 2/1	100					loamy sand	higher sand content
18 - 20+	10YR 2/1	95	10YR 3/2	4	D	M	loamy sand	higher sand content
			5YR 4/6	1	C	M	loamy sand	soft masses

[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)
- ___ HisticEpipedon (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 X

Remarks:

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 X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

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

Remarks: *Sandy layer from 16 inches down is not saturated but is very wet. It is likely saturated during the wettest time of the year.*

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Appendix F. Reduced Buffer Analysis

Table 4. Sec. 20.496.020 ESHA-- Development Criteria.
(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.
Reduced buffer areas are being established for the twinberry scrub and wetland, salal-berry bramble, bishop pine forest, beach pine forest, pacific reedgrass meadow, and stream.
(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.
The recommended width of the buffer area is 100 feet.
Standards for determining the appropriate width of the buffer area are as follows:
(1a) 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.
Western pond turtles have been found as far as 325 feet from water. Northern red-legged frogs migrate as far as a mile or more from reproductive sites and can be found in forested areas under woody debris during the migratory period. Bumblebees nest underground in forested areas under duff and debris. Nesting birds may be present in all vegetation types on the property.
Table 4. Sec. 20.496.020 ESHA-- Development Criteria.
(1b) 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.
The site contains a residence that has been present for many years, and a public access trail is present to the south side of the property. Species that are present at the site have adapted to human presence. Constructing the residence, and use of the property as a full time residence, is expected to have a greater disturbance impact than present. Additionally, development is proposed in sensitive areas where special status wildlife may be directly impacted.
(1c) 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 project area is relatively flat. The development will result in an increase of stormwater runoff that has the potential to cause erosion impacts to the bluff edge if not properly managed.
(1d) 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 proposed development is located within the topographically flat area of the property.
Table 4. Sec. 20.496.020 ESHA-- Development Criteria.

(1e) 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.
Existing cultural features include the existing cabin, driveway, and clearing. The development, to the extent feasible, is located within the existing clearing.
(1f) 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.
Residences in the vicinity are located similarly close to the bluff edge and within the sensitive forest types.
(1g) 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 proposed development consists of a single family residence and associated development. The residence size including associated development, has been designed by the project manager to be consistent with the size of surrounding residential development. The proposed residential structure lot coverage is estimated at 4,708 square feet, not including driveway areas or septic infrastructure.
(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).
The buffer areas are measured from the nearest outside edge of the dripline of trees and other vegetation, interpreted from aerial photography.
(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:
Development would be located within the buffer area of the following sensitive resources: Bishop Pine – Monterey Pine Forest, Pacific Reedgrass Meadow, Beach Pine Forest, stream, Salal-Berry Bramble, Twinberry Scrub. Development is additionally proposed within the Bishop Pine Forest, and Pacific Reedgrass Meadow.
(4a) 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.
Tree and other vegetation removal will need to occur to accommodate the septic system development and residential development footprint. An invasive species removal and special status habitat management plan is recommended to ensure the project impacts do not result in an overall detriment to the natural environment.
(4b) Structures will be allowed within the buffer area only if there is no other feasible site available on the parcel.
The WC Plan project manager indicates that the septic system can only be placed in the proposed location in the bishop pine forest as no other adequate location is feasible on the site. The WC Plan project manager indicates that the development by necessity must be located within the building envelope previously designated for the site, and that it is financially infeasible to relocate the building envelope. The WC Plan project manager has determined the size of the proposed development to be consistent with surrounding residential development.
(4c) 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 drainage, 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 project has been determined by the project manager to be located in the only feasible locations including the existing building envelope, and the only feasible location for the septic system.
(4d) 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.

With avoidance and restoration measures recommended in the Natural Resources Study, the project is expected to result in overall beneficial impacts to the habitats at the site.
(4e) 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.
There is no other feasible less impacting location as discussed above. Mitigation measures are included as discussed in Section 5.1 of this report.
(4f) 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.
Minimization measures are included in Section 5.1 of this report to assure that impervious surface, vegetation removal, bare soil, noise, dust, artificial light, nutrient runoff, air pollution, human intrusion into wetlands, and landform alteration are minimized.
(4g) 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 or wetland vegetation will be lost.
(4h) Aboveground structures shall allow peak surface water flows from a one hundred (100) year flood to pass with no significant impediment.
The project is not located in a 100 year flood zone.
(4i) Hydraulic capacity, subsurface flow patterns, biological diversity, and/or biological or hydrological processes, either terrestrial or aquatic, shall be protected.
With the recommended mitigation measures included in the natural resources study, all hydrology and biologic processes are expected to be protected, maintained, or adequately restored or replaced.
(4j) Priority for drainage conveyance from a development site shall be through the natural stream environment zones, if any exist, in the development area. In the drainage 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 drainage 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 proposed project does not disrupt the stream zone.
(4k) 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 drainage improvements, may be required as mitigation measures for developments adjacent to environmentally sensitive habitats. (Ord. No. 3785 (part), adopted 1991)
Mitigation measures are included to assure the project as a whole will not result in an overall increase in detrimental impacts to sensitive resources.

703 North Main Street, Fort Bragg CA 95437
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SUBMITTAL

December 13, 2023

Liam Crowley
Mendocino County Planning
and Building Services Department
860 North Bush Street
Ukiah, CA 95482

RE: Preliminary Mitigation, Management, Monitoring, and Reporting Plan for CDP_2023-0009

Owner: Jim and Denise De Alba

Site: 33389 Pacific Way
Fort Bragg, CA
APN: 017-320-51

Dear Mr. Crowley:

Enclosed, please find the Preliminary Mitigation, Management, Monitoring, and Reporting Plan for CDP_2023-0009 (De Alba).

This plan was developed per your request via email on September 6, 2023.

As Agent for this project, as with all of our projects, we respectfully request to be present during all County and Stakeholder Agency site visits; one week's advance notice will be helpful to ensure our availability.

We look forward to your review of this project.

Please let me know if you have any questions or comments.

Sincerely,

Aviv Kleinman
Special Projects Planner

Encl: per above

CC: Jim De Alba; CCC; CDFW; file

PRELIMINARY MITIGATION, MANAGEMENT, MONITORING, & REPORTING PLAN

Invasive Plant Species Removal & Bishop Pine Forest and Pacific Reedgrass Meadow Enhancement & Restoration

at

33389 Pacific Way
Fort Bragg, CA 95437
APN: 017-320-51
Mendocino County

Property Owner:
Jim & Denise De Alba
3785 Glen Haven Rd
Soquel, CA 95073

Report Prepared By:
Asa Spade - Senior Biologist
December 12, 2023

Wynn Coastal Planning & Biology
703 North Main Street, Fort Bragg CA 95437
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1.0 PROJECT SUMMARY

The subject parcel is located at 33389 Pacific Way (**Figure 1**) and is currently developed with an existing residence and sheds, and a gravel driveway. The study area is located approximately 3 miles south of Fort Bragg, CA. Located on a coastal terrace, the parcel is 3.2 acres and can be accessed by turning southwest off Highway One onto Ocean Drive and proceeding .6 miles and then turning west onto Pacific Way continuing for .3 miles. The parcel is on the south side of Pacific Way. The study area is within the California Coastal Zone as defined in Section 30103 of the California Coastal Act (CCA).

The proposed development consists of a single-family residence with typical associated development as proposed in CDP Application CDP#2023-0009.

The project area is a relatively flat coastal terrace vegetated by a mix of vegetation types including Bishop pine forest, beach pine forest, eucalyptus forest, broom patch, Pacific reedgrass meadow, purple velvetgrass – sweet vernal grass meadow, twinberry scrub, salmonberry-wax myrtle scrub, and salal-berry brambles. Wetlands have been identified on the site including a drainage to the bluff on the western side of the property, and the twinberry and salmonberry – wax myrtle scrub areas.

This Mitigation, Management, Monitoring, and Reporting Plan was created to guide the restoration, maintenance and reporting to compensate for the loss of Bishop pine forest and Pacific reedgrass meadow habitat on site, to enhance remaining Bishop pine forest habitat, and to guide avoidance of further potential impact to the Bishop pine forest and other special status resources documented or presumed to be present on the site.

2.0 BACKGROUND

Spade Natural Resources Consulting (SNRC) performed full floristic botanical survey, wildlife scoping survey, and wetland delineation at the site in 2021-2022 and produced a natural resource study dated May 7, 2022, with updates to the site map, mitigation measures, and Reduced Buffer Analysis on February 20, 2023. SNRC's report recommended an active management plan for the Bishop pine forest and removal of invasive species from the property in order to protect the sensitive vegetation alliances and habitat present from invasion, and to mitigate for the impacts of the proposed development.

On March 31, 2022, Wynn Coastal Planning & Biology (WCPB) staff biologists performed an update biological survey at the site adding an additional 2.25-person hours to the study.

SNRC reported three types of potential ESHA (**Figure 2**) within the study area according to the definitions by the California Coastal Act (CCA) and Mendocino County Local Coastal Plan (LCP):

> **Special Status Plant Community Presumed ESHAs** – Several special status plant communities were identified in the study area: **Bishop Pine Forest, beach pine forest**, **twinberry scrub**, **Pacific reedgrass meadow**, **Salmonberry – wax myrtle scrub**, and **salal – berry bramble**.
>
> **Stream ESHA**- A small ephemeral stream with bed and bank features is present on the west side of the parcel near the bluff edge.
>
> **Coastal Act Wetland Presumed ESHA** – The twinberry scrub, salmonberry - wax myrtle scrub and the ephemeral stream are presumed coastal act wetland.

Due to the extensive native natural communities on the parcel, portions of the proposed development will occur within the Bishop pine forest and Pacific reedgrass meadow habitats. The project was designed to avoid impact to wetlands and sensitive natural communities to the greatest extent possible that would still allow a reasonable use of the property with its principally permitted use. The development is proposed within the least environmentally impacting location. This plan will

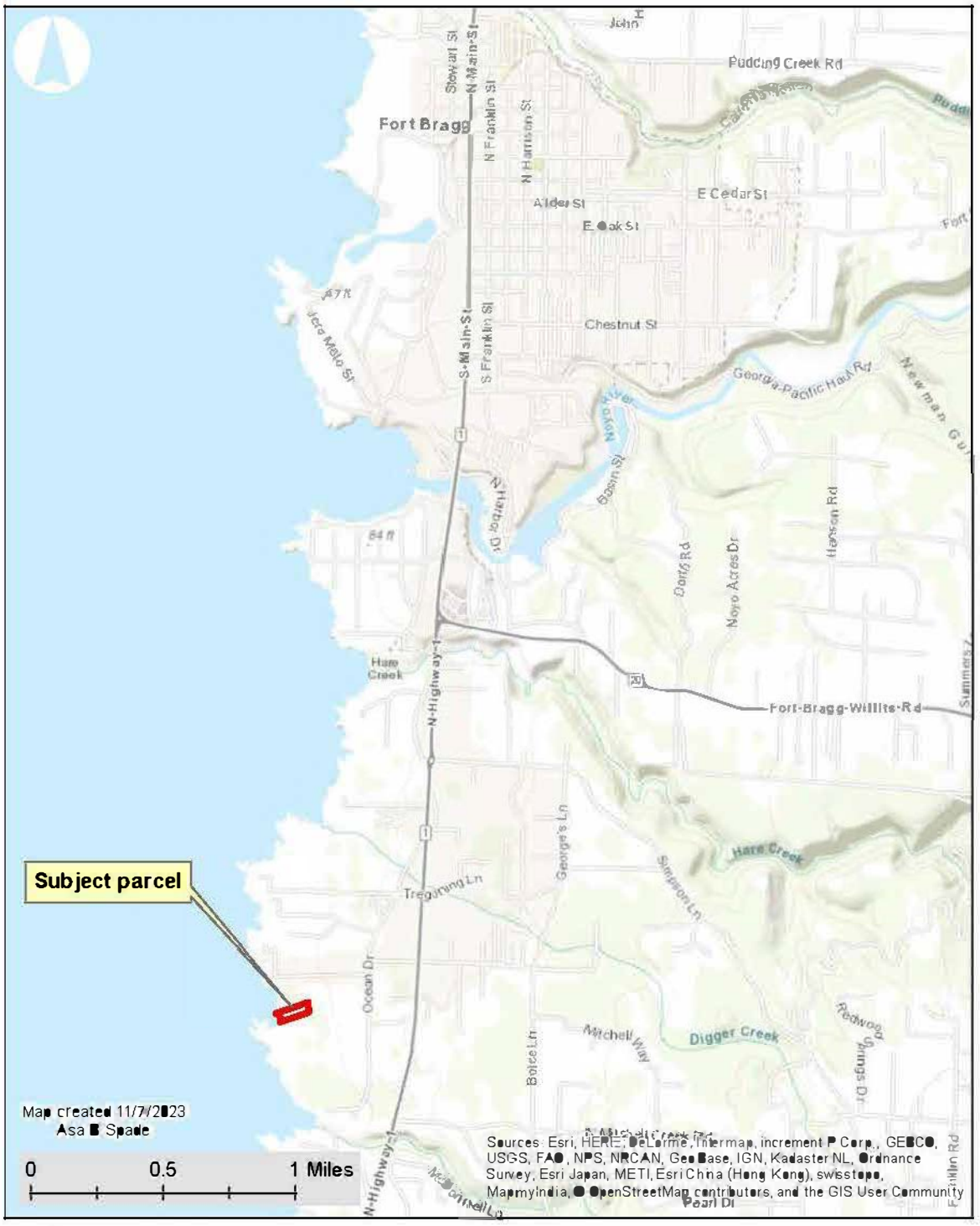
serve as guidance to improve degraded portions of the subject parcel and to improve and maintain the portions of the special status habitats that remain in order to compensate for unavoidable impacts of the proposed development.

Responsible Parties
The party responsible for making sure Mitigation, Management, Monitoring, and Reporting Plan performance goals are met is:

Jim & Denise De Alba
3785 Glen Haven Rd
Soquel, CA 95073

This Mitigation, Management, Monitoring, and Reporting Plan for Bishop Pine Forest was written by:

Asa Spade
Wynn Coastal Planning & Biology
703 North Main Street
Fort Bragg, CA 95437
707-964-2537
asa@wcplan.com



CLIENT: De Alba
APN: 017-320-51-00
ADDRESS: 33385 Pacific Way
Fort Bragg, CA

Location Map

Figure 1. Location of the subject parcel in relation to the town of Fort Bragg.

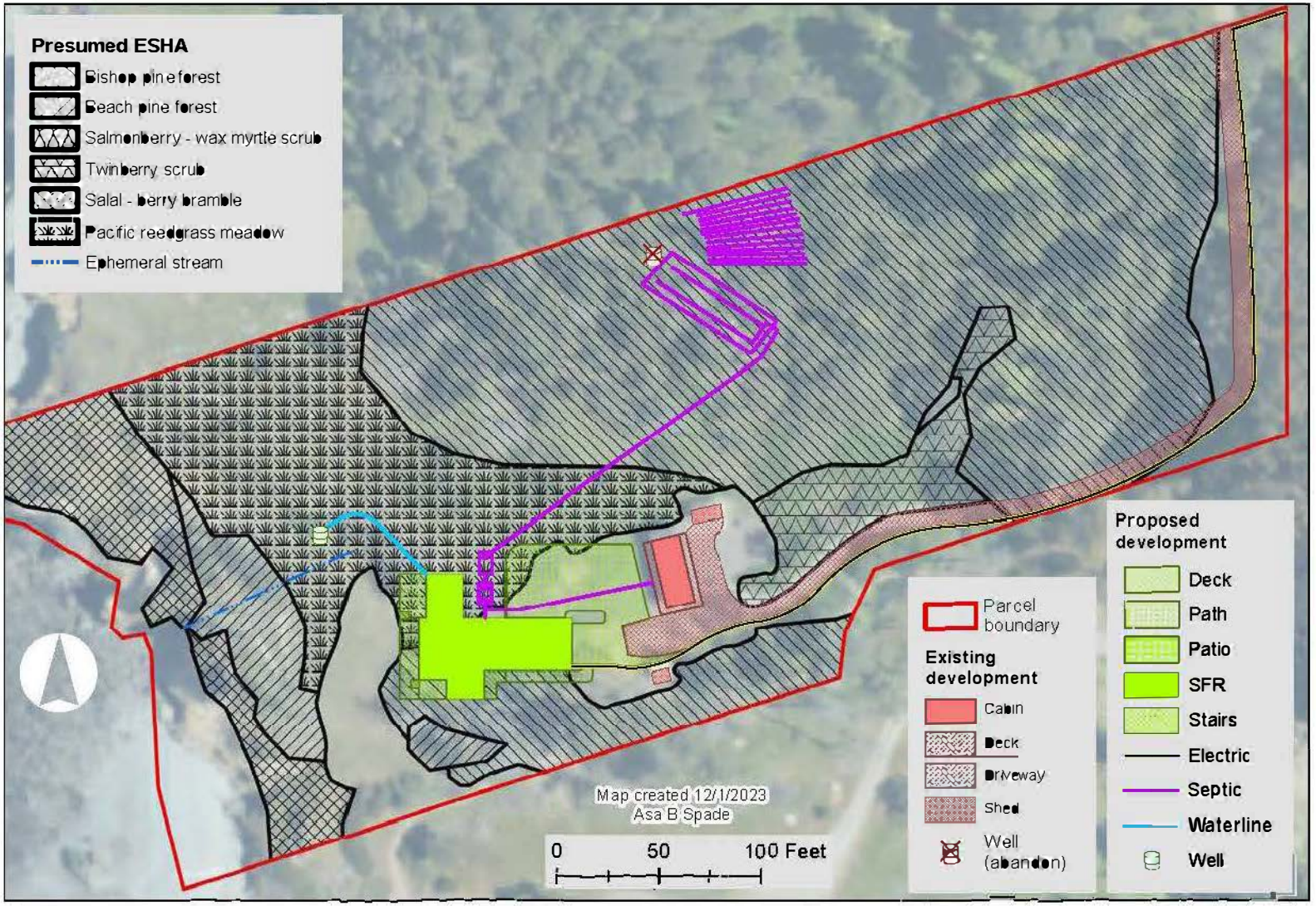


Figure 2. Presumed ESHA and development map.

3.0 PREVIOUS AND EXISTING ECOLOGICAL CONDITIONS

A driveway entrance at the northeastern corner of the parcel leads south then west to an opening with an existing cabin and sheds. East and south of the existing driveway are a copse of non-native eucalyptus trees (**Figure 3**) and a patch of non-native Scotch Broom (**Figure 4**). The majority of the eucalyptus and Scotch broom is off site but spills over onto the subject parcel. West and north of the driveway are vegetated with relatively good quality Bishop pine forest (**Figure 5**) and a stand of twinberry. There is a clearing to the west of the existing cabin where non-native grasses dominate and further west native Pacific reedgrass (**Figure 6**) and Bishop pine forest again dominates but is of lower quality than the main stand. The proposed development would occur within an area (**Figure 7**) that is primarily common velvet grass – sweet vernal grass meadow but is partly within the lower quality Bishop pine forest and the Pacific reedgrass meadow. A patch of common velvet grass – sweet vernal grass meadow (**Figure 8**) is present west of the proposed SFR location.

Bishop pine (*Pinus muricata*) is a serotinous species, meaning that to some degree regeneration is tied to a historic fire regime. While several fires occurred on the Mendocino coast in the years just after World War II, with the increase in population and development on the coast, wildfires are no longer as common an occurrence, and many forests are even aged and nearing the end of their relatively short (80 to 100 year) life cycle. Due to lack of fire, duff and understory layers in forests can be thick, which presents a challenge to seed regeneration. Disease has become an issue in recent years, with large stands of Bishop pine dying from bark beetle and other diseases common with aging. The increasing presence of non-native tree species such as Monterey pine (*Pinus radiata*) may be contributing towards loss by displacement of habitat and spread of disease. Development is further reducing habitat and fragmenting forests (Giusti n.d.). In the absence of fire, Bishop pine forests will need to be actively managed, including brush and duff reduction, identification and appropriate removal of pathogens, and protection of new recruit pine seedlings over time to create stands with diversity in age groups. It is important to note that northern populations (north of Sea Ranch) are less serotinous than southern populations and cones can occasionally open on hot days (Cope 1993).

According to *The Manual of California Vegetation*, Pacific reed grass meadows occur from San Luis Obispo County to the Oregon border on the California coast. Pacific reed grass is a native perennial bunchgrass found in wet areas, beaches, dunes, coastal woodland, inland marshes (Peterson 2012). In Mendocino County, WCPB staff often observe Pacific reed grass meadow on hill tops and beneath the canopy of Bishop pine and other forests where it receives water through fog drip. On the subject parcel, the pacific reedgrass meadow is primarily on the northwestern corner of the subject parcel. A portion of the single-family residence will be built in Pacific reedgrass meadow.

Historically coastal prairies, which include Pacific reed grass meadow and coastal tufted hairgrass meadow, were widespread and formed from evolutionary disturbances such as wind, salt spray, fire, and grazing. After European settlement, introduced management practices such as fire suppression resulted in prairie reduction due to encroachment from shrubs and trees (Ford and Hayes 2007).

The Bishop pine forest and Pacific reedgrass on site are to some degree in transition with one another. The Bishop pines create shade and collect fog which drips below them providing habitat in which the Pacific reedgrass becomes established. When Bishop pines die this opens areas where sunlight can encourage the established reedgrass to grow. A number of dead bishop pine trees are present on site with good recruitment of seedling and sapling Bishop pines within more open areas.

The proposed development would directly impact and eliminate approximately 1550ft^2 of Bishop pine forest and 1640ft^2 of Pacific reedgrass meadow, approximately 2.3% and 7.6% respectively, of the area of these plant communities within the parcel boundaries. An additional ~1260ft^2 of temporary impact would occur within the Bishop pine forest to accommodate the installation of the septic system. The septic system includes a water treatment unit and force lines that will act as a drip irrigation system within the area specified, there is no need for tree and shrub removal within the portion of the Bishop pine forest where the lines will be installed because they are flexible and can go around existing vegetation. The development has been designed with a courtyard between the existing cabin and the proposed single-family residence, which should concentrate activity within, and help to minimize impact beyond, the developed area.

A eucalyptus grove is present to the southeast of the subject parcel with ~6835ft^2 of this copse overhanging or on the subject parcel. The broom scrub patch to the south of the existing driveway includes ~850ft^2 of this community on the subject parcel. These two areas can be managed and enhanced by removing non-native species, encouraging establishment of Bishop pine seedlings and by improving and establishing Bishop pine forest understory species. The Bishop pine habitat enhancement areas total ~7685ft^2, a ratio of nearly 5:1 to the Bishop pine forest permanently eliminated by the project. The non-native grassland to the west of the proposed SFR measures ~3400ft^2 and could be vegetated with Pacific reedgrass and associated native Pacific reedgrass meadow appropriate species, a ratio of ~2:1 to the reedgrass meadow impacted. A map of the permanent impact and habitat enhancement areas is presented as **Figure 9**.



Figure 3. Eucalyptus grove at the southeast corner of the subject parcel. The majority of the eucalyptus trees are growing on the neighboring parcel but extending their branches over the subject parcel. Non-native invasive English ivy, Himalayan blackberry, and English holly were observed in the understory at this location.



Figure 4. Extensive Scotch broom along the Belinda point public access trail that runs along portions of the southern boundary of the subject parcel.



Figure 5. Stand of healthy mature Bishop pine in the northern portion of the subject parcel; a stand of twinberry can be seen in the foreground.



Figure 6. Pacific reedgrass meadow in the northwestern portion of the subject parcel.



Figure 7. Location of the proposed development. Looking west between the existing cabin and shed. Note the majority of the area is mowed non-native grassland but the development will extend westward into the area of lower quality Bishop pine forest where a few live and several dead Bishop pines are present as well as into a portion of the Pacific reedgrass meadow that can be seen on the right side of the photo beyond the deck of the cabin.



Figure 8. An area west of the proposed single-family residence dominated by non-native grasses. This area is proposed as a Pacific reedgrass habitat enhancement area in this plan.

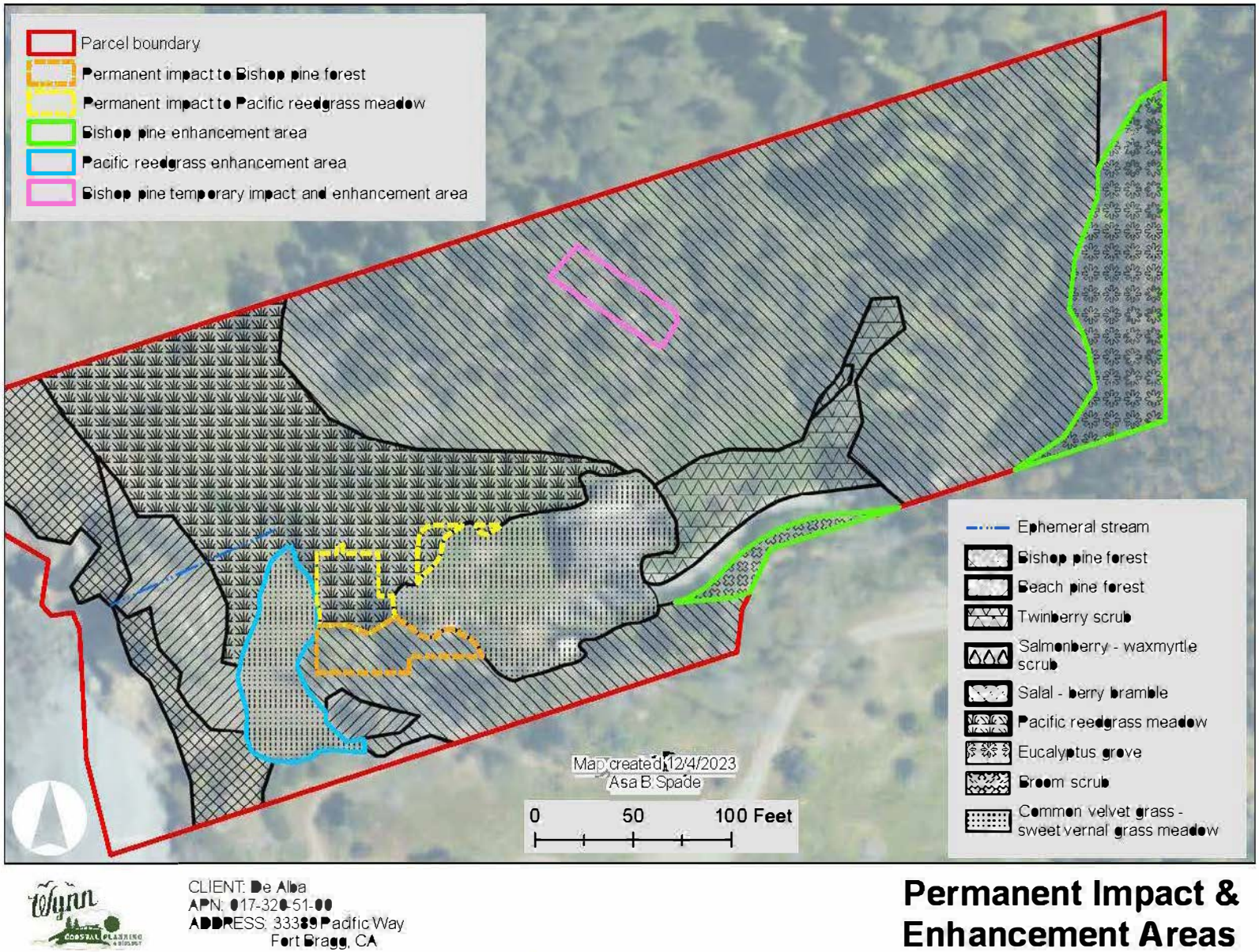


Figure 9. Areas of permanent and temporary impact to special status habitats due to proposed development and compensatory habitat enhancement areas.

4.0 RESTORATION PLAN

4.1 Basis for Design

The intent of this Mitigation, Management, Monitoring, and Reporting Plan is to provide guidance on managing and enhancing the site after the proposed development has been installed. Prior to human influence on the natural landscape, Bishop pine trees relied on wildfire to burn and replace entire stands and disperse seeds onto bare ground. Grasslands including Pacific reedgrass meadows are disturbance dependent ecosystems. Reintroducing fire onto the landscape is not a viable option; however, steps can be taken to encourage forest and grassland stand regeneration and (re)establishment in areas where non-native invasive vegetation is removed. This plan outlines performance goals and suggests methods for the property owner to help facilitate and mimic natural stand progression as close as possible without the use of landscape scale fire.

The proposed plan is performance-based, which allows for management to be carried out in an adaptive manner whereby monitoring provides feedback and shows the manager areas within which efforts are successful, as well as areas that may need a different approach in order to meet the performance goals. Monitoring and restoration should occur for at least five years and until all performance goals are met.

4.2 Mitigation Measures

Measures recommended in SNRC's Natural Resources Study are repeated below.

4.2.1 Special Status Sonoma Tree Vole

A Sonoma tree vole survey shall occur within two weeks of tree removal activities. If tree vole nests are found in trees to be removed, the California Department of Fish and Wildlife shall be immediately notified, and steps shall be taken to protect Sonoma tree voles present per California Department of Fish and Wildlife requirements. Should tree voles be found, project commencement shall not occur until California Department of Fish and Wildlife gives clearance.

4.2.2 Special Status Amphibians

Within two weeks prior to any vegetation removal or ground disturbance, project contractors will be trained by a qualified biologist in the identification of the Northern red-legged frog. Construction crews will begin each day with a visual search around all stacked or stored materials, as well as in and near the stream corridor and any pools or present water, to detect the presence of Northern red-legged frog. If a Northern red-legged frog is detected, construction or demolition crews cease all ground disturbing activity within 100 feet and will contact the California Department of Fish and Wildlife or a qualified biologist who will provide assistance. Ground disturbing activities within 100 feet will be allowed to proceed after clearance is given from CDFW and/or the qualified biologist.
If a rain event occurs during the construction period, all construction-related activities will cease for a period of 48 hours after the rain stops. Prior to resuming construction or demolition activities, trained construction crew member(s) will examine the site for the presence of Northern red-legged frog. If no Northern red-legged frogs are found, construction activities may resume.

4.2.3 Special Status Invertebrates

Ground disturbance and vegetation removal shall be limited to impacts necessary to accommodate the development.
If feasible, ground disturbance and vegetation removal activities shall occur outside of the summer season, when bumblebees are most active. If ground disturbance must occur during the summer, bumblebee surveys shall occur within two weeks prior to ground disturbance or vegetation removal, by a biologist qualified to identify special status bumblebees, and the survey results submitted to the California Department of Fish and Wildlife for approval prior to ground disturbance or vegetation removal. If special status bumblebees are found, The California Department of Fish and Wildlife will be consulted for avoidance measures and clearance.
To the extent feasible, flowering native vegetation that could provide forage for bumblebees shall be retained at the site. Although bumblebees are generalists and will visit many diverse nectar plants, preferred food sources for Western Bumblebee include but are not limited to ***Melilotus***,

Cirsium, *Trifolium*, *Centaurea*, *Chrysothamnus*, and *Eriogonum* plant species (Koch, et al, 2012). Preferred food plants for Obscure bumblebee include but are not limited to *Baccharis, Cirsium, Lupinus, Lotus, Grindelia,* and *Phacelia* species (Koch 2012).

4.2.4 Special Status Birds and Bats

The bird breeding season typically extends from February to August. Ideally, vegetation removal and project ground disturbing impacts be done in the non-breeding season between September and January. If these activities cannot be done in the non-breeding season, a qualified biologist shall perform preconstruction breeding bird surveys within 14 days of the onset of ground disturbing impacts or clearing of vegetation. If active breeding bird nests are observed, no ground disturbance activities shall occur within a minimum 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 disturbances.

As with birds, bat roost and hibernation sites can change from year to year, so pre-construction or demolition surveys are usually necessary to determine the presence or absence of bat roost sites in a given area. Pre-construction bat surveys do not need to be performed if ground disturbing work or vegetation removal is conducted between September 1 and October 31, after young have matured and prior to the bat hibernation period. However, if it is necessary to disturb potential bat roost sites between November 1 and August 31, pre-construction surveys should be conducted. Pre-construction bat surveys involve surveying trees, rock outcrops, and buildings subject to removal or demolition for evidence of bat use (guano accumulation, or acoustic or visual detections). If evidence of bat use is found, then biologists shall conduct acoustic surveys under appropriate conditions using an acoustic detector, to determine whether a site is occupied. If bats are found, a minimum 50-foot buffer should be implemented around the roost tree. Removal of roost trees should occur in September and October, or after the bats have left the roost. In summary, no impacts would be expected and therefore no preconstruction surveys would be required for the species above if vegetation removal (including standing dead trees) is scheduled for the months of September or October. The months of November through August would require a bird and/or bat survey dependent on the time of year.

4.2.5 Western Pond Turtle

A visual survey for Western Pond Turtle shall occur between May and July, in the vicinity of the stream and surrounding areas, following the USGS protocol for Western Pond Turtle surveys. If western pond turtles are found, California Department of Fish and Wildlife shall be consulted for guidance on avoidance measures.

4.2.6 Erosion Control and Ground Disturbance Minimization

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. Silt fencing and orange construction fencing shall be placed and maintained between construction/ground disturbance, and resource areas, to the extent feasible, for all areas where construction will occur within 50 feet of identified special status habitats as shown in Figure 15. Equipment use, and equipment and materials storage and staging shall not occur within the fenced protection areas. Any soil stockpiles will need to be covered or otherwise stabilized to prevent dust impacts. Any bare soil created by the construction phase of the project shall be re-vegetated with native vegetation and/or native seed mixes appropriate to the site for soil stabilization. Low Impact Development techniques such as permeable paving should be utilized to minimize storm water runoff from new impervious surfaces where practical and feasible. Storm water runoff from new impervious structures shall be engineered such that it will not result in erosion issues or convey beyond the boundaries of the property.

4.2.7 Bishop Pine Forest Active Management Plan

An active management plan shall be developed for the Bishop Pine Forest in order to provide restoration of areas impacted by development, and for the long-term health of the forest habitat.

The active management plan shall be prepared by a qualified ecologist, biologist or forester familiar with the Bishop pine forest, and approved by the Department of Fish and Wildlife, and shall include: restoration of areas impacted by forest removal to facilitate development of the residence and septic system; a regular understory management regimen to facilitate the growth of new recruits; and identification, removal, and prevention of pathogens killing Bishop pine trees and other native flora, and monitoring and reporting.

4.2.8 **Invasive Plant Species Removal and Prevention**

Invasive Plant Species – Landscaping on the parcel shall not include any invasive plants and shall consist of native plants compatible with the adjacent plant communities.

Prior to entering the site, the tires and undercarriage of heavy equipment shall be washed in order to remove any invasive plant seed that may be present.

Invasive plants with a California Invasive Plant Council rating of Low, Moderate and High are present on the property. These plants include but are not limited to English ivy (*Hedera helix*), Scotch broom (*Cytisus scoparius*), Eucalyptus (*Eucalyptus globulus*), iceplant (*Carpobrotus edulis*, *Carpobrotus chilensis*), bull thistle (*Cirsium vulgare*), and ripgut brome (*Bromus diandrus*).

As part of a restoration plan, a plan shall be developed for the removal of invasive species from the property in order to protect the sensitive vegetation alliances and habitat present from invasion, and to mitigate for the impacts of the proposed development. The plan shall include identification of the locations and extent of invasives, the timing and steps needed for removal and maintenance, and monitoring and reporting.

4.3 Performance Goals and Success Criteria

The Mitigation, Management, Monitoring, & Reporting Plan has been written to direct the removal of invasive non-native plants, the establishment of Bishop pine seedlings and understory vegetation in locations where broom scrub and Eucalyptus grove occur, the establishment of Pacific reedgrass meadow in locations west of the proposed single family residence where common velvetgrass – sweet vernal grass meadows occur, the restoration of Bishop pine forest understory where temporary impacts due to septic leach field installation occur, and the improvement of the existing Bishop pine forest and Pacific reedgrass meadow habitat present. Performance goals for mitigation, management, monitoring, and reporting are as follows:

4.3.1 Remove invasive, non-native plants throughout the parcel.

Improve habitat value by minimizing invasive, non-native plant presence. Target species for this project are English ivy (*Hedera helix*), Scotch broom (*Cytisus scoparius*), blue gum eucalyptus (*Eucalyptus globulus*), iceplant (*Carpobrotus edulis*, *Carpobrotus chilensis*), bull thistle (*Cirsium vulgare*), and ripgut brome (*Bromus diandrus*).

Success Criteria: Target non-native, invasive plants within the restoration and enhancement area will be reduced by 80-95% or greater by the end of the first year. No English ivy, Scotch broom, eucalyptus, iceplant, bull thistle or ripgut brome shall be detectable above the bluff edge within the parcel boundaries at the end of the monitoring period.

Notes: Some iceplant and other invasive species are growing below the bluff edge and may not be feasibly removed. Invasive plants are only required to be removed in areas that are safely accessible.

4.3.2 Encourage natural recruitment of Bishop pine seedlings

Encourage natural recruitment of Bishop pine seedlings through existing adult seed trees (Self and Ezell 2020). Cone pollination generally occurs from April to June. Pine seedlings need bare soil to sprout and grow (Cope 1993). New Bishop pine trees should be recruited at a rate of 5-10% every 5-10 years in order to create and maintain a varied-age stand that replaces itself with consideration to a Bishop pine's life expectancy of 80-100 years.

Success Criteria: After the first year of monitoring at least one Bishop pine seedling should be established in one or more of the Bishop pine habitat enhancement areas for each mature Bishop pine removed due to the project installation. A minimum 1:1 ratio of Bishop pine seedlings surviving to mature Bishop pine trees removed due to the project shall be maintained through the end of the monitoring period.

Note that there is a natural tendency to desire more trees established than were removed but that this may create future problems including overcrowding that limits growth of trees adjacent to one another and increased risk of shared disease pathogens. Establishment of additional seedlings may be desirable to ensure that at least a 1:1 ratio of trees survive but thinning of overcrowded trees may become necessary.

4.3.3 Reestablish native Bishop pine understory within the Bishop pine habitat enhancement areas.

Reestablish native understory plants appropriate to Bishop pine forest. Any introduced plantings shall be locally sourced.

Success Criteria: After the first year of monitoring, relative cover of native plants (vs non-native plant cover) in the shrub and herbaceous strata should be >10% and increase by 10-20% yearly until the goal of ≥77% within the restoration area is reached by the end of the monitoring period.

The Manual of California Vegetation describes Bishop pine forest shrub layers as ranging from sparse [1%-10%] to continuous [>66%] and herbaceous layer from sparse to abundant.

Success Criteria: After the first year of monitoring, absolute cover within the shrub layer should be >2% and increase by 2-10% yearly until the goal of ≥33% within the habitat enhancement area is reached by the end of the monitoring period.

4.3.4 Establish Pacific reedgrass meadow within the Pacific reedgrass habitat enhancement area

Significantly reduce non-native grass and forb species within the Pacific reedgrass habitat enhancement area and establish Pacific reedgrass and associated native herbaceous layer plants compatible with Pacific reedgrass meadow.

Success Criteria: After the first year of monitoring, relative cover of native plants (vs non-native plant cover) in the herbaceous strata should be >10% and increase by 10-20% yearly until the goal of ≥77% within the restoration area is reached by the end of the monitoring period.

The Manual of California Vegetation describes Pacific reedgrass meadow as "dominated by Pacific reedgrass or co-dominated by Pacific reedgrass and other species such as *Anthoxanthum odoratum*, *Artemisia suksdorfii*, *Elymus glaucus*, *Festuca arundinacea*, *Festuca rubra*, *Heracleum maximum*, *Holcus lanatus* and *Pteridium aquilinum* and with cover in the herbaceous layer ranging from open (having less than 33% absolute cover.) to intermittent (33% to 66% absolute cover)". Note that *Anthoxanthum odoratum*, *Festuca arundinacea*, and *Holcus lanatus* are non-native invasive plants and not desirable despite being listed in *The Manual's* description of the community.

Success Criteria: After the first year of monitoring, absolute cover of native plants within the herbaceous layer should be >10% and increase by 5-20% yearly until the goal of ≥66% within the Pacific reedgrass habitat enhancement area is reached by the end of the monitoring period.

4.3.5 Keep fuel load at a safe level.

Within the Bishop pine forest habitat enhancement areas: Retain no more than three fallen trees or standing snags per acre. Trees, shrubs, and other vegetation should meet current standards for CAL FIRE defensible space, based on distance to constructed buildings. Current standards for maintaining defensible space are as follows:

0 to 30 Feet from Structures:

- Remove all dead plants, grass and weeds.
- Remove dead or dry leaves and pine needles from your yard, roof and rain gutters.
- Keep tree branches 10 feet away from your chimney and other trees

30 to 100 Feet from Structures:

- Cut or mow annual grass down to a maximum height of 4 inches.
- Create horizontal spacing between shrubs and trees. Create horizontal and vertical spacing between plants, the amount of spacing will depend on how steep the slope is and the size of the plants.
- Create vertical spacing between grass, shrubs and trees. Large trees do not have to be cut and removed as long as all of the plants beneath them are removed. This eliminates a vertical "fire ladder." Minimum vertical clearance beneath large trees should be 6ft.

4.3.6 **Prevent pathogen outbreaks.**

Check trees and vegetation on at least an annual basis and consult with the UC Forest Advisor or the project biologist as necessary if pathogens are suspected. Record findings in annual reports.

4.3.7 **Monitoring**

The monitoring period shall begin when construction of the proposed project is complete. The monitoring period shall run for a minimum of five years. Failure to meet and maintain Success Criteria by the end of the monitoring period will result in the requirement of one or more additional years of restoration/management and monitoring, until Success Criteria are met.

4.3.8 **Reporting**

Produce a yearly record of management activities and site performance and submit this information to the planning department on a yearly basis for the duration of the restoration project. Photo points shall be established depicting a view across each portion of the habitat enhancement areas. The annual report shall include qualitative and quantitative data regarding each of the performance criteria outlined above including: number of Bishop pine trees removed for the project; number of Bishop pine seedlings recruited within each of the 3 Bishop pine habitat enhancement areas; relative cover of native vs. non-native plant cover in each of the 3 Bishop pine habitat enhancement areas' shrub and herbaceous layers; absolute cover within the shrub and herbaceous layers in each of the 3 Bishop pine habitat enhancement areas, relative cover of native vs. non-native plant cover in the Pacific reedgrass habitat enhancement area, absolute cover of native plants within the Pacific reedgrass enhancement area. The report should include discussion about which success criteria are, and are not, on track and provide suggestions for adaptive management to achieve the success criteria.

5.0 IMPLEMENTATION

Suggested implementation procedures for the project are outlined below. Completion of these procedures is a means and not an end; other ways to meet the goals and performance criteria outlined above may be utilized. Some adaptive management based on results is appropriate and expected. Conditions at the site, weather, grass, shrub, and sapling performance will all inform management decisions. Nesting bird, roosting bat, and Sonoma tree vole surveys and contractor training shall be completed within the 14 days prior to the beginning of vegetation removal necessary for the construction.

5.1 INVASIVE PLANT REMOVAL

In preparation for construction of the septic system and single-family residence some Bishop pine trees, Bishop pine forest understory vegetation, and Pacific reedgrass meadow vegetation will need to be removed. The project has been designed to avoid native tree removal to the greatest extent feasible; however, limited appropriate soils for a septic system on the parcel and wildfire defensible space guidelines necessitates tree removal. Non-native trees and shrubs should be removed within the Bishop pine habitat enhancement areas and Pacific reedgrass habitat enhancement area, which includes the portion of the eucalyptus grove on the eastern end of the parcel, the broom scrub area south of the driveway, and the common velvet grass – sweet vernal grass meadow west of the proposed single-family residence. Location of invasive non-native plants identified by WCPB in December of 2023 are mapped in **Figure 10**. If any new non-native invasive plants have been accidentally introduced during construction activities, those plants will also be removed to the greatest extent feasible. If resprouting or other forms of invasive persistence become a problem, the UC Forest Advisor or project biologist should be consulted to provide the currently accepted low impact management technique for removal of the species of issue.

Within the habitat enhancement area, effort should be made to eliminate invasive non-native species for which there is a realistic expectation that their elimination would be possible. Many invasive plant species can easily re-root if left in contact with soil. Plants pulled should therefore be removed from the site in a legal manner, such as placing in garbage service green bins or burned under authorization of a permit and during the appropriate time of year. Additional information and management techniques can be found at the Invasipedia! Page of the Bugwoodwiki website (https://wiki.bugwood.org/Invasipedia) (Bugwoodwiki 2022), in the book *Invasive Plants of California's Wildlands* (Bossard 2000) and in the book *Weed Control in Natural Areas in the Western United States* (DiTomaso and Kyser et al. 2013) and are summarized below.

All **Scotch broom** (*Cytisus scoparius*) (**Figure 4**) shall be removed from the habitat enhancement areas. Scotch broom quickly displaces native vegetation in open areas and is toxic to humans and other animals. Scotch broom should be dug out or removed with a weed wrench, removing as much of the root as possible, ideally from July through September when the plants are drought-stressed. Brush cutters may be used to cut back larger infestations; however, the weed will grow back if the roots are not removed (Hulting et al 2008). Herbicides that could kill or affect the ability of native plants to become established in the habitat enhancement areas should not be used. Scotch broom produces many seeds that can last for years in the seed bank. When all Scotch broom plants in an area have been removed the area should be watered to encourage germination of seeds at that location. Seedlings can then be removed when they are identifiable. The Scotch broom patch on the subject parcel is a small part of a larger patch along the Belinda Point public access trail. It may be very difficult to eliminate the plants on the subject parcel without cooperation from neighboring landowners and managers. The establishment of native vegetation in the enhancement area will be an important part of eliminating the Scotch broom as well established plants can hopefully outcompete the broom over time.

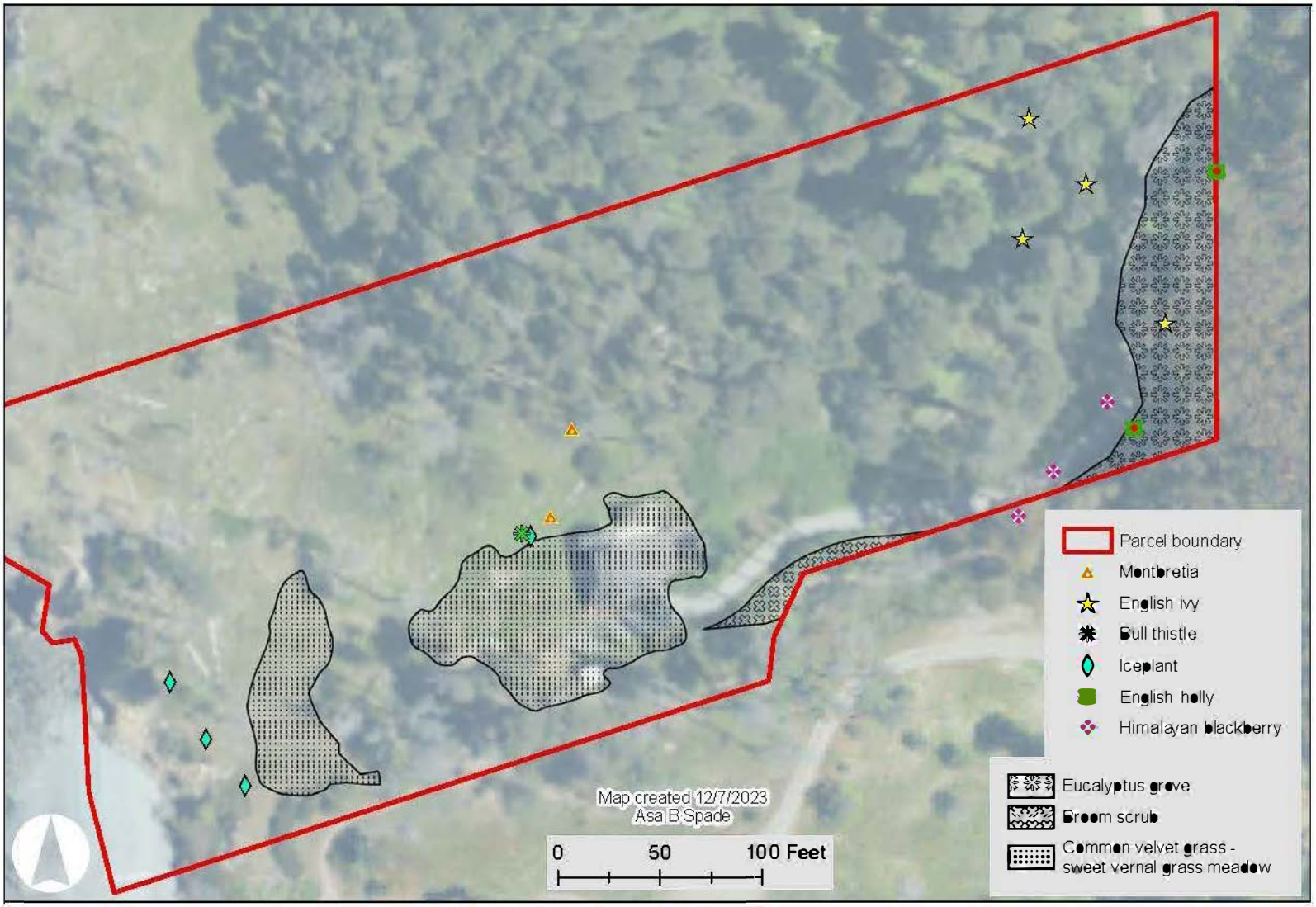


Figure 10. Locations where invasive plants were noted during a December 2023 site visit by WCPB personnel.

Himalayan blackberry (Rubus armeniacus) **(Figure 11)** is a perennial shrub that grows as a spiny woody vine. Mechanical removal or burning may be the most effective ways of removing the mature plants. Subsequent treatment with herbicides should be conducted cautiously for two reasons: (1) it often grows in riparian areas and the herbicide may be distributed to unforeseen locations by running water, and (2) some herbicides promote vegetative growth from lateral roots. (Bugwoodwiki 2022). Mowing with a brush cutter or hand removal and burning small piles of vegetation will reduce biomass but cut stems are likely to resprout and will need to be treated with spot application of herbicide in a manner that does not affect surrounding native vegetation or dug out.



Figure 11. Himalayan blackberry has stems that are star shaped in cross section. These ribs along the stem allow the stems to arch up over other vegetation like this plant at the project site. Native California blackberry is present at the site, has stems that are round in cross section and generally has a more prostrate growth habit.

English ivy (*Hedera helix)* () is an evergreen perennial woody vine or shrub. The best method for controlling through manual/mechanical means may be hand removal of vines using pruners to cut the vines and then pulling the plants up from the forest floor and down from trees (Bossard 2000). The waxy leaves of English ivy are tolerant of most herbicides so application to the foliage is discouraged. Direct application of herbicide brushed onto cut stems/stumps may be effective. Remove the ivy from the area immediately to avoid re-growth, or "put on a wooden platform to dry and decompose" (Bugwodwiki 2022).



Figure 12. English ivy at the project site.

English holly (*Ilex aquifolium)* (Figure 13) is a large evergreen tree or shrub. The best way to remove is to dig out the entire root. Cutting and immediate application of herbicide to cut stem surfaces may be effective. The waxy leaves of English holly are tolerant of most herbicides so application to the foliage is discouraged.



Figure 13. English holly at the project site.

Bull thistle (*Cirsium vulgare)* () is a coarse biennial commonly found in coastal grasslands. Mechanical removal via mowing or hand cutting shortly before plants flower can be effective if plants are cut at the soil surface. (Bossard 2000). Often repeated mowing and cuttings are required as well as proper disposal of cut plants to avoid further spreading. Any physical control measure that severs the root below the soil surface is very effective (DiTomaso, Kyser et al. 2013). Bull Thistle is easily controlled with herbicides. Timing of herbicide application is important depending upon life cycle stage (Bossard 2000). Note that native thistles such as short-styled thistle (*Cirsium brevistylum*), brownie thistle (*Cirsium quercetorum*), and California swamp thistle (*Cirsium douglasii*) occur on the Mendocino coast and may be mistaken in some life stages with bull thistle. None of these native thistles were reported at this site.



Figure 14. Bull thistle at the project site.

Wild radish (*Raphanus sativus)* Wild radish are winter or summer annuals. Hand pulling, and removing most of the root system, before plants produce seed is the best method of removal. DiTomaso, Kyser et al. 2013). Maintaining competitive grasses is also a way to avoid re-growth.

Blue gum eucalyptus (*Eucalyptus globulus)* (**Figure 3**) is a tall aromatic tree in the Myrtle family. Removing Eucalyptus trees can be difficult and expensive. An effective method to control stump re-sprouting is necessary such as stump grinding and removing all evidence of trees. All underground portions of stumps must be ground to a depth of two feet. (Bossard 2000). Covering cut stumps with black plastic and sealing the edges for up to one year can also provide good control (DiTomaso, Kyser et al. 2013). The most effective control of sprouting is through application of triclopyr or glyphosate directly to the outer portion of the stump' cut surface at the time of tree felling (Bossard 2000).

Ripgut brome (*Bromus diandrus)* is a cool-season annual grass. Individual plants or small patches can be pulled by hand or hoed in early spring before seeds are ripe. Mowing is not usually recommended as plants will re-grow, however repeated mowing (every 3 weeks) can eliminate seed production in areas where herbicide application is not possible. (DiTomaso, Kyser et al. 2013).

Montbretia (*Crocosmia X crocosmiiflora)* (**Figure 15**) also known as "coppertips" is a perennial plant in the iris family. The most effective means of removal is by digging up small patches, but the corms must be removed. Corms can be moved around by gophers which cache them in new locations within their tunnels. Glyphosate is shown to have an excellent effect on removal of Montbretia. (DiTomaso, Kyser et al. 2013).



Figure 15. Montbretia at the project site.

Iceplant *(Carpobrotus edulis)* is a ground-hugging succulent perennial that roots at the nodes, has a creeping habit, and often forms deep mats covering large areas. Shallow, fibrous roots are produced at every node that is in contact with the soil. Iceplant is easily removed by hand pulling. As the plant can grow roots and shoots from any node, all live shoot segments must be removed from contact with the soil to prevent re-sprouting. (Bossard 2000). Tarping is also a method of managing iceplant, it blocks light and eventually kills the plant. (DiTomaso, Kyser et al. 2013).



Figure 16. Iceplant, in the foreground in front of shore pines, at the project site.

Legalities should be followed, and caution should be exercised if herbicides are used near the stream and wetland areas. Some herbicide products require proper training and application by licensed personnel.

There are other invasive non-native plants that are unlikely to be successfully removed; for example, common velvet grass (*Holcus lanatus*), sweet vernal grass (*Anthoxanthum odoratum*) and rattlesnake grass (*Briza maxima*). These plants can be mowed and can be removed in small areas to prepare soil for Bishop pine seeds and around native plantings. Areas where clumps of Pacific reedgrass will be planted can be covered with deep mulch such as woodchips produced on site from fallen or cut Bishop pine limbs. Fresh eucalyptus and Scotch broom materials should be avoided as eucalyptus contains allelopathic compounds that may inhibit the growth of desired native plantings and Scotch broom materials may contain long-lived seeds. Eucalyptus wood chips can be used after they are composted, or in area that are not directly adjacent to native plants.

5.2 BISHOP PINE SEEDLING RECRUITMENT AND PROTECTION

Bishop pines require bare mineral soil with needle duff or grass being maintained at less than one inch of depth over the soil. Bare soil can be created by mowing and raking in some areas and by burning small piles of vegetation in others. When the burning of piles is complete, the remaining ashes can be raked outward to reduce their depth. Pulling or digging out invasive vegetation can also provide disturbed locations for pine seeds to germinate.

New Bishop pine seedling recruits needed to meet performance goals will be protected from overcrowding, browse and mowing, and will be watered in dry conditions as necessary. Every summer (June, July or August), Bishop pine seedlings will be identified and counted; mapping seedling locations may be helpful. Seedlings can be vulnerable to a few natural predators, especially voles, pocket gophers, and deer. Protecting seedlings with wire cages can be an effective way to deter deer. Caution must be taken to keep vegetation away from the base of seedlings as it can provide hiding places for voles that may then gnaw the bases of the seedlings. If deer browsing or other wildlife damage is observed, appropriate protective measures will be taken, which may include temporary deer exclusion cages or wire fencing around the seedlings. If not caged, seedlings should at least be marked to prevent them from being weed whacked or mowed during maintenance of the property. Marking seedlings will also help with yearly monitoring. If dry weather conditions threaten the health of seedlings needed to meet performance goals, those seedlings will be watered as necessary until dry weather conditions end. It may be helpful to weed around and mulch around Bishop pine seedlings to reduce competition from surrounding vegetation. Mulch should not be so

deep as to provide refugia for voles that might damage the pines. Fresh eucalyptus wood chips should not be placed directly around pine seedlings.

Bishop pine seedlings may germinate in areas of bare soil that result from construction. In areas where these seedlings will grow to become a problem the seedlings should be moved to elsewhere in the restoration area where they are likely to thrive. It is also likely that at some point during the restoration project a number of seedlings will become established within a small area where individual plants would not have enough room to grow to full size without interfering with each other's growth. Seedlings can be moved from these densely populated areas into areas that seeds have had a more difficult time reaching and/or becoming established within. Another strategy that could be used to aid in more dispersed establishment is to place cones gathered from Bishop pine trees on or near the site into the areas further from cone bearing trees. Branches with cones that have been broken off in windstorms are one potential source for these cones. Small "teepees" (**)** of branches can be created to keep cones off the soil and allow seed to drop to bare soil beneath. Obtaining and planting bishop pine seedlings from off site is not recommended as it can introduce new pathogens and genetics that may not be the best for the site and may have unintended consequences for the future of the stand. Gathering seed on site, sowing it into pots with soil from the site, and planting the resulting seedlings out when they are very young may be an effective strategy. Seed can be obtained from closed cones gathered on site by cooking the cones in an oven at the lowest temperatures the oven can maintain. Seeds obtained in this manner can be planted in pots and/or sown directly onto areas of base soil on the site.



Figure 17. An example of a teepee built of three cone bearing branches that fell in a storm and secured at the apex with a zip-tie. The cones will naturally release seed over time or on a hot day to the bare mineral soil or burn pile ash below.

While the success criteria calls for 1:1 replacement of Bishop pines removed it may be prudent to have a greater ratio of seedling trees available and protected during portions of the enhancement effort in case some seedlings are lost and/or to have more choice in regard to locations where seedlings will be nurtured into adult trees. While it may seem like a greater than 1:1 ratio would be a better goal for the restoration/enhancement, this may not be the case. Young trees with room to grow to adult size will grow more quickly and be healthier than a larger number of crowded trees. Staggered recruitment is also more sustainable over time than all trees in an area being even aged. Even aged trees can be more vulnerable to the same environmental conditions or pathogens as their cohort which can lead to whole stand decline exemplified by many areas currently on the Mendocino Coast where Bishop pines are dying.

5.3 BISHOP PINE FOREST UNDERSTORY ENHANCEMENT AND MAINTENANCE

Healthy forest layers should include an herbaceous layer, shrub layer and canopy layer. Native plants present in the herbaceous layer should be retained and maintained to the extent feasible while allowing for small clearings to encourage natural Bishop pine regeneration. Similarly, the native plants present in the shrub layer should be retained and maintained in a well-spaced manner for fire protection purposes as well as to encourage diversity and healthy natural Bishop pine regeneration. Tanoak (*Notholithocarpus densiflorus*), a valuable native tree/shrub found within the Bishop pine forest at the site, should be retained and maintained but can be very aggressive in areas where overstory canopy is removed and no longer holds this species in check. Care should be taken that tan oak does not overgrow and outcompete Bishop pines or become too dense and compromise fire safety. The need for some removal of young tan oaks over the years should be anticipated.

It may be necessary to introduce seed and/or install plants raised in pots on or off site in order to increase the absolute cover in the shrub layer and to increase the relative cover of native plants vs. non-native plants in the shrub and herbaceous layers within the restoration area. Seed and plants introduced to the site should originate from as close to the site as possible and must be appropriate to the coastal ecotype. Non-native plants should not be planted within the habitat enhancement areas.

Generally, the best time to install new plants will be in the fall when rains begin, in order to minimize the necessity for watering and to maximize plant survival. When planting natives, a hole should be dug twice as large as the pot. All native plants installed should receive 3" of bark mulch at a minimum 1ft radius surrounding the center of the plant. Plants should be kept moist for two weeks following planting and then watered well once per week until the rainy season begins.

Table 1 is a list of appropriate native plants for the habitat present and Bishop pine forest habitat to be achieved.

Table 1. Site appropriate shrub and herbaceous plants for the Bishop pine forest habitat enhancement areas.

Scientific name	**Common name**
Frangula californica	California coffeeberry
Frangula purshiana	cascara sagrada
Garrya elliptica	coast silk tassel
Gaultheria shallon	salal
Lonicera involucrata	coast twinberry
Morella californica	wax myrtle
Rhododendron columbianum	western Labrador tea
Ribes sanguineum	pink flowering current
Rosa californica	California wild rose
Rosa nutkana	Nootka rose
Rubus parviflorus	thimbleberry
Rubus spectabilis	salmonberry
Rubus ursinus	California blackberry
Vaccinium ovatum	evergreen huckleberry
Achillea millefolium	yarrow
Anthoxanthum occidentale	vanilla grass
Bromus sitchensis var. *carinatus*	California brome
Calamagrostis nutkaensis	Pacific reedgrass
Cardamine californica	California milk maids
Claytonia perfoliata	miner's lettuce
Clintonia andrewsiana	blue bead lily
Elymus glaucus	blue wild rye
Equisetum telmateia	giant horsetail
Fragaria vesca	strawberry
Goodyear oblongifolia	rattlesnake plantain
Iris douglasiana	Douglas iris
Lathyrus vestitus	common Pacific pea
Lonicera hispidula	hairy honeysuckle
Maianthemum dilatatum	Pacific may lily
Maianthemum stellatum	starry false lily of the valley
Polypodium glycyrrhiza	licorice fern
Polystichum munitum	western sword fern
Prunella vulgaris var. *lanceolata*	lance leaf self-heal
Scoparius biegelovii	slink pod, California adder's tongue
Scrophularia californica	California bee plant
Sisyrinchium bellum	blue eyed grass
Stachys rigida	hedge nettle
Whipplea modesta	modesty
Woodwardia fimbriata	giant chain fern
Vicia gigantea	giant vetch
Viola sempervirens	redwood violet

5.1 FUEL LOAD REDUCTION

It is recommended that the area surrounding the development, including Bishop pine forest, be maintained in compliance with CAL FIRE defensible space safety clearance requirements, and vegetation management and maintenance should occur annually.

Trees, shrubs, and other vegetation should be cut, thinned, pruned and mowed to meet current standards for CAL FIRE defensible space, based on distance to neighboring buildings. Current standards for maintaining defensible space outside of the 100-foot perimeter from buildings and within continuous tree canopy are as follows:

Prune lower branches of trees to a height of six to 15 feet from the top of vegetation below (or the lower 1/3 of branches for small trees). Properties with greater fire potential such as steeper slopes

or more severe fire danger will require pruning heights in the upper end of this range.

Remove all ground fuels greater than four inches in height. Single specimens of trees or other vegetation may be kept if they are well-spaced, well-pruned, and create an overall condition that avoids the spread of fire to other vegetation or structures (CAL FIRE 2007).

Leaving some fallen trees and standing snags (~3 snags per acre) is beneficial to wildlife, such as hairy woodpeckers, and facilitates species diversity. The wider and taller the snag is the more valuable it is to wildlife. Targeted removal of dead Bishop pine trees shall be allowed as the stand declines for fuel load reduction and defensible space.

5.2 PATHOGEN SPREAD MINIMIZATION

Regular inspections of the Bishop pine forest habitat enhancement areas will occur in order to prevent the spread of disease, which can cause stand-wide tree death. The entire property will be inspected at least once a year, and observations of dying vegetation or signs of insect, fungus or other pathogen infestation will be noted, detailing the location of the observation, description of the observation, species of plant it is on, and how widespread the pathogens are. Pictures will be taken and a UC Forest Advisor, a CAL FIRE tree pathogen specialist, or another qualified tree pathogen specialist may be consulted for direction, if the project biologist is not otherwise already familiar with the pathogen and treatment and removal measures. Vegetation treatment and removal measures recommended by the advisor or specialist will be administered.

5.3 PACIFIC REEDGRASS MEADOW ESTABLISHMENT

The recommended Pacific reedgrass habitat enhancement area is west of the proposed development in an area dominated primarily by non-native grasses and forbs. WCPB recommends prepping the site by delineating and marking it, photographing the area, then tarping, solarizing or covering the area with deep mulch to smother the vegetation currently present. If tarping or solarization is used first, tarps or plastic should be removed before planting and deep mulch should be applied before planting to inhibit non-native plants between the native ones as they become established and begin to fill out the space. This site preparation can be done and will be more effective if begun as soon as possible after the project is approved.

The construction project footprint, as approved, should be delineated and marked on site. Any required temporary construction fencing, straw wattles or silt fencing should be installed at the edge of the proposed development prior to construction. Pacific reedgrass and other native plants within the footprint of the proposed development should be salvaged before or during construction (some plants can be more effectively salvaged during grading with equipment than they could be if dug out with hand tools). Clumps of native grasses within the project footprint can be dug up, placed in pots, and reserved in a shady location on the subject parcel or can be transplanted into the Pacific reedgrass habitat enhancement area or Bishop pine forest habitat enhancement areas as appropriate. Larger clumps of Pacific reedgrass and some other species can be divided into multiple smaller 'plugs' that can be grown out in pots or in situ. Plants removed should be watered and kept out of direct sun in order to keep them alive. Shade cloth over or adjacent to plants transplanted directly into the enhancement area may be appropriate.

Clumps of grasses and other native plants should be relatively evenly but 'naturally' dispersed (i.e. not in straight lines) and planted in an upright manner with their roots completely covered with soil. Mulch should be pulled back a bit from the locations where the plants are installed but should be left covering the areas between the plants while they are becoming established to help retain ground moisture and to inhibit the non-native plants and seeds below the mulch. Deep mulch too close to the plants may allow voles to eat the vegetation without being detected or exposed to their predators and should be avoided.

All plants should be watered in and should be watered regularly until they become well established and/or until fall/winter rains relieve the need for watering. Ideally the planting of native plants would occur in the fall at the beginning of the wet season rains. However, it is likely that construction will occur primarily during the dry season which may necessitate less than ideal timing for native plant

salvage.

Depending upon the coverage of plants resulting from transplanting salvaged plants, it may be necessary or desirable to multiply plants on site and/or have additional plants grown on contract (by Jughandle nursery for example) from seeds and/or divisions obtained on site. Seed of these plants should be obtained as locally as possible and should under no circumstances should seed come from a different ecotype or be substituted for different species or subspecies.

Table 2 is a list of appropriate herbaceous native plants for the habitat present and Pacific reedgrass meadow habitat to be achieved. Some trees such as Bishop pine or shore pine and shrubs such as salal or coffeeberry are appropriate at low cover.

Table 2. Site appropriate herbaceous plants for the Pacific reedgrass habitat enhancement area.

Scientific name	**Common name**
Achillea millefolium	yarrow
Anaphalis margaritacea	pearly everlasting
Angelica hendersonii	Henderson's angelica
Bromus sitchensis var. *carinatus*	California brome
Calamagrostis nutkaensis	Pacific reedgrass
Cardamine californica	California milk maids
Carex gynodynama	wonder woman sedge
Carex tumulicola	foothill sedge
Claytonia perfoliata	miner's lettuce
Danthonia californica	California oatgrass
Deschampsia caespitosa ssp. *holciformis*	coastal tufted hairgrass
Elymus glaucus	blue wild rye
Fragaria chiloensis	beach strawberry
Heracleum maximum	cow parsnip
Iris douglasiana	Douglas iris
Maianthemum dilatatum	Pacific may lily
Polystichum munitum	western sword fern
Prunella vulgaris var. *lanceolata*	lance leaf self-heal
Pteridium aquilinum var. *pubescens*	western bracken fern
Sisyrinchium bellum	blue eyed grass
Stachys rigida	hedge nettle

5.4 MONITORING & PROJECT ADAPTATION

On an annual basis, for at least five years, and until all performance goals have been met, a monitoring report will be written. The report will describe the level of effort and methods used during that monitoring period to eradicate invasive plants, improve forest health and conditions for new Bishop pine seedling recruits, keep the fuel load reduced, develop and maintain a Bishop pine forest understory, establish Pacific reedgrass meadow, and minimize disease spread. Any new invasive plant species observed or evidence of pathogen presence will be described. Pictures will be included, and a description of whether and how performance goals and criteria were met will be noted.

5.5 REPORTING

Reporting will occur on a yearly basis, and reports will be received by the County of Mendocino Planning Division by the end of each year for a minimum of five years and until all performance criteria are met.

Reports will be sent hard-copy by hand or delivery service (such as US Mail or UPS) to:

Attn: Senior Planner
County of Mendocino Planning & Building Services
120 West Fir Street
Fort Bragg, CA 95437

Reports will include the following information:

- Name and contact information of person in charge of monitoring activities, and name and contact information of reporting party.
- Color photos of the management areas at the beginning and end of the reporting period.
- A summary of any issues encountered and management steps taken during the reporting period.
- Level of effort and methods used during that monitoring period to eradicate weeds, improve forest health and conditions for new Bishop pine seedling recruits, keep the fuel load reduced, develop and maintain a Bishop pine forest understory, establish Pacific reedgrass meadow, and minimize disease spread.
- Any new invasive plant species observed or evidence of pathogen presence will be described.
- Qualitative and quantitative data for each of the performance criteria will be presented.
    - Photos across each portion of the habitat enhancement areas.
    - number of Bishop pine trees removed for the project
    - number of Bishop pine seedlings recruited within the Bishop pine forest habitat enhancement areas
    - relative cover of native vs. non-native plants in the shrub and herbaceous layers each of the Bishop pine forest habitat enhancement areas
    - absolute cover within the shrub and herbaceous layers of each of the Bishop pine forest habitat enhancement areas.
    - relative cover of native vs. non-native plant cover in the Pacific reedgrass habitat enhancement area
    - absolute cover of native plants within the Pacific reedgrass enhancement area

The report should include discussion about which success criteria are, and are not, on track and provide suggestions for adaptive management to achieve the success criteria.

6.0 SCHEDULE

Table 3 below gives us an approximate outline of when in the life of the project each component of the mitigation, management, monitoring, and reporting shall be undertaken.

Table 3. Mitigation, management, monitoring, and reporting implementation schedule.

Relevant Personnel	Action Item	Tentative Implementation Date	Description
Phase 1 – Pre and post construction			
Biologist	Establish photo points	Before construction	The evaluator shall establish photo points and take pre-construction photographs of each of the 4 habitat enhancement areas. It may be helpful if the habitat enhancement areas are delineated and marked prior to alteration.
landscaper, groundskeeper, owner	kill non-native grass	Before construction	The Pacific reedgrass habitat enhancement area can be tarped to block light, or solarized by covering with clear plastic, in order to kill and reduce the non-native grasses and forbs present in the enhancement area. Plastic should be removed before installing mulch in this area
Construction personnel, landscaper, groundskeeper	Install construction barriers	Before construction	Construction personnel, landscapers, groundskeepers, or other capable personnel shall install any straw wattles, temporary construction fencing, or silt fencing in between sensitive natural resources and the construction related impact area, if required by the special conditions.
landscaper, groundskeeper, owner	install mulch	Before transplanting	The Pacific reedgrass habitat enhancement area should be covered with deep mulch to prevent non-native plants from growing between the native plants installed
Biologist	Conduct nesting bird, roosting bat, Sonoma tree vole, bumble bee, amphibian and reptile surveys, and contractor training	Within 14 days prior to the onset of tree and vegetation removal	A qualified biologist shall conduct a nesting bird, roosting bat, bumblebee, and special status amphibian and reptile survey in all areas within 100ft of the project prior to vegetation removal if the project begins during the nesting and roosting season. If nesting birds are observed, vegetation removal activities will be postponed until nestling have left the nest. If roosting bats are observed, tree removing activities will be postponed until young bats leave the roost at the end of August. A qualified biologist will conduct Sonoma tree vole surveys adjacent to all areas where native coniferous tree removal will or may occur in association with the construction. A qualified biologist will train the landscaping personnel and/or contractors on amphibian and reptile identification and impact avoidance.
Construction personnel	Attend amphibian and reptile training	Within 14 days prior to the onset of tree and vegetation removal	Construction personnel that will be working within the project area shall attend a training session regarding sensitive resources present and the identification of special status amphibians and reptiles. At least one individual that will be present each day will be responsible for daily checks for amphibians and reptiles around the construction area, equipment, and stockpiled materials before work begins.
Biologist	Inventory trees to be removed	"Start" of the project	The biologist that will be performing annual monitoring and reporting will record the number and species of trees that will be removed from presumed ESHA to accommodate construction.
Landscapers, gardeners, groundskeepers	Salvage native plants	"Start" of the project	Pacific reedgrass and other salvageable species of native plants within the project footprint should be salvaged, planted into pots or directly into appropriate habitat enhancement areas, and maintained.
Landscapers, gardeners, groundskeepers	Remove target non-native vegetation	"Start" of the project	Before, during and/or just after construction, within the Bishop pine forest enhancement areas, landscapers, gardeners, groundskeepers, or other capable personnel will remove invasive non-native species including English ivy (*Hedera helix*), Scotch broom (*Cytisus scoparius*), blue gum eucalyptus (*Eucalyptus globulus*), iceplant (*Carpobrotus edulis, Carpobrotus chilensis*), bull thistle (*Cirsium vulgare*), and ripgut brome (*Bromus diandrus*)to encourage native diversity and natural function.
Landscapers, gardeners, groundskeepers	Install post construction erosion control	Directly after construction	Areas of bare soil resulting from construction should be seeded with native erosion control seed mix and/or covered with biodegradable erosion control materials (e.g. coconut fiber, jute, weedfree straw).

Landscapers, gardeners, groundskeepers	Prepare areas of soil for Bishop pine seeds	before, during or after construction	Within the Bishop pine restoration area rake leaf litter from areas where Bishop pine seedling establishment is desired to create areas of bare mineral soil in these locations.
Landscapers, gardeners, groundskeepers	Plant and seed native understory plants	Fall, Year 1	After areas of bare mineral soil are created within the Bishop pine forest habitat enhancement area, landscapers, gardeners, groundskeepers, or other capable personnel will seed or plant areas of the Bishop pine forest, that have sparse understory vegetation but adequate sunlight, with native Bishop pine forest understory plants, and will install salvaged Pacific reedgrass meadow plants into the Pacific reedgrass meadow habitat enhancement area. If this occurs during the dry portion of the year, watering should occur until rains have sufficiently saturated the ground. Plants should be kept moist for two weeks following planting and then watered well once per week until the rainy season begins. General guidelines for planting are listed in **Section 5.3**.
Biologist	Document efforts	Winter, Year 1	A qualified biologist will document restoration efforts through photographs and record qualitative and quantitative data for each of the success criteria.
Phase 2 – Maintenance and Documentation			
Landscapers, gardeners, groundskeepers	Maintain Bishop pine seedling	Summer, Year 2-5+	Within the Bishop pine forest habitat enhancement areas, landscaper, gardener, groundskeeper, or other capable personnel, will place protective caging around Bishop pine seedlings and saplings and remove weeds growing around seedlings. Bishop pine seedlings growing over the septic system, that could cause future safety problems, or in crowded places may need to be transplanted into the habitat enhancement areas.
Landscapers, gardeners, groundskeepers	Maintain, plant and seed native understory plants	Year 2-5+	Within the Bishop pine forest habitat enhancement areas landscapers, gardeners, groundskeepers, or other capable personnel will seed or plant native Bishop pine forest understory plants. Within the Pacific reedgrass meadow habitat enhancement area they will install appropriate native herbaceous plants. If this occurs during the dry portion of the year, watering should occur until rains have sufficiently saturated the ground. Plants should be kept moist for two weeks following planting and then watered well once per week until the rainy season begins. General guidelines for planting are listed in **Section 5.3**. This effort should be repeated at least yearly as necessary to achieve success criteria.
Biologist, forester	Inspect standing trees for pathogens	Annually, Year 2-5+	A qualified biologist or forester will inspect standing Bishop pines trees for signs and/or symptoms of pathogens. The inspector will take appropriate measures and/or consult with the UC Forest Advisor to determine appropriate management actions.
Landscapers, gardeners, groundskeepers	Maintain defensible space	Annually, Year 2-5+	Landscapers, gardeners, groundskeepers or other capable personnel will prune or thin trees and shrubs and clean out dead vegetation and trees to meet current standards for CAL FIRE defensible space.
Landscapers, gardeners, groundskeepers	Supplemental invasive removal	Annually, Year 2-5+	Landscapers, gardeners, groundskeepers or other capable personnel will remove resprouting, germinating or newly introduced invasive plants.
Biologist	Yearly monitoring	Annually, Year 2-5+	A qualified biologist will document restoration efforts through photographs and record qualitative and quantitative data for each of the success criteria.
Biologist	Yearly reporting	Winter, Year 2-5+	Provide all documentation recorded in annual monitoring to the appropriate authority as discussed in the reporting section below.
Biologist	Final Report	Winter, Year 5+	Write and submit a final report when success criteria have been achieved and maintained. If success criteria have not been achieved at the end of the 5th year then the restoration efforts shall continue until these criteria are met. If it becomes apparent that some criteria will not be met then coordination with County Planning shall occur to determine how criteria can be met and/or to re-assess what goals must be achieved for the restoration to be considered successful.

7.0 REFERENCES

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8.0 CONTRIBUTING STAFF

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 250 coastal development projects in Mendocino County.