

**BIOLOGICAL SITE ASSESSMENT
SINGLE-FAMILY RESIDENCE AT 22 BEACH DRIVE
SAN RAFAEL, MARIN COUNTY, CALIFORNIA**

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Huffman Broadway Group, Inc., is a California Certified
Small Business and a Veteran-Owned Small Business.



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This report should be cited as: Huffman-Broadway Group, Inc. 2022. *Biological Site Assessment Single Family Residence at 22 Beach Drive San Rafael, Marin County, California*. September.

1.0 INTRODUCTION

Huffman-Broadway Group, Inc. (HBG) has completed a Biological Site Assessment report related to a proposed remodel of a single-family home at 22 Beach Drive near San Rafael in Marin County, California. The parcel is a 0.34-acre parcel at Assessor Parcel Number (APN) 186-142-26. This evaluation complies with requirements of Marin County guidelines as spelled out in the document "Preparation of Biological Site Assessments."

As stated in the Marin County guidelines for preparation of Biological Site Assessments, the objective of this study was to (1) determine whether there are any sensitive biological resources such as wetlands, streams, or habitats for special status species in proximity to a proposed project; (2) accurately map any biological constraints on a site plan for the project; and (3) to determine whether the proposed project would result in potentially significant adverse biological impacts pursuant to the California Environmental Quality Act (CEQA).

Our analysis included: (1) a review of the habitat characteristics of the site and species of plants and animals expected to utilize the site; (2) review of the California Natural Diversity Data Base (CNDDDB) to determine if any populations of endangered, threatened, or rare species have occurred historically or are currently known to exist in the project vicinity; (3) field surveys of the site by HBG biologists, and (4) an evaluation of whether the proposed project has the potential to result in impacts to sensitive habitats or special status species.

Field studies by HBG included visits to the site by HBG permit specialist Robert Perrera and Senior Environmental Scientist Gary Deghi on April 11, 2022. The survey included observations of the composition and distribution of plant species, wildlife observations, identification of sensitive habitats and a comparison of site characteristics for similarity to sites known to support special status species within the area. A managed tidal marsh, referred to as the "Beach Drive Wetlands" by the Point San Pedro Road Coalition, is located across Beach Drive from the project site, and a tidal channel from San Francisco Bay that separates the project site from the Loch Lomond Marina is adjacent to the west edge of the site. The field visit was also specifically intended to determine the limits of wetland (salt marsh) found in the Beach Drive Wetlands and along the adjacent tidal channel to determine the location of the 100-foot wetland setbacks from these features as determined by the Marin Countywide Plan.

As a result of this Biological Site Assessment, we find that construction of the residence, as planned, could occur without causing significant biological impacts as long as the applicant follows Best Management Practices, as planned, to control erosion and sedimentation.

2.0 PROPOSED PROJECT

The subject parcel is a 14,900 square foot (0.34-acre) parcel (Marin County Assessor's Parcel No. 186-142-26) with an existing single family home, garage, landscaped areas, floating boat dock, and rip-rap projection located at 22 Beach Drive within the Bayside Acres neighborhood near San Rafael, Marin County, California. The property can be accessed from Point San Pedro Road and Beach Drive. The location of the Project Site and an aerial image is shown in Figure 1.

As seen in the aerial image of Figure 1, the property is bordered by San Francisco Bay and a tidal channel to the south, the tidal channel from San Francisco Bay and the Loch Lomond Marina beyond the tidal channel to the west, Beach Drive and salt marsh within the Beach Drive Wetlands beyond Beach Drive to the east, and the tidal channel and Beach Drive to the north. The subject property is developed with a single story, 1,768.75 square foot, 2-bedroom, 2-bath single-family house with a 380 square-foot detached garage and 371.5 square-foot deck patio. There is also a small floating boat dock extending into the tidal channel. According to the property, the existing house was moved on a barge from Treasure Island to its current location in 1914.

The proposed Project includes remodeling an existing single level, single family home within the footprint of the existing residence. The remodeled residence will have 2,623 square-feet of living space in two stories and a 977.75 square foot deck patio. The garage will remain as a 380 square-foot detached garage. Construction will entail grading at the building footprint, foundation work, and utility installation with connection to existing services. No work is proposed related to the boat dock or rip-rap shoreline protection. A site plan for development of the single-family home, prepared by G Design and dated March 21, 2022, is shown in Figure 2.

3.0 REGULATORY BACKGROUND

The following is a description of federal, state, and local environmental laws and policies that are relevant to the California Environmental Quality Act (CEQA) review process.

3.1 Federal Regulations

Clean Water Act-Section 404

The U.S. Army Corps of Engineers (Corps) regulates discharges of dredged or fill material into Waters of the United States under Section 404 of the Clean Water Act (CWA). “Discharge of fill material” is defined as the addition of fill material into Waters of the U.S., including but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes and sub-aqueous utility lines (33 C.F.R. §328.2(f)). In addition, Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into Waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

The U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency (US EPA) are responsible for implementing the Section 404 program. Section 404(a) authorizes the Corps to issue permits, after notice and opportunity for comment, for discharges of dredged or fill material into waters of United States (WOTUS). Section 404(b) requires that the Corps issue permits in compliance with EPA guidelines, which are known as the Section 404(b)(1) Guidelines. Specifically, the Section 404(b) (1) guidelines require that the Corps only authorize the “least environmentally damaging practicable alternative” (LEDPA) and include all practicable measures to avoid and minimize impacts

to the aquatic ecosystem. The guidelines also prohibit discharges that would cause significant degradation of the aquatic environment or violate state water quality standards.

Waters of the U.S. include both wetlands and “other waters of the U.S.” Wetlands and other waters of the U.S. are described by US EPA and Corps regulations (40 CFR § 230.3(s) and 33 CFR § 328.3(a), respectively). US EPA and the Corps define wetlands as “...those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (US EPA regulations at 40 CFR § 230.3(t); Corps’ regulations at 33 CFR § 328.3(b)). Both natural and manmade wetlands and other waters (not vegetated by a dominance of rooted emergent vegetation) are subject to regulation. Waters of the U.S. include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows.

The geographic extent of wetlands is defined by the collective presence of a dominance of wetland vegetation, wetland hydrology conditions, and wetland soil conditions as determined following the Corps’ 1987 Wetlands Delineation Manual (1987 Manual); the Corps’ 2008 Regional Supplement to Corps of Engineers Wetland Delineation Manual: Arid West, Version 2.0 (Arid West Regional Supplement); and supporting guidance documents. The geographic extent of other waters of the U.S. is defined by an ordinary high water mark (OHWM) in non-tidal waters (33 CFR. §328.3(e)) and by the High Tide Line within tidal waters (33 CFR. §328.3(d)). The OHWM is defined by the Corps as “that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” (33 C.F.R. §328.3(e)). Tidal waters are also under the jurisdiction of the Corps. The landward limits of jurisdiction in tidal waters extend to the high tide line...“or, when adjacent non-tidal waters of the United States are present, to the limits of jurisdiction for such non-tidal waters” (33 C.F.R. §328.4(b)). The High Tide Line is further defined to include the line reached by spring high tides and other high tides that occur with periodic frequency (33 C.F.R. §328.3(d)).

SWANCC and Rapanos. In the U.S. Supreme Court decision *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers (SWANCC)*, No. 99-1178 (2001), some isolated wetlands may be excluded from the Corps’ Section 404 jurisdiction because they are (1) non-tidal, (2) non-navigable, (3) not hydrologically connected to navigable waters or adjacent to such waters, and (4) not subject to foreign or interstate commerce. Subsequent to SWANCC, the U.S. Supreme Court decided on *Rapanos v. United States* and *Carabell v. United States*, 126 U.S. 2208 (2006) (herein referred to as Rapanos) which resulted in 2007, guidance was given to US EPA regions and Corps districts to implement the Supreme Court’s decision which addresses the jurisdiction over waters of the U.S. under the Clean Water Act. The Rapanos guidance requires the Corps to conduct detailed analysis of the functions and values of wetlands and other waters of the U.S. potentially onsite and in some cases offsite, to determine if there is a nexus to traditional navigable waters and to evaluate the significance of the nexus to the traditional navigable water. Neither the Court nor the recently-issued guidance draw a clear line with respect to the geographic reach of jurisdiction, particularly in

drainages where flows are ephemeral and where wetlands are adjacent to but not directly abutting relatively permanent water.

National Wetland Protection Rule. In 2020, the Trump Administration obtained approval of the Navigable Waters Protection Rule (NWPR) that altered the reach of the nation's Clean Water Act. The NWPR has four categories of jurisdictional waters and twelve categories of excluded waters/features. There is no standalone interstate waters category and no case-specific significant nexus analysis. Key changes were made for defining tributary, adjacent wetland, ditches, lakes, ponds, and impoundments. New definitions for defining typical year versus normal, perennial, intermittent, ephemeral, snowpack, and ditches. No change was made to the definition of wetlands or the methodology for defining wetlands. Under the NWPR, WOTUS includes 1) territorial seas and traditional navigable waters; 2) tributaries; 3) lakes and ponds, and impoundments of jurisdictional waters; and 4) adjacent wetlands.

Clean Water Act-NPDES Requirements

In 1972, the Clean Water Act was amended to provide that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with a National Pollution Discharge Elimination System (NPDES) permit. The 1987 amendments established a framework for regulating municipal, industrial, and construction-related storm water discharges under the NPDES Program. On November 16, 1990, the US EPA published final regulations that establish storm water permit application requirements for specified categories of industries. The regulations provide that discharges of storm water from construction projects that encompass one or more acres of soil disturbance are effectively prohibited unless the discharge is in compliance with an NPDES Permit.

The California State Water Resource Control Board has developed a general construction storm water permit to implement the requirements for the federal NPDES permit. The permit requires submittal of a Notice of Intent to comply, fees, and the implementation of a Storm Water Pollution Prevention Plan that specifies Best Management Practices (BMPs) that will prevent construction pollutants from entering storm water and keep products of erosion from migrating off-site into downstream receiving waters. The Construction General Permit includes post-construction requirements that site design provide no increase in overall site runoff or the concentration of drainage pollutants, and requires implementation of Low Impact Development ("LID") design features. The Construction General Permit is implemented and enforced by California's nine Regional Water Quality Control Boards.

The State Regional Water Quality Control Boards have also adopted requirements for NPDES storm water permits for medium and large municipalities, and the State Water Resources Control Board has adopted a General Permit for the discharge of storm water from small municipal storm sewer systems. This General Permit requires projects to develop and implement a post-construction Storm Water Management Plan (SWMP) to reduce the discharge of pollutants to the maximum extent practicable.

Federal Endangered Species Act

The United States Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. The FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend. The FESA establishes an official listing process for plants and animals considered to be in danger of extinction, requires development of specific plans of action for the recovery of listed species, and restricts activities perceived to harm or kill listed species or affect critical habitat (16 USC 1532, 1536).

The FESA prohibits the “take” of endangered or threatened wildlife species. “Take” is defined as harassing, harming (including significantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species, or any attempt to engage in such conduct (16 USC 1532, 50 CFR 17.3) Taking can result in civil or criminal penalties. Federal regulation 50 CFR 17.3 further defines the term “harm” in the take definition to mean any act that actually kills or injures a federally listed species, including significant habitat modification or degradation. Additionally, FESA prohibits the destruction or adverse modification of designated critical habitat. In the Service’s regulations at 50 CFR 402.2, destruction or adverse modification is defined as a “direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species.

The ESA also requires federal agencies to ensure that their actions do not jeopardize the continued existence of listed species or adversely modify critical habitat (16 USC 1536). Therefore, the ESA is invoked when the property contains a federally listed threatened or endangered species that may be affected by a permit decision. In the event that listed species are involved and a Corps permit is required for impacts to jurisdictional waters, the Corps must initiate consultation with USFWS (or the National Marine Fisheries Service, NMFS) pursuant to Section 7 of the ESA (16 USC 1536; 40 CFR § 402). If formal consultation is required, USFWS or NMFS will issue a biological opinion stating whether the permit action is likely to jeopardize the continued existence of the listed species, recommending reasonable and prudent measures to ensure the continued existence of the species, establishing terms and conditions under which the project may proceed, and authorizing incidental take of the species.

For discretionary permit actions by non-federal entities, Section 10 of the ESA provides a mechanism for obtaining take authorization through submittal and approval of a Habitat Conservation Plan that details species impacts, measures to minimize or mitigate such impacts, and funding mechanisms to implement mitigation requirements.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties devised to protect migratory birds and any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. The regulations governing migratory bird permits are in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. Most bird species within California fall under the provisions of

the Act. Excluded species include nonnative species such as house sparrow, starling, and ring-necked pheasant and native game species such as quail.

On December 22, 2017, the U.S. Department of Interior's Office of the Solicitor issued Memorandum M-37050, which states an interpretation that the Migratory Bird Treaty Act does not prohibit the accidental or "incidental" taking or killing of migratory birds. In response to the Trump Administration's attempted changes to the MBTA, eight states, including California, filed suit in September of 2018, arguing that the new interpretation inappropriately narrows the MBTA and should be vacated. On August 11, 2020, the Southern District of New York ruled in favor of the long-standing interpretation of the MBTA to protect migratory birds, reinstating the historical ban on incidental take. Just days before leaving office, the Trump Administration finalized its pullback of MBTA regulations, despite the ruling of the federal court, and the elimination of protections pursuant to the MBTA went into effect in January of 2021. On his first day in office, new President Joe Biden placed the Trump Administration's changes to the MBTA on hold, pending further review. The Biden Administration announced the repeal of the January 2021 changes and the reinstatement of protections for migratory birds in December of 2021.

Fish and Wildlife Coordination Act

The USFWS also has responsibility for project review under the Fish and Wildlife Coordination Act. This statute requires that all federal agencies consult with USFWS, NMFS, and the state's wildlife agency (California Department of Fish and Wildlife, CDFW) for activities that affect, control, or modify streams and other water bodies. Under the authority of the Fish and Wildlife Coordination Act, USFWS, NMFS, and CDFW review applications for permits issued under Section 404 and provide comments to the Corps about potential environmental impacts.

3.2 State Regulations

Section 401 of the Federal Clean Water Act/Porter Cologne Water Quality Act

Pursuant to section 401 of the federal Clean Water Act, projects that require a Corps permit for the discharge of dredge or fill material must obtain water quality certification that confirms a project complies with state water quality standards before the Corps permit is valid. State water quality is regulated/administered by the State Water Resources Control Board and its nine Regional Water Quality Control Boards. A water quality certification from a RWQCB must be consistent with not only the Clean Water Act, but with the California Environmental Quality Act (CEQA), the California Endangered Species Act (CESA), and the SWRCB's requirement to protect beneficial uses of waters of the State.

The State also maintains independent regulatory authority over the placement of waste, including fill, into waters of the State under the Porter-Cologne Water Quality Control Act. Waters of the State are defined more broadly than "waters of the US" to mean "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code section 13050(e)). Examples include, but are not limited to, rivers, streams, lakes, bays, marshes, mudflats, unvegetated seasonally ponded areas, drainage swales, sloughs, wet meadows, natural ponds, vernal pools, diked baylands, seasonal wetlands, and riparian woodlands. Waters of the State include all waters within the state's

boundaries, whether private or public, including waters in both natural and artificial channels. They include all “waters of the United States;” all surface waters that are not “waters of the United States, e.g. non-jurisdictional wetlands; groundwater; and the territorial seas.

The State Water Resources Control Board’s *State Wetland Definition and Procedures for Discharges of Dredge or Fill Material to Waters of the State* adopted April 2, 2019 (the Procedures) along with the *Implementation Guidance for the Procedures* dated April 2020 (the Implementation Guidance) defines a wetland as an area that *under normal circumstances, (1) has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area’s vegetation is dominated by hydrophytes or the area lacks vegetation.* The Procedures, along with the Implementation Guidance state the permitting authority (e.g. State Water Quality Control Board) shall rely on any wetland area delineation from a final aquatic resource report verified by the Corps. If the Corps does not require an aquatic resource delineation report, an applicant must submit a delineation of all waters, but these delineations will be verified by SWQCB’s Regional Water Quality Control Board staff during application review. Similarly, if the Corps does not require a delineation, but similar information is prepared for CDFW, the applicant can submit that information to the Water Boards, who will determine if it is sufficient for the Water Board’s purposes. In addition, as a matter of policy the SWQCB/RWQCBs consider wetlands and waters determined to be non-jurisdictional by the Corps/USEPA under SWANCC or Rapanos guidance or the NWPR to remain jurisdictional as waters of the State subject to SWQCB/RWQCB jurisdiction.

The Procedures along with the Interim Guidance also include procedures for the submission, review, and approval of applications for activities that could result in the discharge of dredged or fill material to any Waters of the State and include elements of the Clean Water Act Section 404(b)(1) Alternatives Analysis Guidelines, thereby bringing uniformity to SWQCB’s regulation of discharges of dredged or fill material to all waters of the state. Typically the Corps requires a Clean Water Act 404(b)(1) Alternatives Analysis for wetland impacts greater than 0.50 acres. The Procedures require an alternatives analyses to be completed in accordance with a three tier system. The level of effort required for an alternatives analysis within each of the three tiers shall be commensurate with the significance of the impacts resulting from the discharge.

The California State Water Resource Control Board has also developed a general construction storm water permit to implement the requirements of the federal National Pollution Discharge Elimination System (NPDES) permit. Projects approved by a RWQCB must, therefore, include the preconstruction requirement for a Stormwater Pollution Prevention Plan and the post-construction requirement for a Stormwater Management Plan.

San Francisco Bay Conservation and Development Commission

The San Francisco Bay Conservation and Development Commission (BCDC) has permit jurisdiction over San Francisco Bay. There are two types of BCDC jurisdiction within the Bay Area:

- (a) Bay Jurisdiction: San Francisco Bay jurisdiction, being all areas that are subject to tidal action from the south end of the bay to the Golden Gate (Point Bonita-Point Lobos) and to the

Sacramento River line (a line between Stake Point and Simmons Point, extended north easterly to the mouth of Marshall Cut), including all sloughs, and specifically, the marshlands lying between mean high tide and five feet above mean sea level; tidelands (land lying between mean high tide and mean low tide); and submerged lands (land lying below mean low tide).

(b) Shoreline Band Jurisdiction: A shoreline band consisting of all territory located between the shoreline of San Francisco Bay as defined above in item (a) and a line 100 feet landward of and parallel with that line; provided that the commission may, by resolution, exclude from its area of jurisdiction any area within the shoreline band that it finds and declares is of no regional importance to the Bay.

BCDC is authorized to issue or deny permits for any filling of the Bay. Section 66605 of the McAteer-Petris Act allows the Commission to authorize Bay fill only for water-oriented uses, and minor fill to improve shoreline appearance or public access. Furthermore, the McAteer-Petris Act requires that the fill only should be authorized if there is no feasible upland location, the fill is the minimum amount necessary, the fill minimizes harmful effects to the Bay, and the public benefits clearly exceed its detriments.

BCDC Bay jurisdiction includes the tidal channel to the west of the existing house and the salt marsh beyond Beach Drive to the east. BCDC's 100-foot Shoreline Band jurisdiction is contiguous with the County's Wetland Conservation Area that also includes a 100-foot wetland setback. As work for the proposed project will be conducted within the 100-foot setback from a wetland (and, therefore also within BCDC's Shoreline Band jurisdiction), the proposed project will require a BCDC permit.

California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. The CESA is similar to the FESA but pertains to state listed endangered and threatened species. CESA requires state agencies to consult with the CDFW when preparing CEQA documents to ensure that the state lead agency actions do not jeopardize the existence of listed species. CESA directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur, and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. Agencies can approve a project that affects a listed species if they determine that "overriding considerations" exist; however, the agencies are prohibited from approving projects that would result in the extinction of a listed species.

The CESA generally prohibits the taking of state listed endangered or threatened plant and wildlife species, however, for projects resulting in impacts to state listed species, CDFW may authorize take through issuance of an Incidental Take Permit (ITP) pursuant to Section 2081 of the California Fish and Game Code. Section 2081 requires that such projects implement an approved habitat management plan or management agreement that avoids or compensates for possible jeopardy. CDFW requires preparation of mitigation plans in accordance with published guidelines that require, among other things, measures to fully mitigate impacts to State listed species. CDFW exercises authority over mitigation projects involving state listed species, including those resulting from CEQA

mitigation requirements. No authorization of take under Section 2081 is permitted for species listed in state statutes as Fully Protected Species. Where Fully Protected Species are involved, projects must be designed to avoid all take of the species. CDFW cannot issue an ITP until the CEQA Lead Agency has provided documentation in the form of a Notice of Determination that the project has complied with CEQA.

California Department of Fish and Wildlife-Lake and Streambed Alteration Agreement

Section 1602 of the California Fish and Game Code requires any person, governmental agency, or public utility proposing any activity that will divert or obstruct the natural flow or change the bed, channel or bank of any river, stream, or lake, or proposing to use any material from a streambed, to first notify CDFW of such proposed activity. Based on the information contained in the notification form and a possible field inspection, CDFW may propose reasonable modifications in the proposed construction as would allow for the protection of fish and wildlife resources. Upon request, the parties may meet to discuss the modifications. If the parties cannot agree and execute a Lake and Streambed Alteration Agreement, then the matter may be referred to arbitration. CDFW cannot issue a Streambed Alteration Agreement until the CEQA Lead Agency has provided documentation in the form of a Notice of Determination that the project has complied with CEQA.

CDFW's regulations implementing the Fish and Game Code define the relevant rivers, streams, and lakes over which the agency has jurisdiction to constitute "all rivers, streams, lakes, and streambeds in the State of California, including all rivers, streams and streambeds which have intermittent flows of water." (Title 14 *California Code of Regulations* [CCR] § 720). The CDFW takes jurisdiction under its Lake and Streambed Alteration Agreement Program for any work undertaken in or near a river, stream, or lake that flows at least intermittently through a bed or channel. The CDFW does not have a methodology for the identification and delineation of the jurisdictional limits of streams except for the general guidance provided in *A Field Guide to Lake and Streambed Alteration Agreements, Section 1600-1607 California Fish and Game Code* (CDFG 1994). In making jurisdictional determinations, CDFW staff typically rely on field observation of physical features that provide evidence of water flow through a bed and channel such as observed flowing water, sediment deposits and drift deposits and that the stream supports fish or other aquatic life. Riparian habitat is not specifically defined by the Fish and Game Code but CDFW takes jurisdiction over areas within the flood plain of a body of water where the vegetation (grass, sedges, rushes, forbs, shrubs, and trees) is supported by the surface or subsurface flow.

California Department of Fish and Wildlife-Fish and Game Code Section 3503, 3503.5 and 3513. The State of California also incorporates the protection of nongame birds and birds of prey, including their nests, in Sections 3503, 3503.5, and 3513 of the California Fish and Game Code. Section 3503 of the Fish and Game Code makes it unlawful to take, possess, or needlessly destroy the nests or eggs of any bird. Section 3503.5 makes it unlawful to take or possess birds of prey (hawks, eagles, vultures, owls) or destroy their nests or eggs. In December of 2018, California issued new guidance specifying that state law includes "a prohibition on incidental take of migratory birds, notwithstanding any federal reinterpretation of the Migratory Bird Treaty Act" by the Department of Interior.

California Department of Fish and Wildlife Fish- Sensitive Plant Communities.

CDFW has designated special status natural communities which are considered rare in the region, rank as threatened or very threatened, support special status species, or otherwise receive some form of regulatory protection. Sensitive plant communities are those natural plant communities identified in local or regional plans, policies, ordinances, regulations, or by the CDFW which provide special functions or values. Documentation pertaining to these communities, as well as special status species (including species of special concern), is kept by CDFW as part of the California Natural Diversity Data Base (CNDDDB). All known occurrences of sensitive habitats are mapped onto 7.5 minute USGS topographic quadrangle maps maintained by the CNDDDB. Sensitive plant communities are also identified by CDFW on their List of California Natural Communities Recognized by the CNDDDB. Impacts to sensitive natural communities must be considered and evaluated under CEQA.

California Department of Fish and Wildlife- Species of Special Concern

CDFW tracks species in California whose numbers, reproductive success, or habitat may be threatened. Species that may be considered for review are included on a list of “Species of Special Concern” developed by the CDFW. Even though these species may not be formally listed under FESA or CESA, such plant and wildlife species must be evaluated during the CEQA review of development projects, and mitigation should be developed to prevent significant impacts to such species.

California Department of Fish and Wildlife- Fully Protected Animal Species

The classification of Fully Protected was an effort by the State of California in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Most Fully Protected species have also been listed as threatened or endangered species under state endangered species laws and regulations. Species classified as Fully Protected Species by the CDFW may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock (as per California Fish and Game Code Section 3511(a)(1)).

California Native Plant Society

The California Native Plant Society (CNPS) maintains a list of plant species native to California that have low numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Plants of California (CNPS 2014: <https://www.cnps.org/cnps/rareplants/inventory/>). Potential impacts to populations of CNPS-listed plants receive consideration under CEQA review, especially those plants included on Lists 1 and 2. The following identifies the definitions of the CNPS listings:
<https://www.cnps.org/cnps/rareplants/ranking.php>

- | | |
|--------------------------------|--|
| California Rare Plant Rank 1A: | Plants presumed extirpated in California and either rare or extinct elsewhere. |
| California Rare Plant Rank1B: | Plants rare, threatened, or endangered in California and elsewhere. |
| California Rare Plant Rank 2A: | Plants presumed extirpated in California, but more common elsewhere. |
| California Rare Plant Rank 2B: | Plants rare, threatened, or endangered in California, but more numerous elsewhere. |

California Rare Plant Rank 3:	Plants about which more information is needed – a review list.
California Rare Plant Rank 4:	Plants of limited distribution – a watch list.

3.3 Marin County Policies

Marin Countywide Plan

One of the major goals of the Marin Countywide Plan is to provide conservation of wetlands throughout the County. The wetland conservation goal of the Plan is to require all feasible measures to avoid and minimize potential adverse impacts on existing wetlands and to encourage programs for restoration and enhancement of degraded wetlands. To this end, the Plan requires development to avoid wetland areas so that the existing wetlands and upland buffers are preserved and opportunities for enhancement are retained. The Plan requires establishment of Wetland Conservation Areas (WCA) for jurisdictional wetlands to be retained, and a development setback be required a minimum distance to protect the wetland and provide an upland buffer. Regardless of parcel size, a Biological Site Assessment is required where incursion into a WCA is proposed or where full compliance with all WCA criteria would not be met.

The size of wetland setbacks required by the Marin Countywide Plan depends on whether the site is within a Coastal, Inland Rural, City-Centered, or Baylands context. The Marin Countywide Plan maps the proposed project within the Baylands Corridor, an area encompassing lands along the shoreline of San Francisco, San Pablo, and Richardson Bays that provides heightened recognition of the unique environmental characteristics of this area and the need to protect its important resources. The area generally contains marshes, tidelands, and diked lands that were once wetlands or part of the bays, and adjacent, largely undeveloped uplands. The Marin Countywide Plan maps the locations of the Baylands Corridor on Map 2-5a, which includes the project site within the Baylands Corridor.

For properties within the Baylands Corridor, Countywide Plan Policy BIO-3.1 requires a minimum setback distance of 100 feet from the edge of jurisdictional wetlands regardless of parcel size. The Plan recognizes that areas within setbacks may contain significant resource values similar to those within wetlands and also provide a transitional protection zone. An additional buffer may be required, based on the results of a site assessment, if such an assessment is determined to be necessary. Exceptions to full compliance with the WCA setback standards may apply only in the following cases:

1. Parcel is already developed with an existing use, provided no unauthorized fill or other modifications to wetlands have occurred as part of ongoing use of the property.
2. Parcel is undeveloped and falls entirely within the WCA.
3. Parcel is undeveloped and potential impacts on water quality, wildlife habitat, or other sensitive resources would be greater as a result of development outside the WCA than development within the WCA, as determined by a site assessment.
4. Wetlands are avoided and a site assessment demonstrates that minimal incursion within the minimum WCA setback distance would not result in any significant adverse direct or indirect impacts on wetlands.

Marin County Code

Marin County Code Section 22.14.060 requires the identification of the “line of highest tidal action”. The “line of highest tidal action” is not defined by the Code or in the Marin County Wide Plan. For the purpose of this assessment the “line of highest tidal action” is assumed to follow the USACE’s definition of a High Tide Line outlined in 33 C.F.R. §328.3(c). Based on the Corps definition the term High Tide Line means the line of intersection of the land with the water’s surface at the maximum height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds, such as those accompanying a hurricane or other intense storm. The National Oceanic and Atmospheric Administration (NOAA) monitors a number of tidal stations within the Bay recording tidal data including what NOAA calls the “Max Tide”. NOAA defines the Max Tide as the maximum height reached by a rising tide due to the periodic tidal forces and the effects of meteorological, hydrologic, and/or oceanographic conditions. This definition complies with the Corps HTL definition. The Corps goes on further to state that, in the absence of actual data, the HTL may be determined by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide.

Marin County Code Section 22.20.040 requires procedures to protect roosting bats, nesting birds, and the state and federally listed Northern spotted owl. In areas where a Biological Site Assessment identifies a high probability for the presence roosting bats, Code Section 22.20.040(E) requires a two-step process for removal of trees with potential bat habitat during certain times of the year. If a Biological Site Assessment identifies areas with a high probability of the presence of nesting birds and the project requires tree removal, grading, or other site disturbances during the nesting season, Code Section 22.20.040(F) requires pre-construction bird nesting surveys and, if nesting birds are found, establishment of appropriate buffer zones and installation of exclusion fencing to ensure no disturbance to active nests until young have fledged. In addition, Marin County Code Section 22.20.040(G) requires special conditions to protect Northern spotted owl be implemented if a Biological Site Assessment identifies a Northern spotted owl nest within 500 feet of proposed outdoor construction activity involving tree removal, grading, or other site disturbances.

Tree replacement policies from the Marin County Code may also be relevant to a proposed project. Specifically, Section 22.26.040 (Landscaping Objectives) states “any trees that are to be removed and for which a Tree Removal Permit is required shall be replaced at a minimum ratio of two new, appropriately sized and installed trees for each tree removed, unless a higher replacement ratio is determined to be appropriate.” Section 22.27.040 indicates that “in the event that tree planting on the site is not feasible or appropriate, the Director may require in lieu of planting on the specific property, the payment of money in the amount of \$500 per replacement tree to be deposited into the Tree Preservation Fund managed by the Marin County Parks and Open Space Department for planting, maintenance, and management of trees and other vegetation.

4.0 EXISTING BIOLOGICAL SETTING

The description of the biological setting for the property is based on a field visit to the site by HBG permit specialist Robert Perrera and HBG Senior Environmental Scientist Gary Deghi on April 11, 2022. The survey included observations of the composition and distribution of plant species, wildlife observations, identification of sensitive habitats and a comparison of site characteristics for similarity to sites known to support special status species within the area. The field visit was also specifically intended to determine the limits of wetland (salt marsh) found within the Beach Drive Wetlands located east of Beach Drive and along the northwestern edge of the property bordering a tidal channel from San Francisco Bay to determine the location of the 100-foot wetland setbacks as determined by the Marin Countywide Plan.

The project site is located in an unincorporated area near San Rafael, California. The 0.11-acre property is flat but slightly sloping toward the tidal channel from San Francisco Bay that forms the western border of the site. Elevations on the property inboard of the rip-rap range between 8.5– to 9.3-feet NAVD88. A review of the Natural Resource Conservation Service (NRCS) Soil Survey map for Marin County indicates the presence of one soil type on the project site (NRCS 2022): Tocaloma-McMullin-Urban land complex, 30 to 50% slopes. Western portions of the site are designated in the soil survey as Water.

The Beach Drive Wetlands located east and north of the subject parcel is a managed tidal salt marsh. The marsh area is roughly enclosed by Beach Drive, Oak Drive, and Point San Pedro Road and is separated from the Bay by Beach Drive. The marsh is connected to the Bay only through a pipe under Beach Drive equipped with a flap gate that can be secured in an open or closed position. Tidal flows are managed by manually opening or closing the flap gate. The flap gate can allow managed tidal flows into the marsh, prevent back flow into the salt marsh during incoming tides, or allow water to flow into the Bay during storm events. The tidal channel located west of and adjacent to the project site is a fully tidal channel separating Beach Drive from the Loch Lomond Marina.

Like other portions of northern California, San Rafael experiences a Mediterranean climate characterized by warm, dry summers and cool, wet winters. Coastal low clouds and fog are common, especially during the late night and early morning hours. Average annual precipitation in the San Rafael area approximately 41 inches, with most rain in the Bay Area’s winter “rainy season” (November through March).

4.1 *Plant Communities*

Vegetation communities and habitats are generally identified based on the currently accepted List of Natural Communities (CDFW 2010). The list is based on A Manual of California Vegetation, Second Edition (Sawyer et al 2009), which is the National Vegetation Classification applied to California. An additional classification system is the California Wildlife Habitat Relationships (WHR) System for habitat classifications (Mayer and Laudenslayer 1988). The WHR system defines aquatic as well as terrestrial habitats and is one of the few systems that include urban areas. The project site does not contain a native habitat type that would be classified under the Manual of California Vegetation; the entire site is a landscaped residential urban property that would be considered an Urban habitat

under the California WHR System. The western edge of the property is tidal salt marsh along the edge of the tidal channel from San Francisco Bay.

The tidal marsh within the western edge of the project site is a fully tidal area along the edge of the tidal channel. Vegetation in this area consists of plants adapted to such salt marsh habitats including pickleweed (*Salicornia pacifica*), cordgrass (*Spartina foliosa*), gum plant (*Grindelia* sp.), sea lavender (*Limonium californicum*), and jaumea (*Jaumea carnosa*).

Vegetation throughout the residential portion of the parcel consists almost entirely of landscaping and non-native and invasive species. Small trees around the existing house include a peach tree (*Prunus persica*), a lime tree (*Citrus aurantiifolia*), acacia (*Acacia* sp.), privet (*Ligustrum* sp.) and a large juniper (*Juniperus* sp.). Vegetation in the yard to the rear of the house adjacent to the tidal channel includes landscaping and non-native species that include Chilean sea fig (*Carpobrotus chilensis*, a type of ice plant) as a ground cover, and other species such as yucca (*Yucca* sp.), lavender (*Lavandula* sp.), red valerian (*Centranthus ruber*), a variety of succulents, and sweet fennel (*Foeniculum vulgare*). Landscaping species in front of the house along Beach Drive include roses (*Rosa* sp.), agapantha (*Agapanthus africanus*), camellia (*Camellia* sp.), fuschia (*Fuschia* sp.), and others.

4.2 Animal Populations

The Urban habitat on site supports provides limited habitat for wildlife, though some species found in disturbed urban environments in this part of Marin County may be present. Scattered landscaping trees and shrubs provide only limited roosting sites for birds and little cover or foraging habitat for mammals, reptiles, and amphibians. The open water habitat and mudflats (at low tides) in the adjacent tidal channel and the salt marsh habitat both along the edge of the tidal channel and within the Beach Drive Wetlands provides valuable habitat for species of waterbirds, waterfowl, and shorebirds, and other species found in marshes surrounding the San Francisco Bay estuary.

A number of bird species were documented in the general vicinity during the field review conducted by wildlife biologist Gary Deghi of HBG on April 11, 2022. Nearly all species documented are common to abundant in the region and would be expected in the habitats present at the site. Species noted along the tidal channel included Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), gadwall (*Mareca strepera*), lesser scaup (*Aythya affinis*), double-crested cormorant (*Phalacrocorax auritus*), snowy egret (*Egretta thula*), black-necked stilt (*Himantopus mexicanus*), willet (*Tringa semipalmata*), spotted sandpiper (*Actitis macularius*), American coot (*Fulica americana*), and Caspian tern (*Hydroprogne caspia*). Species noted during the field review at the Beach Drive Wetlands included mallard, green-winged teal (*Anas crecca*), snowy egret, and black-necked stilt. Species noted on the project site itself included American crow (*Corvus brachyrhynchos*) and song sparrow (*Melospiza melodia*).

No reptiles or amphibians were observed, and few would be expected so close to the Bay. Mammals could include some species adapted to urban environments such as Norway rat (*Rattus norvegicus*), Virginia opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*) or racoon (*Procyon lotor*).

4.3 Tidal and Muted-Tidal Waters

During the site visit conducted on April 11, 2022, Gary Deghi and Robert Perrera of HBG conducted an initial reconnaissance investigation of the study area for the presence of wetlands and other “waters of the U.S.” potentially subject to federal jurisdiction under the Clean Water Act or state or local jurisdiction under the Porter-Cologne Act. The review included an investigation of existing landforms, vegetation, and hydrology conditions and review of Google Earth Pro imagery, but consisted of a preliminary review of the area for wetland habitats. The northwestern boundary of the subject property is bound by Beach Drive. Adjacent to and abutting Beach Drive are muted tidal wetlands identified locally as the “Beach Drive Wetlands.” The limit of Beach Drive Wetlands shown on Figure 2 was based on visual observation of a shift from wetland plants to upland plants moving up the levee slope of Beach Drive, and based on the biological assessment prepared by HBG titled *Biological Site Assessment Single-Family Residence At 726 Point San Pedro Road Marin County, California* dated August 2021. The limit of wetlands along Beach Drive Wetlands is at approximately 7 feet NAVD88. The southwestern boundary of the subject property on the outboard side of the rip-rap is bound by tidal wetlands, and the southeastern boundary is bound by unvegetated tidal waters. The limit of tidal wetlands was based on visual observation of a shift from wetland plants typically found in tidal wetlands near the toe of the slope of the rip-rap to sparsely vegetated rip-rap which lacked hydric soils as you moved up the slope, and based on Google Earth Pro aerial imagery. The limit of wetlands is at approximately 7.5 feet NAVD88.

The muted and full tidal wetlands and tidal waters are subject to regulation by the Corps of Engineers as a water of the U.S. under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act¹, and by the SFBRWQCB as a Water of the State of California under the Porter-Cologne Act. The muted and full tidal wetlands would also be subject to the 100-foot Wetland Conservation Area setback requirements contained within the Marin Countywide Plan. The portion of the property above mean high water elevation and above the limit of the wetlands are within BCDC’s 100-foot Shoreline Band jurisdiction, and the areas on the outboard side of the levee at and below the mean high water elevation are within BCDC’s Bay jurisdiction.

No wetlands were found within the in-board side of the rip-rap on the project site. All wetlands are located outside of the existing developed residential dwelling.

4.4 Wetland Conservation Area

As described in Section 4.3, west of the project site adjacent to and abutting Beach Drive are muted tidal wetlands identified locally as the “Beach Drive Wetlands”, and the southwestern boundary of the subject property on the outboard side of the rip-rap is bound by tidal wetlands. For properties within the Baylands Corridor, Countywide Plan Policy BIO-3.1 requires a minimum setback distance of 100 feet from the edge of a wetland, regardless of parcel size. This setback is referred to as the Wetland Conservation Area (WCA). There are two 100-foot WCA buffer lines shown on *Figure 2 Plan View with 100-Foot WCA Buffers*. The 100-foot WCA buffer line depicted in red extends from the muted tidal wetlands east across the project site and the on the 100-foot WCA buffer line depicted in blue extends south across the project site. A site was conducted on September 9, 2022 to determine the limit of the wetlands. Two data points were taken between Beach Drive and the Beach Drive

¹ Section 10 of the Rivers and Harbors Act jurisdiction extends up to the Mean High Water in tidal systems.

Wetlands (SP-1 & 2) and two data points (SP-3 & -4) were taken near Beach Drive between the full tidal wetlands and the rip-rap slope of 22 Beach Drive property. Location of the data points are noted on Figure 2 and data forms can be found in Exhibit 3. Photographs of the data points are presented in Exhibit 4.

4.5 Mean Hight Tide / Mean High Water

The nearest NOAA tidal datum to the project site with MHW data is station 9414873-Point San Quentin. The MHW at this datum is 5.34 feet NAVD88. This data is based on a tidal epoch from 1983-2001.

4.6 Line Of Highest Tidal Action

There are two tidal datums within proximity to the project site with recorded “Max Tide” data. NOAA defines the Max Tide (MT) as the maximum height reached by a rising tide due to the periodic tidal forces and the effects of meteorological, hydrologic, and/or oceanographic conditions. HBG assumes NOAA’s definition of MT complies with Marin County’s intent of mapping the “Line of Highest Tidal Action.” The MT for NOAA station 9414863-Richmond is 8.65 feet NAVD88 and the MT for tidal station 9414874-Corte Madera Creek is 7.96 feet NAVD88. The average of the two stations is 8.31 feet NAVD88.

4.7 Special Status Species

Special status species include those species listed by the federal and state governments as endangered, threatened, or rare or candidate species for these lists. Endangered or threatened species are protected by the federal Endangered Species Act of 1973 as amended, the California Native Plant Protection Act of 1977, and the California Endangered Species Act of 1970. The California Environmental Quality Act (CEQA) provides additional protection for unlisted species that meet the “rare” or “endangered” criteria defined in Title 14, California Code of Regulations Section 15380. Special status species also include those species listed by CDFW as Species of Concern (species that face extirpation in California if current population and habitat trends continue), those listed as Fully Protected by CDFW (a designation that provides additional protection to those animals that were rare or faced possible extinction), and bird species designated as Bird Species of Conservation Concern by the USFWS. These state and federal Species of Concern must be evaluated in the context of evaluation under CEQA. Special status species included in CEQA review also include bat species that have been designated with conservation priority by the Western Bat Working Group. CEQA also requires evaluation of impacts to plant species on California Native Plant Society (CNPS) Lists 1 and 2.

CDFW maintains records for the distribution and known occurrences of sensitive species and habitats in the California Natural Diversity Database (CNDDDB). The CNDDDB is organized into map areas based on 7.5-minute topographic maps produced by the US Geological Survey. All known occurrences of sensitive species and important natural communities are mapped on the quadrangle maps. The database gives detailed information on each occurrence, including specific location of the individual, population, or habitat (if possible) and the presumed current state of the population or habitat. The project site is located in the western edge of the San Quentin 7.5-minute quadrangle. A search of the CNDDDB for records of occurrence of special status animals and plants and natural communities within

this quadrangle indicated that a number of special status species have been known to occur in the immediate vicinity of the project site, though none have been reported from the project site itself.

Table 1 presents a list of special status animals and plants that have been reported in the project vicinity. The table includes an evaluation of the potential for sensitive species to occur at the site.

4.7.1 Special Status Plant Species

A list of special status plants with potential to occur on the property was developed from the CDFW's California Natural Diversity Data Base. A complete list of special status plant species mentioned in the CNDDDB as occurring within approximately 10 miles of the site is included in Table 1. Special status plant species include: (i) species that are listed or proposed for listing as threatened or endangered under the federal Endangered Species Act; (ii) species that are listed, or proposed for listing by the State of California as threatened or endangered under the California Endangered Species Act; (iii) plants considered by the California Native Plant Society (CNPS) to be rare, threatened, or endangered in California and elsewhere; and (iv) plant species that meet the definition of rare or endangered under CEQA.

Most of the special status plant species noted in Table 1 are species that occur in habitats and soil types that do not occur on the subject property. These include chaparral, alkali flats and alkali wetlands, salt and brackish marshes, claypan vernal pools, coastal dunes, and coastal bluff scrub, all of which are not found on the property. A number of additional special status plant species are found on serpentine soils. The precise habitat requirements of all special status plants listed in Table 1 do not match the nature of the habitat at or adjacent to the project site.

The only plant species known to occur in the past in salt marsh areas along the Marin County Bayshore is the Point Reyes salty bird's beak (*Chloropyron maritimum palustre*). Point Reyes salty bird's beak is listed as threatened under the federal ESA and considered Rare by CDFW under CESA. The species is also listed on CNPS list 1B.2. This plant species is usually found in areas of coastal salt marsh with pickleweed (*Salicornia*), saltgrass (*Distichlis*), Jaumea (*Jaumea*) and cordgrass (*Spartina*), etc. The CNDDDB maps a record of this plant species from near the project site, but the report also points out that the exact location of the sighting is "unknown" and "mapped by CNDDDB as a best guess." The sighting of this species is from 1863 and more recent investigators have posited that the species is extirpated in this area. Point Reyes salty bird's beak does not occur at the project site nor does it occur along the tidal channel or the Beach Drive Wetlands.

Special status plant species would not be expected to occur at the site of the proposed residential project.

4.7.2 Special Status Animal Species

Animal species noted in the CNDDDB as occurring within a 10-mile radius of the site or that are known to occur in the general vicinity based on the knowledge of HBG biologists, are discussed in Table 1. Species that have been documented in areas in close vicinity to the project site include the mimic tryonia (aka the California brackishwater snail) (*Tryonia imitator*), California Ridgway's rail (*Rallus obsoletus obsoletus*), California black rail (*Laterallus jamaicensis coturniculus*), San Pablo song

sparrow (*Melospiza medodia samuelis*), and salt marsh harvest mouse (*Reithrodontomys raviventris*). Nesting colonies of Black-crowned night-heron (*Nycticorax nycticorax*), great egret (*Ardea alba*), and snowy egret (*Egretta thula*) are also protected by CDFW under the state Fish and Game Code and are reported in the project vicinity. These species mentioned are discussed in greater detail below. None of the other animal species discussed in Table 1 have the potential to occur on the site. This finding is made based on the habitat requirements of species listed in the table, field review of habitats present at the site and the immediate vicinity, and an evaluation of the suitability of on-site habitats to support these species.

Mimic tryonia. The mimic tryonia (*Tryonia imitator*) (aka the California brackishwater snail) does not have a state or federal listing and has not been designated as a species of concern. Insufficient data is known for it to have been given a rating by the International Union for the Conservation of Nature (IUCN). This supposedly rare species of snail lives in the permanently submerged areas of coastal lagoons, estuaries and salt marshes, from Sonoma County to San Diego County.

Although the CNDDDB maps presence of the California brackishwater snail from near the project site, the record of this species reports the California brackishwater snail as having been collected in 1897 from somewhere along the Bay shore between San Quentin and Point San Pedro. The CNDDDB also reports the extirpation of the species from this area. It can definitively be stated that the California brackishwater snail does not occur in the salt marsh adjacent to the project site.

Black-crowned night-heron, Great Egret and Snowy Egret. Black-crowned night-heron (*Nycticorax nycticorax*) is a colonial nester, usually found nesting in trees but occasionally in tule patches. Great egrets (*Ardea alba*) is also nests in colonies, usually in tall trees, cliff sides, and sequestered spots on marshes. Snowy egret (*Egretta thula*) is also a colonial nester, with nest sites situated in protected beds of dense tules. Rookery sites for these three species are situated close to foraging areas such as marshes, tidal-flats, lake margins, mudflats, streams, wet meadows, and borders of lakes. Black-crowned night-heron, great egret, and snowy egret are on the Special Animals List maintained by CDFW and their rookeries are protected. CDFW documents such rookeries within the CNDDDB. All three species are listed by the International Union for the Conservation of Nature (IUCN) as species of Least Concern.

These species are noted in the CNDDDB as species occurring in the project area by virtue of a known rookery site for these species on West Marin Island, an Island located southeast of the project in San Francisco Bay. These three colonial nesters have established colonies on the Island on and off since the 1950s. The rookery is approximately 3,500 feet (about 0.7 miles) from the project and not within a zone of influence for activities that may occur in the immediate project area along Beach Drive. No suitable trees or other vegetation for a rookery site is found on the site of the proposed project.

California Ridgway's Rail. California Ridgway's rail (*Rallus obsoletus obsoletus*) has been listed by the USFWS as an endangered species since 1970 (35 Fed. Reg. 16048 (1970)). The USFWS has not designated critical habitat for the Ridgway's rail. Ridgway's rail is also listed as endangered by the CDFW and is a Fully Protected Species under California law (Cal. Fish & Game Code § 3511).

California Ridgway's rails are typically found in the intertidal zone and sloughs of salt and brackish marshes dominated by pickleweed, Pacific cordgrass, gum plant, saltgrass, jaumea and adjacent upland refugia. They may also occupy habitats with other vegetative components, which include, but are not limited to, bulrush (*Bolboschoenus americanus* and *B. maritimus*), cattails (*Typha* spp.) and Baltic rush (*Juncus balticus*). Areas preferred by Ridgway's rail are marshes with direct tidal circulation, braided channels with dense vegetation along with shallow water areas and adjacent mudflats for foraging, and vegetated high marsh and uplands serving as refugial habitat and protection from predators during extreme high tides. Ridgway's rail typically feeds on benthic invertebrates, but its diet is wide ranging and includes seeds, and occasionally small mammals such as the harvest mouse.

In the North Bay, the Ridgway's rail breeding season, including pair bonding and nest construction, may begin as early as February. The end of the breeding season is typically defined as the end of August, which corresponds with the time when eggs laid during re-nesting attempts have hatched and the young rails are mobile. Ridgway's rails build their nests near tidal sloughs using cordgrass and pickleweed.

According to the CNDDDB, small numbers of California Ridgway's rail were documented upstream from the mouth of San Rafael Creek in 1970s within salt marsh about at a location that is approximately 0.8 miles southwest of the proposed project site. Although the salt marsh adjacent to the project site is vegetated with pickleweed and other marsh species that could support incidental foraging by Ridgway's rail, nesting by the species in this marsh would not be expected. The Beach Drive Wetlands lack a number of features that comprise suitable nesting habitat including direct tidal circulation (the tide gate allows management of water levels in the marsh), adjacent mudflats, high vegetative diversity, densely vegetated smaller braided channels, and vegetated high marsh/upland refugial habitat. The wetlands along the tidal channel lack the high vegetative diversity, densely vegetated smaller braided channels, and vegetated high marsh refugial habitat. As no breeding habitat is found in the immediate vicinity of the project site, Ridgway's rail does not provide any constraint with respect to indirect impacts on breeding by the species as a result of implementation of the project.

California Black Rail. The California black rail (*Laterallus jamaicensis coturniculus*), a small, secretive marsh bird, is a state-listed threatened species and a California Fully Protected Species. The California black rail is also a federal Bird Species of Conservation Concern. The California black rail most commonly occurs along slough channels and bays with densely vegetated tidal emergent wetlands dominated by pickleweed, or in brackish marshes supporting bulrush in association with pickleweed. They are found in both freshwater and brackish water environments. In freshwater marsh, they are usually found in bulrush, cattails, and saltgrass. These rails typically occur in the high wetland zones near the upper limit of tidal influence. In California, the species occurs at San Francisco Bay, the Sacramento-San Joaquin Delta, Morro Bay, the Salton Sea, and the lower Colorado River. Loss of upper marsh zone around San Francisco Bay has reduced numbers considerably.

According to the CNDDDB, one California black rail was heard calling from an area near the mouth of San Rafael Creek in February of 2012, an area located about 0.8 miles from the project site. The area where this single individual was documented is an area bounded by roads and levees and adjacent to a residential area. The Beach Drive Wetlands is a small area of marsh lacking the direct tidal

circulation necessary for nesting by this species in areas adjacent to the Bay and with a small probability of supporting foraging by this species. Nesting by this species is also unlikely in marsh areas adjacent to the project site which are heavily impacted by surrounding activity including roads, residential areas, and an active marina and lacking the necessary vegetated high marsh refugial habitat.

San Pablo Song Sparrow. The San Pablo song sparrow (*Melospiza medodia samuelis*) is designated by the State of California as a species of special concern and by the USFWS as a Bird Species of Conservation Concern. This resident subspecies of the common Song sparrow is endemic to California and restricted to the tidal marshes of San Pablo Bay in Solano, Napa, Sonoma, Marin and Contra Costa Counties. Preferred habitats are marshes with dense pickleweed or cordgrass and high marsh vegetation including gum plant.

The nearest documented location for this species in the CNDDDB is from collections made in 1901 and 1945 in areas generally referred to as the Bay shoreline of San Rafael somewhere northeast of Larkspur. Although San Pablo song sparrow may have once inhabited the general location of the project site, the salt marsh within the Beach Drive Wetlands does not provide suitable habitat for the species as the habitat lacks the combination of characteristics that include full tidal exchange along with dense pickleweed and cordgrass and sufficient high marsh vegetation such as gumplant. The quality of the Beach Drive Wetlands and the small patch of wetland vegetation adjacent to the site within the tidal channel is insufficient to support this species.

Salt Marsh Harvest Mouse. The salt marsh harvest mouse (*Reithrodontomys raviventris*) was federally listed as endangered in its entire range in 1970. It is also state-listed as endangered and is a California Fully Protected Species. There are two subspecies: the northern (*R. r. halicoetes*) and the southern (*R. r. raviventris*) subspecies. The northern subspecies lives in the marshes of the San Pablo and Suisun bays, the southern subspecies resides in the marshes of Corte Madera, Richmond and South San Francisco Bay. Salt marsh harvest mice are critically dependent on dense cover, and their preferred habitat is dominated by pickleweed (*Salicornia pacifica*). Salt marsh harvest mice use the upper zone of peripheral halophytes (salt tolerant plants) to escape and seek cover during the higher tides, and may even spend a considerable portion of their lives there. Mice also move into the adjoining grasslands during the highest winter tides. Salt marsh harvest mice probably live on leaves, seeds and stems of plants. The northern subspecies of the salt marsh harvest mouse can drink sea water for extended periods but prefers fresh water.

The CNDDDB reports presence of salt marsh harvest mouse from the area of Spinnaker Lagoon in San Rafael, a location that is about 5,600 feet (over 1.0 miles) from the project site. The CNDDDB recognizes collections of individuals of the species from the area of Spinnaker Lagoon as early as 1950 and more recent trapping of individuals as recently as 1995.

The Beach Drive Wetlands and wetlands within the project area (including the tidal channel) were recently evaluated to determine suitability to support SMHM by species expert Dr. Mark Jennings. Wetlands on either side of the project site are isolated wetlands surrounded by development, roads, and an active marina. Although marsh vegetation within either area may be suitable for SMHM, the

marshes lack suitable refugial habitat where the endangered mice could find cover to escape predation during extreme high tides. Because of the lack of suitable refugial habitat, any SMHM that may have historically occupied marshes in the area would have become extirpated decades ago. Current conditions make it impossible for SMHM to colonize the site in the future. Salt marsh harvest mouse does not occur in the project area.

5.0 BIOLOGICAL EVALUATION

5.1 *Standards of Significance*

According to CEQA Guidelines (Appendix G), the project would be considered to have a significant impact on biological resources if it would:

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Wildlife and Game or U.S. Fish and Wildlife Service.
- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.
- c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.
- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

5.2 *Evaluation*

1) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

The Project would not result in any significant adverse impacts on special-status plant or animal species and would not substantially reduce the number or restrict the range of a rare, endangered, or

threatened species of fauna. None of the plant or animal species discussed in Table 1 have the potential to occur at the construction site or the immediate vicinity. No impacts to special status species of animal would occur due to construction proposed at the site. Details on key species known from the project area according to the CNDDDB are presented below.

Special status plants. Most of the species mentioned in Table 1 require habitat conditions (chaparral, alkali flats and alkali wetlands, salt and brackish marshes and claypan vernal pools, coastal dunes or coastal bluff scrub) that are not found at the proposed residential construction site. A number of plant species listed in Table 1 occur on soils derived from serpentine, which also does not occur on the subject property. The only special status plant species known to have previously occurred anywhere near the project area is the Point Reyes salty bird's beak, but this species is only known from an observation in 1863 mapped as a best guess as somewhere near San Rafael. The species has now been determined to be extirpated in the project area. Special status plant species would not be expected to occur within the proposed home site where construction could occur. No significant impacts to special status plant species would occur as a result of development at the site.

Special status animals. No impacts would occur to special status animal species noted in the CNDDDB as having occurred in the vicinity of the project. These species are highlighted below:

Mimic tryonia. The mimic tryonia (*Tryonia imitator*) (aka the California brackishwater snail) is known from the project area only from a collection made of the species in 1897 from somewhere along the Bay shore between San Quentin and Point San Pedro. The species has been extirpated from the project area and does not occur on or in the vicinity of the project site. No impacts to this species would result from residential construction at the site.

Black-crowned night-heron, Great Egret and Snowy Egret. These species are noted in the CNDDDB as species occurring in the project area by virtue of a known rookery site for these species on West Marin Island in Richardson Bay, an area that is approximately 0.7 miles from the project. Residential construction at the project site would have no impact on these herons and egrets nesting on West Marin Island. No suitable habitat for a rookery exists at the site of the project.

Ridgway's Rail (formerly California Clapper Rail). Although the salt marshes in the immediate project vicinity may support incidental foraging by Ridgway's rail, nesting by the species in these marshes would not be expected. The nearby marshes lack some or all of a number of features that comprise suitable nesting habitat including direct tidal circulation, adjacent mudflats, high vegetative diversity, densely vegetated and smaller braided channels, and vegetated high marsh/upland refugial habitat. As no suitable breeding habitat for this species is found in the project area, no impacts to this state and federally listed endangered species would result from the proposed residential construction.

California Black Rail. The vegetated brackish marshes near the site are small areas of marsh with a small probability of supporting foraging by this species. Nesting by this species is unlikely in the tidal marsh areas adjacent to or in the vicinity of the project site as these areas

are heavily impacted by surrounding activity including roads, residential areas, and an active marina and are lacking the necessary vegetative high marsh refugial habitat . No direct or indirect impacts to California black rail would occur as a result of the proposed residential construction.

San Pablo Song Sparrow. The nearest documented location for this species in the CNDDDB is from collections made in 1901 and 1945 in areas generally referred to as the Bay shoreline of San Rafael somewhere northeast of Larkspur. The salt marshes in the immediate vicinity of the site do not provide suitable habitat for the species as the habitat lacks the combination of tidal circulation along with dense pickleweed and cordgrass along with sufficient high marsh vegetation such as gumplant. No impacts to this species would result from the proposed residential construction.

Salt Marsh Harvest Mouse. The CNDDDB reports presence of salt marsh harvest mouse more than 1.0 mile from the project site at Spinnaker Lagoon in San Rafael. The areas of the salt marsh in the vicinity of the project site are small areas of tidal salt marsh in a heavily disturbed area of roads, housing, and an active marina, which lack suitable refugial habitat where the endangered mice could find cover to escape predation during extreme high tides. No habitat for this species is found in the immediate vicinity of the project, therefore, no impacts would occur to salt marsh harvest mouse as a result of construction of the proposed residential use.

2) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

The project would not directly adversely affect significant riparian lands, wetlands, marshes, or other significant wildlife habitats. Work within the vicinity of wetlands could result in indirect impacts to the marsh habitat without inclusion of certain precautions such as Best Management Practices related to erosion control, and other items addressed below.

The Marin Countywide Plan requires development to avoid wetland areas so that the existing wetlands and upland buffers are preserved and opportunities for enhancement are retained. The Marin Countywide Plan requires establishment of Wetland Conservation Areas that includes a development setback to protect the wetland and provide an upland buffer. For parcels within the Baylands Corridor, a minimum 100-foot development setback from wetlands is recommended.

Exceptions to full compliance with the WCA setback standards may apply only in the following cases:

1. Parcel is already developed with an existing use, provided no unauthorized fill or other modifications to wetlands have occurred as part of ongoing use of the property.
2. Parcel is undeveloped and falls entirely within the WCA.
3. Parcel is undeveloped and potential impacts on water quality, wildlife habitat, or other sensitive resources would be greater as a result of development outside the WCA than development within the WCA, as determined by a site assessment.

4. Wetlands are avoided and a site assessment demonstrates that minimal incursion within the minimum WCA setback distance would not result in any significant adverse direct or indirect impacts on wetlands.

The proposed project qualifies for the exception pursuant to exception item #1. The project site is already developed and has been in a developed state since the existing house was barged to the site from Treasure Island in 1914, a year that precedes the Clean Water Act, Porter-Cologne Act, McAteer-Petris Act, or the Marin Countywide Plan. An exception to compliance with the WCA setback standards would apply to the project as the “parcel is already developed with an existing use.” In addition, as also required to implement exception item #1, “no unauthorized fill or other modifications to wetlands have occurred as part of ongoing use of the property.”

The applicant intends to reconstruct the single-family dwelling without extending the footprint of the existing house and proposes no work on the boat dock which extends out into the Bay. The outside deck area along the southwestern and eastern area of the yard will increase by approximately 425 square feet into the existing landscaped yard. The only source of indirect impacts on waters of the Bay or the Beach Drive Wetlands would be from sedimentation possibly occurring from erosion during construction at the site, but Best Management Practices as described in response to Item #4 below will ensure no water quality impacts occur due to implementation of the project.

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

No wetlands or waters of the U.S. or the state of California are found within the development portion of the site. Development of the property as proposed would not result in filling (direct impacts) to any area that would be subject to the Clean Water Act jurisdiction of the U.S. Army Corps of Engineers, the Porter-Cologne Act jurisdiction of the SFBWQCB, the Section 1602 Fish and Game Code jurisdiction of CDFW, or to regulation by Marin County under the Marin Countywide Plan. No permits from the USACE, SFBWQCB, or CDFW would be required to implement the project. A small area of salt marsh is found within the project site adjacent to the tidal channel that would be subject to jurisdiction of state and federal agencies, but no construction is proposed within this area and no impacts to this area would occur.

BCDC Bay jurisdiction includes the tidal area at and below the Mean High Water/Mean High Tide line within the bay and Beach Drive Wetlands. BCDC’s 100-foot Shoreline Band jurisdiction extends 100-feet from Mean High Water/Mean High Tide line or if wetlands are present the band extends from the furthest extent of the wetlands, but not higher than 5 feet above Mean Sea Level. For this proposed project, the BCDC 100-foot Shoreline Band Buffer is equivalent to the County’s WCA buffer as shown on Figure 2. The entire project site is within the 100-Foot Shoreline Band jurisdiction of BCDC and, therefore, will require a BCDC permit.

The possibility of indirect impacts to the salt marsh from construction of the proposed residence and issues of compliance with the Wetland Conservation Area protection requirements of the Marin Countywide Plan are discussed in response to Item #2.

4) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Although valuable wildlife habitats occur in the general project vicinity, few wildlife species were observed on the property during the field survey and no significant wildlife populations occur on the site itself. Vegetation is entirely landscaping and non-native species and does not provide either nesting, foraging, or roosting habitat for avian species. Therefore, the proposed construction would not result in significant biological impacts at this disturbed urban site. Wildlife in the vicinity of the project is primarily limited to various species of waterfowl, waterbirds, and shorebirds that occur in the Beach Drive Wetlands or, more prominently, within the tidal channel west of the project site. Construction at the site will not disturb wildlife in the tidal channel any more than results from operation of the marina or existing disturbances from residential uses along Beach Drive or Point San Pedro Drive.

During all activities involving land disturbance, the applicant will require the contractor to follow all applicable Best Management Practices from the California Stormwater Quality Best Management Practices Handbook for Construction Activities. With the implementation of Best Management Practices, including the use of straw wattles, covering of stockpile areas and other practices, there would be little possibility of siltation within stormwater runoff that could adversely affect the water quality of the San Francisco Bay estuary located just to the south of the property.

No impacts would occur to fish or wildlife associated with streams or wetlands anywhere in the project area. The project will not cause a fish or wildlife population to drop below self-sustaining levels.

5) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The project would not conflict with any policies of the Marin Countywide Plan or other ordinances of the County of Marin. As discussed in response to Item #2, the entire project site is within the 100-foot wetland setback from both the Beach Drive Wetlands and the adjacent tidal wetlands. However, an exception to compliance with the WCA setback standards would apply to the project as the "parcel is already developed with an existing use."

The project is in compliance with Marin County Code Section 22.20.040(G). In addition, no native, heritage, or protected trees will need to be removed to accommodate the proposed construction.

6) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

There is no adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan applicable to the project site.

Summary

The project site is entirely within the WCA (the 100-foot setback from the edge of wetlands) from both the Beach Drive Wetlands and the tidal wetlands between the site and the Loch Lomond Marina. However, an exception to compliance with the WCA setback standards would apply to the project as the “parcel is already developed with an existing use” and the project would be consistent with requirements of the Marin Countywide Plan. As the project is in close proximity to wetlands, the applicant will require the contractor to follow all applicable Best Management Practices from the California Stormwater Quality Best Management Practices Handbook for Construction Activities, including use of straw wattles, covering of stockpile areas, and other practices, to ensure there will be no siltation within stormwater runoff from the site that would affect the quality of waters within the San Francisco Bay. No significant biological impacts will result from implementation of the project. The project site is in BCDC’s 100-foot Shoreline Band jurisdiction and will require a permit from BCDC.

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Exhibit 2

Figures

Figure 1. Location Map

22 Beach Drive, San Rafael, California

Legend

-  22 Beach Dr



Loch Lomond Marina

Beach Drive Wetlands

Wetlands

22 Beach Dr

San Francisco Bay



500 ft

Google Earth

Image Landsat / Copernicus



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 PHONE: 415-721-7340

**22 BEACH DRIVE -
 SANDRA COOK**
**COOK
 RESIDENCE**
 22 BEACH DR.
 SAN RAFAEL, CA, 94901
 APN 186-142-26

MARK	DATE	DESCRIPTION

STATUS: DR SET
 DATE: 9/13/2022
 DRAWN BY: LN
 DESIGN OFFICIAL
[Signature]

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SHEET TITLE

**SITE PLAN
 11"x17"**

A1.0

LEGEND

- PROPERTY LINE
- SETBACKS
- CONTOUR LINE
- FENCE

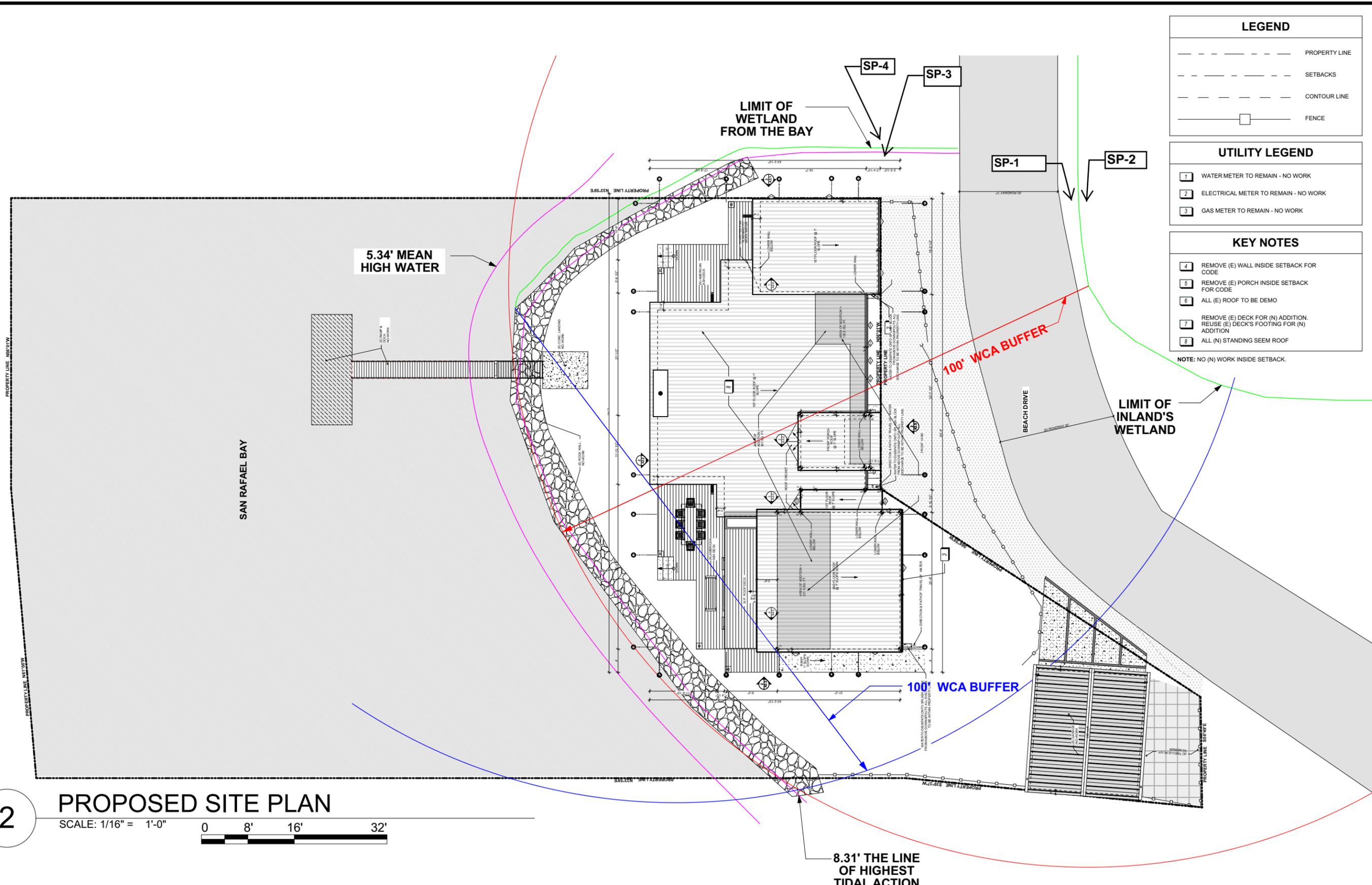
UTILITY LEGEND

- 1 WATER METER TO REMAIN - NO WORK
- 2 ELECTRICAL METER TO REMAIN - NO WORK
- 3 GAS METER TO REMAIN - NO WORK

KEY NOTES

- 4 REMOVE (E) WALL INSIDE SETBACK FOR CODE
- 5 REMOVE (E) PORCH INSIDE SETBACK FOR CODE
- 6 ALL (E) ROOF TO BE DEMO
- 7 REMOVE (E) DECK FOR (N) ADDITION. REUSE (E) DECK'S FOOTING FOR (N) ADDITION
- 8 ALL (N) STANDING SEEM ROOF

NOTE: NO (N) WORK INSIDE SETBACK.



2 PROPOSED SITE PLAN
 SCALE: 1/16" = 1'-0"
 0 8' 16' 32'

Figure 2. Plan View with 100-Foot WCA Buffers
 22 Beach Drive, San Rafael, California

Exhibit 2

Tables

Table 1. Special Status Animals and Plants with Potential to Occur in the Vicinity of the Project Site, Marin County, California

Table 1. Special Status Animals and Plants with Potential to Occur in the Vicinity of the Project Site, Marin County, California

SPECIES	STATUS ² FED/STATE/CNPS ³	HABITAT	OCCURRENCE ON THE PROJECT SITE
ANIMALS			
Invertebrates			
Obscure bumble bee (<i>Bombus caliginosus</i>)	--/--	Found in Coastal areas from Santa Barbara County north to Washington State. Food plant genera include <i>Baccharis</i> , <i>Cirsium</i> , <i>Lupinus</i> , <i>Lotus</i> , <i>Grindelia</i> and <i>Phacelia</i> .	This uncommon species could occur almost anywhere in the general area of the site and is included in the CNDDDB due to a general decline in bee populations in recent years.
Western bumble bee (<i>Bombus occidentalis</i>)	--/--	This species was once common and widespread, but the species has declined precipitously from Central California to Southern British Columbia, perhaps from disease.	This widespread and once common species could occur almost anywhere in the general area of the site and is included in the CNDDDB due to a general decline in bee populations in recent years.
Tiburon micro-blind harvestman (<i>Microcina tubruona</i>)	--/--	Open hilly grassland habitat in areas of serpentine. Found on the undersides of serpentine rocks near permanent springs.	Not present. Suitable habitat is not found at the site.
Robust walker (<i>Pomatiopsis binneyi</i>)	--/--	Found in freshwater habitats. Believed to occur in the area, but no specific records based on collected or observed specimens in the CNDDDB.	Not present. Suitable habitat is not found at the site.
Opler's longhorn moth (<i>Adela oplerella</i>)	FSC/--	Serpentine grassland; larva feed on <i>Platystemon californicus</i> .	Not present. Suitable habitat is not found at the site.
Mission blue butterfly (<i>Plebejus icarioides missionensis</i>)	FE/--	Inhabits grasslands mainly on the San Francisco Peninsula. Larval host plants are <i>Lupinus albifrons</i> , <i>L. variicolor</i> , and <i>L. formosus</i> .	Not present. Suitable habitat is not found at the site.

Table 1. Special Status Animals and Plants with Potential to Occur in the Vicinity of the Project Site, Marin County, California

SPECIES	STATUS ² FED/STATE/CNPS ³	HABITAT	OCCURRENCE ON THE PROJECT SITE
Marin elfin butterfly (<i>Incisalia mossii</i>)	--/--	Found only in redwood forests in Marin County. Larvae collected and reared on broadleaf stonecrop (<i>Sedum spathulifolium</i>).	Not present. Suitable habitat is not found at the site.
Monarch butterfly (<i>Danaus plexippus</i>)	Rare	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress) with nectar and water sources nearby.	Not present. Winter roosting sites are not present at the site.
Bridge's Coast Range shoulderband (<i>Helminthoglypta nickliniana bridgesi</i>)	--/--	Inhabits open hillsides of Alameda and Contra Costa Counties. Tends to colonize under tall grasses and weeds.	Not present. Suitable habitat is not found at the site.
Marin hesperian (<i>Vespericola marinensis</i>)	-/-	Found in moist spots in coastal brushfields and chaparral vegetation in Marin County. Found under leaves of cow-parsnip, around spring seeps, in leaf mold along streams and in alder woods and mixed evergreen forest.	Not present. Suitable habitat is not found at the site.
California brackishwater snail or mimic tryonia (<i>Tryonia imitator</i>)	--/--	Permanently submerged areas of coastal lagoons, estuaries and salt marshes, from Sonoma County to San Diego County.	Not present. Suitable habitat is not found at the site.
Fish			
Tomales roach (<i>Lavinia symmetricus</i>)	-/CSC	Tributaries to Tomales Bay.	Not present. Suitable habitat is not found at the site.
Coho salmon – central California ESU (<i>Oncorhynchus kisutch</i>)	FE/CE	Requires beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water and sufficient dissolved oxygen.	Not present. Suitable habitat is not found at the site.

Table 1. Special Status Animals and Plants with Potential to Occur in the Vicinity of the Project Site, Marin County, California

SPECIES	STATUS ² FED/STATE/CNPS ³	HABITAT	OCCURRENCE ON THE PROJECT SITE
Steelhead – Central CA Coast ESU (<i>Oncorhynchus mykiss</i>)	FT/CSC	Well-oxygenated streams with riffles; loose, silt-free gravel substrate.	Not present. Suitable habitat is not found at the site.
Tidewater goby (<i>Eucyclogobius newberryi</i>)	FE/--	Brackish water habitats along the California Coast from Agua Hedionda Lagoon in San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	Not present. Suitable habitat is not found at the site.
Delta smelt (<i>Hypomesus transpacificus</i>)	FT/CT	During spawning they migrate upstream into shallow fresh or slightly brackish tidally-influenced backwater sloughs and channel edges. Delta Smelt are found in Suisun Bay/Suisun Marsh sloughs upstream through the delta in Contra Costa, Sacramento, San Joaquin, Solano and Yolo Counties.	Not present. Suitable habitat is not found at the site.
Longfin smelt (<i>Spirinchus thaleichthys</i>)	FC/CE,CSC	Found in open waters of estuaries, mostly in the middle or bottom of the water column. Euryhaline, nektonic and anadromous. Prefers salinities of 15 to 30 ppt but can be found in both freshwater and seawater.	Not present. Suitable habitat is not found at the site.
Eulachon (<i>Thaleichthys pacificus</i>)	FT/--	Found in Klamath River, Mad River, Redwood Creek, and in small numbers in Smith River and Humboldt Bay tributaries. Spawns in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand and woody debris. Has occurred in San Pablo Bay.	Not present. Suitable habitat is not found at the site.

Table 1. Special Status Animals and Plants with Potential to Occur in the Vicinity of the Project Site, Marin County, California

SPECIES	STATUS ² FED/STATE/CNPS ³	HABITAT	OCCURRENCE ON THE PROJECT SITE
Sacramento splittail (<i>Pogonichthys macrolepidotus</i>)	--/CSC	Adult Sacramento splittail migrate upstream from brackish areas to spawn in freshwater areas subject to flooding, such as the lower reaches of rivers, dead end sloughs, and in larger sloughs such as Montezuma Slough.	Not present. Suitable habitat is not found at the site.
Amphibians			
California giant salamander (<i>Dicamptodon ensatus</i>)	--/CSC	Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County and east to Napa County. Aquatic larvae are found in cold, clear streams, occasionally in lakes and ponds. Adults are found in wet forests under rocks and logs near streams and lakes.	Not present. Suitable habitat is not found at the site.
Foothill yellow-legged frog (<i>Rana boylei</i>)	--/CSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying; larvae need at least 15 weeks to attain metamorphosis.	Not present. Suitable habitat is not found at the site.
California red-legged frog (<i>Rana draytonii</i>)	FT/CSC	Mostly found in lowlands and foothills in/near permanent sources of deep water but will disperse far during and after rain. Prefers shorelines with extensive vegetation. Requires 11-20 weeks of permanent water for larval development and requires access to aestivation habitat.	Not present. Suitable habitat is not found at the site.

Table 1. Special Status Animals and Plants with Potential to Occur in the Vicinity of the Project Site, Marin County, California

SPECIES	STATUS ² FED/STATE/CNPS ³	HABITAT	OCCURRENCE ON THE PROJECT SITE
Reptiles			
Western pond turtle (<i>Emys marmorata</i>)	--/CSC	Aquatic turtle of ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Needs basking sites and suitable upland habitat for egg-laying (sandy banks or grassy open fields).	Not present. Suitable habitat is not found at the site.
Birds			
Double-crested cormorant (<i>Phalacrocorax auritus</i>) [rookery site]	--/WL	Colonial nester on coastal cliffs and offshore islands and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	Rookery not present. Suitable nesting habitat not present on site.
Great blue heron (<i>Ardea herodias</i>) (Rookery)	-/-	Colonial nester in tall trees, cliff sides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	Rookery not present. Suitable habitat is not found at the site.
Great egret (<i>Ardea alba</i>) (Rookery)	-/-	Colonial nester in tall trees, cliff sides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	Rookery not present. Suitable habitat is not found at the site.
Snowy egret (<i>Egretta thula</i>) [Rookery]	--/--	Colonial nester, with nest sites situated in protected beds of dense tules. Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	Rookery not present. Suitable habitat for a rookery is not found at the site.

Table 1. Special Status Animals and Plants with Potential to Occur in the Vicinity of the Project Site, Marin County, California

SPECIES	STATUS ² FED/STATE/CNPS ³	HABITAT	OCCURRENCE ON THE PROJECT SITE
Black-crowned night-heron (<i>Nycticorax nycticorax</i>) [Nesting]	--/--	Colonial nester, usually in trees but occasionally in tule patches. Rookery sites are located adjacent to foraging areas including lake margins, mud-bordered bays and marshy spots.	Rookery not present. Suitable nesting habitat is not found at the site.
Northern harrier (<i>Circus cyaneus</i>) [Nesting]	-/CSC	Coastal salt marsh and freshwater marsh; nests and forages in grasslands; nests on ground in shrubby vegetation, usually at marsh edge.	Not present. Suitable nesting habitat is not found at the site.
White-tailed kite (<i>Elanus caeruleus</i>) [nesting]	-/CFP	Open grassland and agricultural areas throughout Central California.	Not present. Suitable habitat is not found at the site. Species likely forages on or near the site, especially in winter.
Cooper's hawk (<i>Accipiter cooperii</i>) [nesting]	-/WL	Nests primarily in deciduous riparian forests; forages in open woodlands.	Not present. Suitable habitat is not found at the site. Species likely forages on or near the site, especially in winter.
Sharp-shinned hawk (<i>Accipiter striatus</i>) [nesting]	--/WL	Breeds in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers, but not restricted to, riparian habitats. North facing slopes, with plucking perches are critical requirements. All habitats except alpine, open prairie, and bare desert used in winter.	Not present. Suitable nesting habitat is not present on site. May forage during the winter.

Table 1. Special Status Animals and Plants with Potential to Occur in the Vicinity of the Project Site, Marin County, California

SPECIES	STATUS ² FED/STATE/CNPS ³	HABITAT	OCCURRENCE ON THE PROJECT SITE
Osprey (<i>Pandion haliaetus</i>) [Nesting]	--/WL	Breeds in northern California from the Cascade Ranges south to Lake Tahoe, and along the coast south to Marin County. Associated strictly with large, fish-bearing waters, primarily in Ponderosa pine through mixed conifer habitats.	Not present. Suitable nesting habitat is not found at the site.
Peregrine falcon (<i>Falco peregrinus</i>)	Delisted BCC/Delisted, FP	Nests in woodland, forest and coastal habitats, on cliffs or banks, and usually near wetlands, lakes, rivers, sometimes on human-made structure. In non-breeding seasons found in riparian areas and coastal and inland wetlands.	Not present. Occurs in the area but suitable nesting habitat is not present at the site.
Ridgway's (California clapper) rail (<i>Rallus obsoletus</i>)	FE/CE,FP	Found in saltwater marshes traversed by tidal sloughs in the vicinity of San Francisco Bay; associated with abundant growths of pickleweed; feeds on mollusks obtained from mud-bottomed sloughs.	Not present. Suitable habitat is not found at the site.
California black rail (<i>Laterallus jamaicensis coturniculus</i>)	--/CT,FP	Mainly inhabits salt-marshes bordering larger bays. Occurs in tidal salt marsh with dense growths of pickleweed; also occurs in freshwater and brackish marshes.	Not present. Suitable habitat is not found at the site.
Western snowy plover (<i>Charadrius alexandrinus nivosus</i>) [nesting]	FT,BCC/CSC	Found on sandy beaches or marine and estuarine shores; also salt pond levees and shores of large alkali lakes; requires sandy, gravelly or friable soil substrate for nesting.	Not present. Suitable habitat is not found at the site.
Caspian tern (<i>Hydroprogne caspia</i>)	BCC/--	Nests on sandy or gravelly beaches and shell banks in small colonies inland and along the Coast. Found in inland freshwater lakes and marshes, and also brackish or salt waters of estuaries and bays.	Not present. Suitable habitat is not found at the site.

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SPECIES	STATUS ² FED/STATE/CNPS ³	HABITAT	OCCURRENCE ON THE PROJECT SITE
Burrowing owl (<i>Athene cunicularia</i>)	BCC/CSC	Found in open dry annual or perennial grasslands, deserts and scrublands characterized by low growing vegetation. This species is a subterranean nester, dependent upon burrowing mammals, most notably the California ground squirrel.	Not present. Suitable habitat is not found at the site.
Short-eared owl (<i>Asio flammeus</i>) (nesting)	--/CSC	Found in marshes, both freshwater and salt; lowland meadows; irrigated alfalfa fields. Tule patches/full grass needed for nesting and daytime seclusion. Nests on dry ground in a depression concealed in vegetation.	Not present. Suitable habitat is not found at the site.
Loggerhead shrike (<i>Lanius ludovicianus</i>)	BCC/CSC	Habitat includes open areas such as desert, grasslands and savannah. Nests in thickly foliated trees or tall shrubs. Forages in open habitats, which contain trees, fence posts, utility poles, and other perches.	Not present. Suitable habitat is not found at the site.
San Francisco common yellowthroat (<i>Geothlypis trichas sinuosa</i>)	BCC/CSC	Requires thick continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	Not present. Suitable habitat is not found at the site.
Yellow warbler (<i>Dendroica petechia</i>) [nesting]	BCC/CSC	Breeds in deciduous riparian woodlands, widespread during fall migration.	Not present. Suitable nesting habitat is not found at the site. Would occur during fall migration.
Alameda song sparrow (<i>Melospiza melodia pusillula</i>)	BCC/CSC	Resident of salt marshes bordering south arm of San Francisco Bay.	Not present. Suitable habitat is not found at the site.
San Pablo song sparrow (<i>Melospiza melodia samuelis</i>)	BCC/CSC	Tidal, brackish or salt marshes, San Pablo Bay.	Not present. Suitable habitat is not found at the site.

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SPECIES	STATUS ² FED/STATE/CNPS ³	HABITAT	OCCURRENCE ON THE PROJECT SITE
Tri-colored blackbird (<i>Agelaius tricolor</i>) [Nesting colony]	BCC/CE,CSC	Breeds near freshwater, usually in tall emergent vegetation. Requires open water with protected nesting substrate. Colonies prefer heavy growth of cattails and tules. Uses grasslands and agricultural lands for foraging.	Not present. Suitable habitat is not found at the site.
Yellow-headed blackbird (<i>Xanthocephalus xanthocephalus</i>)	--/CSC	Nests in freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds. Nests only where large insects such as dragonflies are abundant. Nesting is timed with maximum emergence of aquatic insects.	Not present. Suitable habitat is not found at the site.
Mammals			
Point Reyes jumping mouse (<i>Zapus trinotatus orarius</i>)	-/CSC	Primarily bunch grass marshes, also coastal scrub grassland and meadows. Builds grassy nest on ground under vegetation and burrows in winter.	Not present. Suitable habitat is not found at the site.
Salt Marsh harvest mouse (<i>Reithrodontomys raviventris</i>)	FE/CE,FP	Inhabits saline emergent wetlands in the San Francisco Bay and its tributaries. Pickleweed is the primary habitat.	Not present. Suitable habitat is not found at the site.
Salt Marsh wandering shrew (<i>Sorex vagrans halicoetes</i>)	--/CSC	Found in salt marshes of the south arm of San Francisco Bay in medium high marsh 6-8 feet above sea level where abundant driftwood is scattered among <i>Salicornia</i> .	Not present. Suitable habitat is not found at the site.
Suisun shrew (<i>Sorex ornatus sinuosus</i>)	--/CSC	Inhabits tidal marshes along the northern shores of San Pablo and Suisun Bays.	Not present. Suitable habitat is not found at the site.

Table 1. Special Status Animals and Plants with Potential to Occur in the Vicinity of the Project Site, Marin County, California

SPECIES	STATUS ² FED/STATE/CNPS ³	HABITAT	OCCURRENCE ON THE PROJECT SITE
San Pablo vole <i>(Microtus californicus sanpabloensis)</i>	--/CSC	Found in salt marshes of San Pablo Creek on the south shore of San Pablo Bay. Constructs burrow in soft soil. Feeds on grasses, sedges and herbs. Forms a network of runways leading from the burrow.	Not present. Suitable habitat is not found at the site.
American badger <i>(Taxidea taxus)</i>	-/CSC	Drier open stages of most shrub, forest, and herbaceous habitats; needs sufficient food, friable soils and open, uncultivated ground.	Not present. Suitable habitat is not found at the site.
Pallid bat <i>Antrozous pallidus</i>	-/CSC	Roosts primarily in oak woodland and ponderosa pine habitats; forages in open areas..	Not present. Suitable habitat is not found at the site.
Hoary bat <i>(Lasivus cinereus)</i>	-/-	Prefers open habitats with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees.	Not present. Suitable habitat is not found at the site.
Townsend's big-eared bat <i>(Corynorhinus townsendii)</i>	--/CCT,CSC	Found in desert scrub and coniferous forests. Roost in caves or abandoned mines and occasionally are found to roost in buildings.	Not present. Suitable habitat is not found at the site.
Southern sea otter <i>(Enhydra lutris nereis)</i>	FT/FP	Occurs in nearshore marine environments from about Ano Nuevo (San Mateo Co.) to Point Sal (Santa Barbara Co.). Needs canopies of giant and bull kelp for rafting and feeding . Prefers rocky substrates with abundant invertebrates. CNDDDB reports a sighting in Sausalito in 1997.	Not present. Suitable habitat is not found at the site.

Table 1. Special Status Animals and Plants with Potential to Occur in the Vicinity of the Project Site, Marin County, California

SPECIES	STATUS ² FED/STATE/CNPS ³	HABITAT	OCCURRENCE ON THE PROJECT SITE
PLANTS			
Napa false indigo (<i>Amorpha californica</i> var. <i>napensis</i>)	--/--/1B.2	Broadleafed upland forest, chaparral, cismontane woodland. Openings in forest or woodland or in chaparral. 150-2000m.	Not present. Suitable habitat is not found at the site.
Bent-flowered fiddleneck (<i>Amsinckia lunaris</i>)	--/--/1B.2	Cismontane woodland, valley and foothill grassland. 5-500m	Not present. Suitable habitat is not found at the site.
Mt. Tamalpais manzanita (<i>Arctostaphylos montana</i>)	--/--/1B	Chaparral, valley and foothill grassland. Known from fewer than 20 occurrences in the Mt. Tamalpais area, Marin County. Serpentine slopes in chaparral and grassland: 160-760 m.	Not present. Suitable habitat is not found at the site.
Marin manzanita (<i>Arctostaphylos virgata</i>)	--/--/1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, north coast coniferous forest. Only known from about 20 EOS in Marin County. On sandstone or granitic soil 60–700 m.	Not present. Suitable habitat is not found at the site.
Coastal marsh milk-vetch (<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>)	-/--/1B.2	Mesic sites in coastal dunes or along streams or coastal salt marshes. 0-30m.	Not present. Suitable habitat is not found at the site.
Alkali milk-vetch (<i>Astragalus tener</i> var. <i>tener</i>)	--/--/1B.2	Inhabits low ground, alkali flats and flooded land in valley and foothill grasslands or in playas or vernal pools. 1-170m.	Not present. Suitable habitat does not occur at the site.
Thurber's reed grass (<i>Calamagrostis crassiglumis</i>)	--/--/2B.1	Usually found in marshy swales surrounded by grassland or coastal scrub. 10-45m.	Not present. Suitable habitat is not found at the site.
Tiburon mariposa-lily (<i>Calochortus tiburonensis</i>)	FT/CT/1B.1	Serpentine slopes in Valley and Foothill Grassland. Found on open rocky slopes 50-150 m.	Not present. Suitable habitat is not found at the site.

Table 1. Special Status Animals and Plants with Potential to Occur in the Vicinity of the Project Site, Marin County, California

SPECIES	STATUS ² FED/STATE/CNPS ³	HABITAT	OCCURRENCE ON THE PROJECT SITE
Coastal bluff morning-glory (<i>Calystegia purpurata</i> ssp. <i>saxicola</i>)	--/--/1B.2	Found Coastal dunes, Coastal scrub, Coastal bluff scrub and North coniferous forest. 5-430m.	Not present. Suitable habitat is not found at the site.
Lyngbye's sedge (<i>Carex lyngbyei</i>)	-/-/2B.2	Marshes and swamps (brackish or freshwater) at sea level.	Not present. Suitable habitat is not found at the site.
Northern meadow sedge (<i>Carex praticola</i>)	--/--/1B.2	Meadows and seeps. Moist to wet meadows. 15-3200 m.	Not present. Suitable habitat is not found at the site.
Tiburon paintbrush (<i>Castilleja affinis</i> ssp. <i>neglecta</i>)	FE/ST/1B.2	Rocky serpentine sites within valley and foothill grassland. 75-400m.	Not present. Suitable habitat is not found at the site.
Mason's ceanothus (<i>Ceanothus masonii</i>)	--/Rare/1B.2	Chaparral. Endemic to Marin County. Serpentine ridges or slopes in chaparral or transition zone. 180-460.	Not present. Suitable habitat is not found at the site.
Point Reyes salty bird's beak (<i>Chloropyron maritimum palustre</i>)	-/-/1B.2	Usually in coastal salt marsh with <i>Salicornia</i> , <i>Distichlis</i> , <i>Jaumea</i> , <i>Spartina</i> , etc.	Not present. Suitable habitat is not found at the site.
Soft salty bird's beak <i>Chloropyron molle</i> ssp. <i>molle</i>	FT/Rare/1B.1	Found in Coastal salt marsh with <i>Distichlis</i> , <i>Salicornia</i> , <i>Frankenia</i> , etc. 0-5 m.	Not present. Suitable habitat is not present at the site.
San Francisco Bay spineflower (<i>Chorizanthe cuspidata cuspidata</i>)	--/--/1B.1	Found on sandy soil on terraces and slopes within coastal bluff scrub, coastal dunes, coastal prairie and coastal scrub. 5-550m.	Not present. Suitable habitat is not found at the site.
Franciscan thistle (<i>Cirsium andrewsii</i>)	-/-/1B.2	Coastal bluff scrub, broadleaved upland forest and coastal scrub. Sometimes found in serpentine seeps.	Not present. Suitable habitat is not found at the site.
Mt. Tamalpais thistle (<i>Cirsium hydrophilum</i> var. <i>vaseyi</i>)	--/--/1B.2	Broadleafed upland forest, chaparral. Endemic to Marin County. Serpentine seeps and streams in chaparral and woodland. 265-620 m.	Not present. Suitable habitat is not found at the site.

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SPECIES	STATUS ² FED/STATE/CNPS ³	HABITAT	OCCURRENCE ON THE PROJECT SITE
San Francisco collinsia (<i>Collinsia multicolor</i>)	FE/CE/1B.1	Found in closed-cone coniferous forest and coastal scrub. Usually on decomposed mudstone shale mixed with humus. 30-250m.	Not present. Suitable habitat is not found at the site.
Western leatherwood (<i>Dirca occidentalis</i>)	-/-/1B.2	Occurs on brushy slopes and mesic sties in in broadleaved upland forest, chaparral, close-cone coniferous forest and a variety of other forested habitats. 30-550m.	Not present. Suitable habitat is not found at the site.
Tiburon buckwheat (<i>Eriogonum luteolum</i> var. <i>caninum</i>)	--/--/1B.2	Found in serpentine soils in sandy to gravelly sites within chaparral, valley and foothill grassland, cismontane woodland and coastal prairie. 0-700 m.	Not present. Suitable habitat is not found at the site.
Minute pocket moss (<i>Fissidens pauperculus</i>)	--/--/1B.2	Found in North Coast coniferous forest. This moss grows on damp soil along the Coast and found in dry streambeds and on stream banks. 10-1024 m.	Not present. Suitable habitat is not found at the site.
Marin checker lily (<i>Fritillaria lanceolata</i> var. <i>tristulis</i>)	--/--/1B.1	Coastal bluff scrub, coastal scrub, coastal prairie. Endemic to Marin County. Occurrences reported from canyons and riparian areas as well as rock outcrops; often on serpentine. 30–300 m.	Not present. Suitable habitat is not found at the site.
Fragrant fritillary (<i>Fritillaria liliacea</i>)	--/--/1B.2	Coastal scrub, valley and foothill grassland, coastal prairie. Often on serpentine; various soils reported though usually clay, in grassland. 3-410m.	Not present. Suitable habitat is not found at the site.
Blue coast gilia (<i>Gilia capitata</i> ssp. <i>chamissonis</i>)	-/-/1B.1	Coastal dunes and coastal scrub. 2-200m.	Not present. Suitable habitat is not found at the site.
Dark-eyed gilia (<i>Gilia millefoliata</i>)	--/--/1B	Coastal dunes. 2-20m.	Not present. Suitable habitat is not found at the site.

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SPECIES	STATUS ² FED/STATE/CNPS ³	HABITAT	OCCURRENCE ON THE PROJECT SITE
Diablo helianthela (<i>Helianthela castenea</i>)	--/--/1B.2	Broadleaved upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Usually in chaparral/oak woodland interface in rocky, azonal soils. Often in partial shade. 25-1150m.	Not present. Suitable habitat is not found at the site.
Congested-headed hayfield tarplant (<i>Hemizonia congesta</i> ssp. <i>congesta</i>)	--/--/1B.2	Found in valley and foothill grassland, grassy valleys and hills, often in fallow fields and sometime along roadsides. 20-560 M.	Not present. Suitable habitat is not found at the site.
Marin western flax (<i>Hesperolinon congestum</i>)	FT/CT/1B.1	Chaparral, valley and foothill grassland. Found in serpentine barrens and serpentine grassland and chaparral. 30-365 m.	Not present. Suitable habitat is not found at the site.
Loma Prita hoita (<i>Hoita strobilina</i>)	--/--/1B.1	Found in mesic sites and in serpentine within chaparral, cismontane woodland, and riparian woodland. 60-975 M.	Not present. Suitable habitat is not present at the site.
Santa Cruz tarplant (<i>Holocarpha macradenia</i>)	FT/CE/1B	Sandy soil or sandy clay in coastal prairie and valley and foothill grassland. 10-260m.	Not present. Suitable habitat is not found at the site.
Point Reyes horkelia (<i>Horkelia marinensis</i>)	-/-/1B.2	Coastal dunes, coastal prairie and coastal scrub; in sandy flats and dunes of grassland or scrub habitats near the coast. 5-30m.	Not present. Suitable habitat is not found at the site.
Thin-lobed horkelia (<i>Horkelia tenuiloba</i>)	--/--/1B.2	Coastal scrub, chaparral. Sandy soils, mesic openings. 45–500 m.	Not present. Suitable habitat is not found at the site.
Island tube lichen (<i>Hypogymnia schizidiata</i>)	--/--/1B.3	Found in chaparral and closed-cone pine forest on the bark and wood of hardwoods and conifers. 260-540 m.	Not present. Suitable habitat is not found at the site.
Small groundcone (<i>Kopsiopsis hookeri</i>)	--/--/2B.3	North Coast coniferous forest. Found in open woods and shrubby places, generally on Gaultheria shallon. 120-1435 m.	Not present. Suitable habitat is not found at the site.

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Tamalpais lessingia (<i>Lessingia micradenia</i> var. <i>micradenia</i>)	-/--/1B.2	Chaparral, valley and foothill grassland. Endemic to Marin County. Usually on serpentine, in serpentine grassland or serpentine chaparral. Often on roadsides. 100–305 m.	Not present. Suitable habitat is not found at the site.
Marsh microseris (<i>Microseris paludosa</i>)	-/--/1B.2	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. 5-300m.	Not present. Suitable habitat is not found at the site.
Marin County navarretia (<i>Navarretia rosulata</i>)	-/--/1B.2	Closed-cone coniferous forest, chaparral. Known only from Marin and Napa Counties. Dry, open rocky places; can occur on serpentine. 200–635 m.	Not present. Suitable habitat is not found at the site.
White-rayed pentachaeta (<i>Pentachaeta bellidiflora</i>)	FE/CE/1B.1	Mostly on soils derived from serpentine bedrock or open, dry rocky slopes and grassy areas of valley and foothill grassland. 35-620m.	Not present. Suitable habitat is not found at the site.
Hairless popcornflower (<i>Plagiobothrys glaber</i>)	-/--/1A	Found in meadows and seeps, marshes and swamps. Coastal salt marshes and alkaline meadows. 5-125m.	Not present. Suitable habitat is not found at the site.
North Coast semaphore grass (<i>Pleuropogon hooverianus</i>)	--/CT/1B.1	Broadleafed upland forest, meadows and seeps, north coast coniferous forest. Wet grassy, usually shady areas, sometimes freshwater marsh; associated with forest environments. 10–1150 m.	Not present. Suitable habitat is not found at the site.
Marin knotweed (<i>Polygonum marinense</i>)	-/--/3.1	Coastal salt marshes and brackish marshes. 0-10m.	Not present. Suitable habitat is not found at the site.
Oregon polemonium (<i>Polemonium carneum</i>)	-/--/2B.2	Found in Coastal prairie, coastal scrub and lower montane coniferous forest. 0-1830m.	Not present. Suitable habitat is not found at the site.

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SPECIES	STATUS ² FED/STATE/CNPS ³	HABITAT	OCCURRENCE ON THE PROJECT SITE
Tamalpais oak <i>Quercus parvula</i> var. <i>tamalpaisensis</i>	-/-/1B.3	Lower montane coniferous forest. 100-750m.	Not present. Suitable habitat is not found at the site.
Point Reyes checkerbloom <i>(Sidalcea calycosa</i> ssp. <i>rhizomata)</i>	-/-/ 1B.2	Freshwater marshes and swamps near the coast. 5-75m.	Not present. Suitable habitat is not found at the site.
Marin checkerbloom <i>(Sidalcea hickmanii</i> ssp. <i>viridis)</i>	--/--/1B.1	Found in serpentine or volcanic soils in chaparral. Sometimes appears after burns. 1-425 m.	Not present. Suitable habitat is not found at the site.
Long-styled sand-spurry <i>(Spergularia macrotheca</i> var. <i>longistyla)</i>	--/--/1B.2	Marshes and swamps, meadows and seeps. Alkaline sites. 0-220m.	Not present. Suitable habitat is not found at the site.
Santa Cruz microseris <i>(Stebbinsoseris decipiens)</i>	--/--/1B	Found in broadleaved upland forest, closed-cone coniferous forest, chaparral, coastal prairie and coastal scrub. Occurs in open areas on seaward slopes in loose or disturbed soil, usually derived from sandstone, shale or serpentine. 10-500m.	Not present. Suitable habitat is not found at the site.
Tamalpais jewel-flower <i>(Streptanthus batrachopus)</i>	--/--/1B.3	Closed-cone coniferous forest, chaparral. Endemic to Marin County. Talus serpentine outcrops. 410-650 m.	Not present. Suitable habitat is not found at the site.
Tiburon jewelflower <i>(Streptanthus glandulosus</i> ssp. <i>niger)</i>	FE/CE/1B.1	Found on shallow, rocky, serpentine slopes in Valley and Foothill grassland. 30-150 m.	Not present. Suitable habitat is not present at the site.
Mt. Tamalpais bristly jewelflower <i>(Streptanthus glandulosus</i> spp. <i>pulchellus)</i>	--/--/1B.2	Serpentine slopes in chaparral and valley and foothill grassland. 125-670 M.	Not present. Suitable habitat is not found at the site.
Suisun Marsh aster <i>(Symphyotrichum lentum)</i>	--/--/1B.2	Both brackish and freshwater marshes and swamps. 0-3m.	Not present. Suitable habitat is not present at the site.

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SPECIES	STATUS ² FED/STATE/CNPS ³	HABITAT	OCCURRENCE ON THE PROJECT SITE
Two-fork clover (<i>Trifolium amoenum</i>)	FE/-/1B.1	Valley and foothill grassland, coastal bluff scrub, sometimes on serpentine soil. 5-560m.	Not present. Suitable habitat is not found at the site.
Saline Clover (<i>Trifolium depauperatum</i> var. <i>hydrophilum</i>)	--/--/1B.2	Marshes and swamps, mesic alkaline sites, vernal pools in valley and foothill grassland. 0-300m.	Not present. Suitable habitat is not found at the site.
Coastal triquetrella (<i>Triquetrella californica</i>)	-/-/1B.2	Coastal bluff scrub and coastal scrub. 10-100m.	Not present. Suitable habitat is not found at the site.

1. Source: California Natural Diversity Data Base, Natural Heritage Division, California Department of Fish and Wildlife for the San Quentin 7.5 Minute Quadrangle Map and surrounding areas, March 2021.

2. Status Codes:

FE	Federal-listed Endangered	CE	California State-listed Endangered
FT	Federal-listed Threatened	CT	California State-listed Threatened
FPE	Federally Proposed Endangered	CR	California Rare
FPT	Federally Proposed Threatened	FP	California Fully Protected
BCC	USFWS Bird Species of Conservation Concern	CSC	CDFW Species of Special Concern
		WL	CDFW Watch List Species

3. Rare Plant Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere.
 California Rare Plant Rank 1B: Plants rare, threatened, or endangered in California and elsewhere.
 California Rare Plant Rank 2A: Plants presumed extirpated in California, but more common elsewhere.
 California Rare Plant Rank 2B: Plants rare, threatened, or endangered in California, but more numerous elsewhere.
 California Rare Plant Rank 3: Plants about which more information is needed – a review list.
 California Rare Plant Rank 4: Plants of limited distribution – a watch list.

CNPS Threat Ranks

- 0.1-Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
 0.2-Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
 0.3-Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Exhibit 3

Wetland Determination Data Form-Arid West Region

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 22 Beach Drive Project City/County: San Rafael / Marin County Sampling Date: 9-9-2022
 Applicant/Owner: Sandra Cook State: CA Sampling Point: SP-1
 Investigator(s): Robert F. Perrera Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): slope along Beach Drive Local relief (concave, convex, none): convex Slope (%): 5
 Subregion (LRR): C - Mediterranean California Lat: 37.974645 Long: 122.478753 Datum: NA
 Soil Map Unit Name: Tocaloma-McMullin-Urban land complex, 30 to 50 percent slopes NWI classification: NA
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: SP-1 taken along slope of Beach Drive road levee on the inboard-side of the Beach Drive Wetlands.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
_____ = Total Cover				
Herb Stratum (Plot size: <u>3x3</u>)				
1. <u>Carpobrotus chilensis</u>	<u>85</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Salicornia pacifica</u>	<u>10</u>	<u>No</u>	<u>OBL</u>	
3. <u>Avena fetua</u>	<u>5</u>	<u>No</u>	<u>UPL</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		
Remarks:				

SOIL

Sampling Point: SP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR2/1	100					Sandy L	90%organics w sand/gravel
5+								hit rock

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)			Indicators for Problematic Hydric Soils ³ :		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)			
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)				
<input type="checkbox"/> Sandy Gleyed Matrix (S4)					

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

Restrictive Layer (if present): Type: <u>Fill/Rock</u> Depth (inches): <u>5</u>	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:
 Significant amount of debris in the soil profile such as asphalt (1"-2" diameter pieces) and gravel and pebbles (possibly crushed concrete debris/road base) and sandstone.

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks:
 There is a culvert on the bay-side which prevents full tidal action within the Beach Drive Wetlands. On the day of the site visit the flap gate had been manually secured open. I would call this area "muted" or managed tidal.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 22 Beach Drive Project City/County: San Rafael / Marin County Sampling Date: 9-9-2021
 Applicant/Owner: Sandra Cook State: CA Sampling Point: SP-2
 Investigator(s): Robert F. Perrera Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): slope along Beach Drive Local relief (concave, convex, none): convex Slope (%): 2
 Subregion (LRR): C - Mediterranean California Lat: 37.974652 Long: -122.478748 Datum: NA
 Soil Map Unit Name: Tocaloma-McMullin-Urban land complex, 30 to 50 percent slopes NWI classification: NA
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: SP-2 taken about 1-foot up from the toe of slope of Beach Drive road levee on the inboard-side of the Beach Drive Wetlands.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
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:				
<input checked="" type="checkbox"/> Dominance Test is >50%				
<input type="checkbox"/> Prevalence Index is ≤3.0 ¹				
<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)				
<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks:				

SOIL

Sampling Point: SP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR3/1	98	7.5YR4/6	2	C	PL/M	Silty CL	redox distinct/w gravel asphalt
4-15	10YR4/2	100						To wet to see redox, sulfur smell

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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)
- Stratified Layers (A5) **(LRR C)**
- 1 cm Muck (A9) **(LRR D)**
- 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)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR C)**
- 2 cm Muck (A10) **(LRR B)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Some debris in the soil profile such as asphalt and gravel and pebbles (possibly crushed concrete debris/road base).

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) **(Nonriverine)**
- Sediment Deposits (B2) **(Nonriverine)**
- Drift Deposits (B3) **(Nonriverine)**
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- 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)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) **(Riverine)**
- Sediment Deposits (B2) **(Riverine)**
- Drift Deposits (B3) **(Riverine)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): 5
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): 5

Wetland Hydrology Present? Yes No

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

Remarks:

There is a culvert on the bay-side which prevents full tidal action within the Beach Drive Wetlands. On the day of the site visit the flap gate had been manually secured open. I would call this area "muted" or managed tidal. Low tide but water was on the site, likely does not drain well due to undersized culvert.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 22 Beach Drive Project City/County: San Rafael / Marin County Sampling Date: 9-9-2022
 Applicant/Owner: Sandra Cook State: CA Sampling Point: SP-3
 Investigator(s): Robert F. Perrera Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): slope along rip-rap levee Local relief (concave, convex, none): convex Slope (%): 10
 Subregion (LRR): C - Mediterranean California Lat: 37.974560 Long: 122.478882 Datum: NA
 Soil Map Unit Name: Tocaloma-McMullin-Urban land complex, 30 to 50 percent slopes NWI classification: NA
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: SP-3 taken along slope of rip-rap levee on full tidal wetland side of Beach Drive road.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: <u>3x3</u>)				
1. <u>Carpobrotus chilensis</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Frankenia salina</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	
3. <u>Avena fetua</u>	<u>5</u>	<u>No</u>	<u>UPL</u>	
4. <u>Salicornia pacifica</u>	<u>5</u>	<u>No</u>	<u>OBL</u>	
5. <u>Salsola soda</u>	<u>10</u>	<u>No</u>	<u>FACW</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>20</u> % Cover of Biotic Crust _____				
Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				

Remarks:
 Majority of Pickleweed rooted in the tidal wetland growing up the rock. Bare ground refers to the rip-rap.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 22 Beach Drive Project City/County: San Rafael / Marin County Sampling Date: 9-9-2021
 Applicant/Owner: Sandra Cook State: CA Sampling Point: SP-4
 Investigator(s): Robert F. Perrera Section, Township, Range: NA
 Landform (hillslope, terrace, etc.): slope along rip-rap levee Local relief (concave, convex, none): convex Slope (%): 2
 Subregion (LRR): C - Mediterranean California Lat: 37.974561 Long: -122.478893 Datum: NA
 Soil Map Unit Name: Tocaloma-McMullin-Urban land complex, 30 to 50 percent slopes NWI classification: NA
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: SP-4 taken near the toe of slope of the rip-rap.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	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 = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Herb Stratum (Plot size: <u>5x5</u>)				
1. <u>Salsola soda</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Salicornia pacifica</u>	<u>70</u>	<u>Yes</u>	<u>OBL</u>	
3. <u>Carpobrotus chilensis</u>	<u>5</u>	<u>No</u>	<u>FACU</u>	
4. <u>Grindelia integrifolia</u>	<u>5</u>	<u>No</u>	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Remarks:

SOIL

Sampling Point: SP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4	10YR4/2	98	7.5YR4/6	2	C	M	Silty CL	redox distinct/w gravel
4-8	10YR4/3	95	7.5YR4/4	5	C	M	Silty CL	redox distinct, 2% 5/8 color

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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)
- Stratified Layers (A5) **(LRR C)**
- 1 cm Muck (A9) **(LRR D)**
- 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)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) **(LRR C)**
- 2 cm Muck (A10) **(LRR B)**
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Some debris in the soil profile such as asphalt and gravel and pebbles (possibly crushed concrete debris/road base etc.)

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) **(Nonriverine)**
- Sediment Deposits (B2) **(Nonriverine)**
- Drift Deposits (B3) **(Nonriverine)**
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- 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)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) **(Riverine)**
- Sediment Deposits (B2) **(Riverine)**
- Drift Deposits (B3) **(Riverine)**
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): _____
 Water Table Present? Yes No Depth (inches): _____
 Saturation Present? (includes capillary fringe) Yes No Depth (inches): _____

Wetland Hydrology Present? Yes No

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

Remarks:

Exhibit 4

Site Photos

EXHIBIT 4. SITE PHOTOGRAPHS



Looking at shovel in Data Point 2. Data point 1 approximately 4 feet up the slope.



Photograph of Sample Point 2 redoximorphic features.

EXHIBIT 4. SITE PHOTOGRAPHS



Shovel is within Sample Point 3 pit, and you can see the pickleweed that was growing up the rip-rap. You can see the Russian thistle in the foreground. Sample point 4 taken approximately 2 feet down the slope from the shovel.