COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: March 27, 2019

TO: Planning Commission

FROM: Planning Staff

SUBJECT: EXECUTIVE SUMMARY: Consideration of a Coastal Development Permit Amendment and adoption of a Subsequent Mitigated Negative Declaration for voluntary soil remediation and land restoration at the former Half Moon Bay Gun Club located at 3500 Frenchman's Creek in the unincorporated area of El Granada. The project is appealable to the California Coastal Commission.

County File Number: PLN 2015-00245 (POST)

PROPOSAL

The applicant is seeking a Coastal Development Permit Amendment for the voluntary soil remediation and restoration of five (5) "Decision Unit" (DU) areas, totaling 9,300 sq.ft. in area, at the former Half Moon Bay Gun Club, which exists on a 357.13-acre parcel currently owned by Peninsula Open Space Trust (POST). The project involves excavating approximately 300 cubic yards of soil at depths of approximately one-foot over the five (5) DU areas in order to remove lead and other metals left over from the site's previous use as a firing range. No construction is proposed, except for drainage improvements along the access road to allow land access beyond the project area. No trees will be removed, and no fill is proposed for the soil excavation areas.

RECOMMENDATION

That the Planning Commission adopt the Subsequent Mitigated Negative Declaration and approve the Coastal Development Permit Amendment, County File Number PLN2015-00245, by making the required findings and adopting the conditions of approval contained in Attachment A.

SUMMARY

A Coastal Development Permit (CDP) and Grading Permit, including an Initial Study (IS) and Mitigated Negative Declaration (MND), were approved on May 12, 2016 for the original soil remediation and restoration project. In early 2017, the applicant identified new wetland areas adjacent to the remediation sites that will be negatively impacted by implementation of the project. These new, previously unanticipated impacts required revising and re-circulating the previously adopted IS and Mitigated Negative

Declaration. Measures to minimize impacts to these wetland areas also require significant modification to the project scope of the approved Coastal Development Permit. No modifications to the original Grading Permit are needed; therefore, the CDP Amendment is being forwarded to the Planning Commission for approval. The Midcoast Community Council reviewed the project and had no comments. Staff recommends approval of this CDP Amendment.

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COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: March 27, 2019

TO: Planning Commission

FROM: Planning Staff

SUBJECT: Consideration of a Coastal Development Permit Amendment, pursuant to Section 6328.4 of the County Zoning Regulations, and adoption of a Subsequent Mitigated Negative Declaration, pursuant to the California Environmental Quality Act (CEQA), for voluntary soil remediation and land restoration at the former Half Moon Bay Gun Club located at 3500 Frenchman's Creek in the unincorporated area of El Granada. The project is appealable to the California Coastal Commission.

County File Number: PLN 2015-00245 (POST)

PROPOSAL

The applicant is seeking a Coastal Development Permit Amendment for the voluntary soil remediation and restoration of five (5) "Decision Unit" (DU) areas, totaling 9,300 sq. ft. in area, at the former Half Moon Bay Gun Club, which exists on a 357.13- acre parcel currently owned by Peninsula Open Space Trust (POST). The project involves excavating approximately 300 cubic yards of soil at depths of approximately one-foot over the five (5) DU areas. Remedial action includes the removal of soil containing lead bullets, casings, shells, other metals, and polyromantic hydrocarbons at higher concentrations than the Environmental Screening Levels established by the Regional Water Quality Control Board (RWQCB). No construction is proposed, except for drainage improvements along the access road to allow land access beyond the project area. No trees will be removed, and no fill, including import fill, is proposed for soil excavation areas. Erosion control blankets and seed-free wattles will be used to stabilize disturbed areas. Revegetation of disturbed areas will be permitted to occur naturally with surrounding native vegetation, through the application of a local mix of native seeds, and with measures to improve drainage control along the access route.

This project was previously reviewed and approved by the Community Development Director on May 12, 2016. After approval, new wetlands were discovered on the site, and further biological investigation was completed. A Subsequent Initial Study (IS) and Mitigated Negative Declaration (MND) were prepared and circulated for the subject project amendment to address project changes to minimize impacts to sensitive habitats.

The project is intended to achieve a conservative, unrestricted lead cleanup goal of 80 milligrams of lead per kilogram of soil, which is acceptable for residential land use pursuant to RWQCB standards (RWQCB Environmental Screening Levels, February 2016). No residential land use is proposed for future use of the site.

RECOMMENDATION

That the Planning Commission adopt the Subsequent Mitigated Negative Declaration and approve the Coastal Development Permit Amendment, County File Number PLN 2015 00245, by making the required findings and adopting the conditions of approval contained in Attachment A.

BACKGROUND

Report Prepared By: Summer Burlison, Project Planner; 650/363-1815

Owner/Applicant: Peninsula Open Space Trust (POST), Attn: Tiffany Edwards

Location: 3500 Frenchman's Creek Road, El Granada

APN: 047-350-020

Size: 357.13 acres

Existing Zoning: RM-CZ/DR/CD (Resource Management-Coastal Zone/Design Review/Coastal Development) and RM (Resource Management)

Local Coastal Plan/General Plan Designation: Open Space

Sphere-of-Influence: N/A

Williamson Act: N/A; the parcel is not under a Williamson Act contract.

Existing Land Use: Maintained as open space by POST; the land was formally used by the Half Moon Bay Gun Club as a private gun club.

Water Supply: N/A; the proposed restoration does not require water service.

Sewage Disposal: N/A; the proposed restoration does not require sewage disposal.

Flood Zone: Zone X (area of minimal flooding); Community Panel Number 06081C0140E, effective October 16, 2012.

Environmental Evaluation: A Subsequent Initial Study and Mitigated Negative Declaration were prepared and circulated from December 14, 2018 to

January 14, 2019, State Clearinghouse No. 2018122025, for the subject CDP Amendment. During the 30-day public review period, comments were received from the Native American Heritage Commission. These comments are addressed in Section C of this staff report.

Setting: The 357.13-acre parcel is part of a larger 896-acre area of land that was acquired by POST in 2014 and is maintained as open space. The project site consists of moderately steep, heavily wooded and grass-covered open space and contains a single-story clubhouse formerly used by the Half Moon Bay Gun Club. The project site is approximately two miles northeast from El Granada Boulevard and is accessible by a private vehicle access road from El Granada Boulevard, traversing State Park lands before passing through the project area. Surrounding land use under State Parks ownership is rural public open space consisting of moderately to steep-sloped heavily vegetated hills with very few rural residential properties.

New wetlands discovered on the site after the project was originally approved consist of approximately 0.06 acres of seasonal emergent wetlands and approximately 0.02 acres of arroyo willow thicket wetland. Based on observations by WRA Environmental Consultants, the wetlands in the project area do not appear to have a direct surface connection to Locks Creek, an intermittent “blue line stream” mapped downslope from the project area and instead infiltrate into the well-drained loamy soil. The hydrological sources of the wetlands are upslope seeps.

Seasonal Emergent Wetlands

In the project area, three seasonal emergent wetlands occur as a result of seep hydrology and form in anthropogenic flat areas, such as road beds and the area adjacent to the Gun Club building. The vegetation in the seasonal emergent wetlands is characterized by herbaceous vegetation, including watercress, rush, common bog rush, slender willow herb, and water speedwell. These areas meet the wetland indicator requirements (presence of hydrophytic vegetation and percentage ground cover of those species) to be considered potentially jurisdictional wetland features. No tree species were present in seasonal emergent wetlands.

Two seasonal emergent wetlands occur northwest and southeast of the Gun Club building. When hydrologic input is sufficient, both of these wetlands drain to the adjacent road via small, linear, manmade excavations, and then infiltrate into the soil as sheet flow. The third seasonal emergent wetland forms were a seep located in a road cut drains into the roadbed and also into a small, manmade ditch adjacent to the roadbed. When the hydrological input is sufficient, this wetland drains downslope to an adjacent arroyo willow thicket wetland.

Arroyo Willow Thicket Wetlands

Additionally, two small arroyo willow thicket wetlands were located on steep slopes in areas with dense arroyo willow cover that are associated with seep hydrology.

Vegetation in this wetland is characterized by a dense shrub canopy consisting of arroyo willow and shrubby-to-herbaceous understory primarily including a mix of California blackberry and wetland species, such as common bog rush and brown-headed rush. These areas meet the wetland indicator requirements (presence of hydrophytic vegetation and percentage ground cover of those species) to be considered potentially jurisdictional wetland features. Given that the arroyo willow thicket wetland is not associated with a watercourse, it is not considered riparian habitat.

One arroyo willow thicket wetland is located on the slope north of the Gun Club building, with the primary hydrological input from a hillside seep that flows downhill, draining onto the manmade terrace into a seasonal wetland. The other arroyo willow thicket wetland is located south of the Gun Club building, between two dirt roads, with its primary input from runoff from an adjacent seasonal emergent wetland located upslope that drains into this wetland, and possibly groundwater seepage.

Background: A Coastal Development Permit (CDP) and Grading Permit, including an Initial Study and Mitigated Negative Declaration, were approved on May 12, 2016. Subsequent to this approval, new biological resources (seasonal wetlands) were discovered at the site that were not known at the time of the original project approval, requiring additional, new mitigation measures to address. A Subsequent Initial Study and Mitigated Negative Declaration (MND) were prepared for modifications to the project scope to amend the original CDP. No modifications to the original Grading Permit are needed.

Chronology:

Date		Action
May 12, 2016	-	Final approval of original CDP and Grading Permit applications, PLN2015-00245, for soil remediation and land restoration at the former Half Moon Bay Gun Club.
May 12, 2017	-	CDP and Grading Permit, PLN2015-00245, renewal (one year) due to additional biological impact analysis.
April 16, 2018	-	CDP Amendment, PLN2015-00245, submitted for scope modifications to the original CDP approval.
June 8, 2018	-	CDP Amendment deemed complete.
December 14, 2018 January 14, 2019	-	Subsequent Initial Study and Mitigated Negative Declaration circulated for a 30-day review period.
March 27, 2019	-	Planning Commission hearing for CDP Amendment.

DISCUSSION

A. KEY ISSUES

1. Conformance with the General Plan

Staff has reviewed and determined that the project is in conformance with all applicable General Plan Policies, including the following:

a. Vegetative, Water, Fish and Wildlife Resources

Policy 1.21 (*Importance of Sensitive Habitats*), Policy 1.23 (*Regulate Development to Protect Vegetative, Water, Fish and Wildlife Resources*), Policy 1.25 (*Protect Vegetative Resources),* and the applicable Sensitive Habitats policies, including Policy 1.28 (*Regulate Development to Protect Sensitive Habitats*), Policy 1.30 (*Uses Permitted in Sensitive Habitats*), Policy 1.32 (*Regulate the Location, Siting and Design of Development in Sensitive Habitats*), Policy 1.35 (*Protect Productive Uses of Vegetative, Water, Fish and Wildlife Resources*), and Policy 1.45 (*Improvement of Damaged Resources*) seek to regulate land uses and activities that may have adverse impacts on vegetative, water, fish and wildlife resources, and seek to protect these resources.

The project includes the removal of soil containing lead bullets, casings, shells and other metals and polyaromatic hydrocarbons that are currently in higher concentrations than the Environmental Screening Levels established by the Regional Water Quality Control Board (RWQCB). The only construction proposed are drainage improvements, such as replacing a ditch relief culvert, installing three rolling dips and a gravel subdrain, installing two waterbars along the side road, and adding rock to approximately eighty (80) linear feet of the roadway running through the excavation area.

The project site contains federally protected wetlands and non-wetland waters subject to jurisdiction by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. The proposed project involves excavation work that will result in a temporary impact to approximately 1,100 sq. ft. of seasonal emergent wetland and approximately 50 sq. ft. of arroyo willow thicket wetland present at the site. Excavation work will not affect the hydrological sources of the wetlands (upslope seeps and natural runoff), and the excavated areas will not be filled after the contaminated soils are removed. Therefore, the impacted wetland areas will be deeper and remain inundated for a greater duration after project completion than current conditions allow. Mitigation measures from the Subsequent MND have been included

as conditions of approval to ensure that all necessary federal and state permits are obtained for the work and any temporary adverse effects on the wetland areas are mitigated to a less than significant level.

According to the Biological Impact Assessment prepared by WRA Environmental Consultants (WRA), dated April 2018, the project area contains San Mateo tree lupine (*Lupinus arboreus var. eximius)*, a rare, special-status plant species. One plant was found near the excavation area at DU-10 and others are growing in abundance in the disturbed coastal scrub surrounding the stockpile area, as well as in the northern section of the stockpile zone. The applicant is proposing, under this Amendment, to move the stockpile of soil north, and also have it reduced in size from the original project scope, to minimize the extent of San Mateo tree lupine individuals that would be temporarily and directly impacted by the project. The trees are adapted to some disturbance, and are expected to recolonize the area after the project is completed.

WRA identified three other special-status plant/tree species, Brewer's calandrinia (*calandrinia breweri, Rank 4.2*), Western leatherwood (*dirca occidentalis,* Rank 1B.2), and California Bottle Brush (*Elymus californicus* Rank 4.3) that are likely to occur in the area, but were not observed during surveys done at blooming periods.

According to WRA, the California red-legged frog (CRLF) (*Rana draytonii*) and the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) have been documented within the study area. However, the project should result in a net benefit to CRLF habitat. Once completed the proposed drainage improvements will minimize roadway ponding and help to maintain water levels within the wetlands. Three additional animal species have a moderate or high potential to occur within the study area; Costa's Hummingbird *(Calypte costae),* Allen's hummingbird *(Selashorus sasin),* and the olive sided flycatcher *(Contopus cooperi).* Mitigation measures from the Subsequent MND, such as minimizing vegetation removal, use of protective barriers around the stockpile area, and pre-construction surveys for special status species, are included as conditions of approval to minimize adverse impacts to these identified special-status wildlife species.

b. Soil Resources

Policy 2.17 *(Regulate Development to Minimize Soil Erosion and Sedimentation)*, Policy 2.23 (*Regulate Excavation, Grading, Filling, and Land Clearing Activities Against Accelerated Soil Erosion*), and

Policy 2.31 *(Support and Reward Soil Improvement Efforts)* seek to minimize soil erosion and sedimentation, and restore degraded soils for a better functioning, healthier ecosystem.

The project includes 300 cubic yards (c.y.) of grading consisting of the removal of approximately one-foot of soil in five separate areas of a former private gun range. The grading process will be initiated by mobilization to the project site, followed by marking and clearing of planned excavation areas prior to excavation. Excavated soil will be transferred to a separate on-site staging area where stockpiles will be contained on, and covered by, plastic sheeting. Confirmation sampling will be conducted to confirm that the remaining soil meets remedial goals while stockpiled soil will be transported to an approved off-site disposal facility. Minor grading for drainage improvements to the road in the vicinity of the excavation area is expected to be completed in one to two days. The applicant proposes to implement erosion control measures, including erosion control blankets and natural, native revegetation of disturbed slopes, to ensure that soil erosion is minimized. Mitigation measures have been included as conditions of approval to further ensure that grading work does not result in significant soil erosion impacts.

c. Historical and Archaeological Resources

Policy 5.21*(Site Treatment)* requires that the applicant take appropriate precautions to avoid damage to historical and archeological resources.

The land was historically used as a private gun range by the previous property owner. The parcel has not been listed as a historical resource pursuant to the State Parks, Office of Historic Preservation, listed California Historical Resources Inventory, or County General Plan Historical and Archaeological Resources Appendices. The project proposes no construction, but would involve 300 c.y. of grading at shallow depths of approximately one-foot over about 9,300 sq. ft. of relatively flat, disturbed land. Therefore, the project is not expected to cause an adverse impact to any archaeological resources or human remains. Nonetheless, mitigation measures from the Subsequent Mitigated Negative Declaration have been included as conditions of approval in Attachment A to ensure that the project will not have any adverse impacts to any unknown archaeological resources or human remains.

2. Conformance with the Local Coastal Program

Staff has reviewed and determined that the project is in conformance with all applicable components of the Local Coastal Program (LCP), including the following:

a. Locating and Planning New Development

Policy 1.1 (*Coastal Development Permits*) and Policy 1.2 (*Definition of Development*) define development to include grading and the placement of any solid material or structure on land, and requires a Coastal Development Permit (CDP) for all such included development.

A CDP was approved for the original project scope, which included a Grading Permit for the excavation of 300 c.y. of soil, on May 12, 2016. Changes to the project due to newly identified biological resources, including new biological impacts, in the project area, and new drainage structures along the existing access road through the project site, warrant the need to amend the CDP, which the applicant is seeking through the subject application.

b. Sensitive Habitats

Policy 7.1 (*Definition of Sensitive Habitats*), Policy 7.4 (*Permitted Uses in Sensitive Habitats*), Policy 7.5 (*Permit Conditions*), and Policy 7.14 (*Definition of Wetlands)* define sensitive habitats as including wetlands; seeks to limit uses permitted in sensitive habitats, including wetland areas, to resource dependent uses; and require appropriate mitigation measures to mitigate adverse impacts. Specifically, Policy 7.16 (*Permitted Uses in Wetlands*) and Policy 7.17 (*Performance Standards in Wetlands*) permits limited uses in wetlands, including fish and wildlife management; and requires for permitted development within wetlands to, among other things, limit motorized machinery to less than 45-dBA at the wetland boundary, perform construction during daylight hours, replace any altered vegetation, and be reviewed by the Department of Fish and Game and State Water Quality control Board.

The project area contains federally protected wetlands and non-wetland waters subject to jurisdiction by the U.S. Army Corps of Engineers, according to a biological assessment by WRA Environmental Consultants. Specifically, 0.06 acres of seasonal emergent wetland and 0.02 acres of arroyo willow thicket wetland are found in the project area. While the project has been designed to the maximum extent feasible to avoid impacts to these wetland features, some of the lead-contaminated soil that the project proposes to

remediate occurs in portions of these wetlands. Specifically, the approximately 300 cubic yards of excavation of contaminated soils proposed under this project will result in a temporary impact to approximately 1,100 sq. ft. (0.03 acres) of seasonal emergent wetlands and approximately 50 sq. ft. (less than 0.01 acre) of arroyo willow thicket wetlands.

According to WRA Environmental Consultants, the wetland portions of the project area are suitable as dispersal habitat for California red-legged frog (CRLF), as evidenced by the observed presence of a young-of-year within the mapped wetlands portion of the project area. While proposed excavation work in the wetlands will result in temporary impacts to CRLF dispersal habitat, the excavated areas will not be filled after the contaminated soil is removed. Therefore, the project will result in the permanent removal of toxic contaminated soils, will expand the availability of aquatic habitat and increase the area, depth, and inundation duration of the existing wetland habitats. As a result, the project will aid in wildlife management within the wetlands by providing a net benefit to CRLF. Furthermore, the hydrological sources of the wetlands (i.e., runoff and natural seeps) will not be impacted by the project.

Mitigation measures recommended by the project biologist, WRA Environmental Consultants, have been included as project conditions of approval, including wetland replacement at a 1:1 ratio and obtaining all necessary permits from the applicable State and Federal permitting agencies. Additionally, conditions of approval have been included in Attachment A to ensure that the project complies with the applicable performance measures from the LCP for motorized machinery and construction hours. Furthermore, planning staff provided project review referrals to the State Department of Fish and Game, U.S. Army Corps of Engineers, and the Regional Water Quality Control Board. While staff received no responses from these agencies, the applicant is working directly with these applicable agencies for all necessary permits to implement the project.

Additionally, Policy 7.32 (*Designation of Habitats of Rare and Endangered Species*), Policy 7.33 (*Permitted Uses*), and Policy 7.34 (Permit Conditions) seek to conserve lands known to have rare and endangered species. See staff's discussion in Section A.1.a. of this staff report for further discussion of impacts to plant and wildlife species.

3. Conformance with the Resource Management-Coastal Zone (RM-CZ) Zoning Regulations

The project parcel is zoned RM-CZ, which requires an RM-CZ permit for development as defined under Section 6903 (Development Review Permit Requirement) of the Zoning Regulations, including but not limited to, the construction of any significant structures, but excludes grading and excavation operations. The project does not propose development as defined under the RM-CZ regulations as construction is limited to minor drainage improvements including the replacement of a ditch relief culvert, and adding a gravel subdrain and drain rock along the access road to reduce road-related ponding and erosion.

4. Conformance with the County Grading Ordinance

The project involves excavating approximately 300 cubic yards at depths of approximately one-foot over approximately 9,300 sq. ft. of flat land. A grading permit for this project was previously approved on May 12, 2016. No changes are proposed under this Amendment to the previously approved grading permit.

B. MIDCOAST COMMUNITY COUNCIL

A project referral for the proposed amendment was sent to the Midcoast Community Council (MCC) on May 16, 2018. The MCC responded to the project referral on May 29, 2018, confirming the MCC had no comments.

C. ENVIRONMENTAL REVIEW

An Initial Study and Mitigated Negative Declaration were adopted on May 12, 2016 for the original project. After adoption, new wetlands were discovered on the site, and further biological investigation was completed. A Subsequent Initial Study (IS) and Mitigated Negative Declaration (MND) were prepared and circulated for the subject project amendment to address project changes to minimize impacts to sensitive habitats. The public comment period commenced on December 14, 2018 and ended on January 14, 2019, State Clearinghouse No. 2018122025. During the 30-day public review period, the following comments were received from the Native American Heritage Commission and Caltrans.

Native American Heritage Commission (NAHC)

Comment 1: While consultation requirements under AB-52 have technically been met, the NAHC recommends that consultation outreach to the tribes on the NAHC list is consistent with Best Practices.

Staff's response: While the project is not subject to AB-52 for California Native American tribal consultation requirements, as no traditionally or culturally affiliated tribe has requested, in writing, to the County to be informed of proposed projects in the geographic project area, staff has sent tribal consultation request letters to five (5) tribes within San Mateo County, in accordance with Best Practices, that the NAHC identifies as having traditional or cultural affiliation within the boundaries of the County of San Mateo. No response was received from any tribe.

Comment 2: Mitigation Measure MM10 states that a qualified archaeologist and the Native American Heritage Commission will make recommendations for the disposition of human remains. This is inaccurate. Please refer to Public Resources Code section 5097.98 for the process of naming a Most Likely Descendant and the recommendations for disposition.

Staff's response: As the NAHC recommends, MM10 has been modified to refer to Public Resources Code section 5097.98 for the correct process of naming a Most Likely Descendant and the recommendations for disposition, see condition of approval no. 21 in Attachment A.

Caltrans

Comment: Project work that requires movement of oversized or excessive load vehicles on State roadways requires a transportation permit that is issued by Caltrans.

Staff's response: Staff has included a condition of approval addressing the requirement for a transportation permit from Caltrans for any oversized or excessive load vehicles on State roadways.

D. REVIEWING AGENCIES

Department of Public Works
Environmental Health Services
Midcoast Community Council
Regional Water Quality Control Board
U.S. Army Corps of Engineers
California Coastal Commission

ATTACHMENTS

A. Recommended Findings and Conditions of Approval
B. Vicinity Map
C. Coastal Development Permit and Grading Permit approval letter, dated April 28, 2016
D. (Amended) Project Plans (2018)
E. Subsequent Initial Study and Mitigated Negative Declaration, 2018 (no attachments)
F. Biological Resources Evaluation, WRA Environmental Consultants, April 2018

Attachment A

County of San Mateo
Planning and Building Department

RECOMMENDED FINDINGS AND CONDITIONS OF APPROVAL

Permit or Project File Number: PLN 2015-00245 Hearing Date: March 27, 2019

Prepared By: Summer Burlison, Project Planner For Adoption By: Planning Commission

RECOMMENDED FINDINGS

For the Environmental Review, Find:

1. That the Subsequent Initial Study and Mitigated Negative Declaration are complete, correct and adequate, and prepared in accordance with the California Environmental Quality Act (CEQA) and the applicable State and County Guidelines. A Subsequent Initial Study and a Mitigated Negative Declaration were prepared and issued for the amended project, with a public review period from December 14, 2018 to January 14, 2019.

2. That, on the basis of the Subsequent Initial Study, comments received hereto, and testimony presented and considered at the public hearing, there is no substantial evidence that the project, if subject to the mitigation measures contained in the Subsequent Mitigated Negative Declaration, will have a significant effect on the environment. The Subsequent Initial Study and Mitigated Negative Declaration identify potentially significant impacts to air quality, biological resources, cultural resources, geology and soils, transportation/traffic, and tribal cultural resources. The mitigation measures contained in the Subsequent Mitigated Negative Declaration have been included as conditions of approval in this attachment. As proposed and mitigated, the project will not result in any significant environmental impacts.

3. That the mitigation measures identified in the Subsequent Mitigated Negative Declaration, agreed to by the applicant, and identified as part of this public hearing, have been incorporated as conditions of project approval.

4. That the Subsequent Initial Study and Mitigated Negative Declaration reflect the independent judgment of the County.

For the Coastal Development Permit Amendment, Find:

5. That the project, as described in the application and accompanying materials required by Section 6328.7 and as conditioned in accordance with Section 6328.14, conforms to the plans, policies, requirements, and standards of the San Mateo County Local Coastal Program (LCP), specifically in regard to the Locating and Planning New Development and Sensitive Habitats Components of the LCP. Staff has reviewed the plans and materials and determined that the project, as proposed and conditioned, will not pose any adverse significant impacts on coastal resources or sensitive habitats in the area.

6. That the project is not subject to the public access and public recreation policies of Chapter 3 of the Coastal Act of 1976 (commencing with Section 30200 of the Public Resources Code) since the project is not located between the nearest public road and the sea, or the shoreline of the Pescadero Marsh.

7. That the project conforms to specific findings required by policies of the San Mateo County LCP with regard to Locating and Planning New Development and Sensitive Habitats Components, as discussed in detail in the Staff Report dated March 27, 2019.

CONDITIONS OF APPROVAL

Current Planning Section

1. This approval applies only to the proposal as described in this report and materials submitted for review and approval by the Planning Commission at the March 27, 2019 meeting. Minor revisions or modifications may be approved by the Community Development Director if they are consistent with the intent of and in substantial conformance with this approval.

2. The Coastal Development Permit Amendment and Grading Permit shall be valid for one (1) year from the date of this final approval in which time a valid building permit and grading "hard card" shall be issued and a completed inspection (to the satisfaction of the Building Inspection Section) shall have occurred within 180 days of its issuance. Any extension of the permits shall require submittal of an application for permit extension and payment of applicable extension fees sixty (60) days prior to the expiration date.

3. Within four (4) business days of the final approval date for this project, the applicant shall submit an environmental filing fee of $2,354.75, as required under Fish and Game Code Section 711.4, plus a $50.00 recording fee. Thus, the applicant shall submit a check in the **total amount of $2,404.75**, made payable to "San Mateo County Clerk", to the project planner to file with the Notice of Determination. Please be aware that the Department of Fish and Game environmental filing fee increases starting the 1st day of each new calendar year

(i.e., January 1, 2020). The fee amount due is based on the date of payment of the fees.

4. No grading activities shall commence until the applicant has been issued a Grading Permit (issued as the "hard card") by the Current Planning Section.

5. The provision of the San Mateo County Grading Ordinance shall govern all grading on and adjacent to this site. Per San Mateo County Grading Ordinance Section 9296.5, all equipment used in grading operations shall meet spark arrester and firefighting tool requirements, as specified in the California Public Resources Code.

6. The engineer who prepared the approved grading plan shall be responsible for the inspection and certification of the grading as required by Section 9297.2 of the Grading Ordinance. The engineer's responsibilities shall include those relating to non-compliance detailed in Section 9297.4 of the Grading Ordinance.

7. Erosion and sediment control during the course of grading work shall be installed and maintained according to a plan prepared and signed by the engineer of record, and approved by the Current Planning Section. Revisions to the approved erosion and sediment control plan shall be prepared and signed by the engineer, and must be reviewed and approved by the Current Planning Section.

8. An Erosion Control Pre-Site Inspection shall be conducted prior to the issuance of a grading permit "hard card" and/or building permit to ensure that the approved erosion control and any tree protection measures are installed adequately prior to the start of ground disturbing activities.

9. Noise sources associated with demolition, construction, repair, remodeling, or grading of any real property shall be limited to the hours from 7:00 a.m. to 6:00 p.m., weekdays and 9:00 a.m. to 5 p.m. Saturdays. Said activities are prohibited on Sundays, Thanksgiving, and Christmas (San Mateo Ordinance Code Section 4.88.360).

10. All motorized machinery used to implement the project shall be kept to less than 45-dBA at any wetlands boundary.

11. All work shall be performed during daylight hours (between sunrise to sunset).

Mitigation Measures from the Subsequent Mitigated Negative Declaration are below. Changes to the mitigation measures based on comments received during the public comment period are shown in underline and strikethrough:

12. **Mitigation Measure 1:** The applicant shall submit a plan to the Planning and Building Department prior to the issuance of any grading "hard card" that, at a minimum, includes the "Basic Construction Mitigation Measures" as listed in Table

8-2 of the BAAQMD CEQA Guidelines (May 2017). These measures shall be implemented prior to beginning any ground disturbance and shall be maintained for the duration of the project activities:

a. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access road) shall be watered two times per day.

b. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

c. All visible mud or dirt track-out onto adjacent paved roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

d. All vehicle speeds on unpaved roads shall be limited to 15 mph.

e. Idling times shall be minimized either by shutting equipment or vehicles off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

f. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

g. Post a publicly visible sign with the telephone number and person to contact at the County regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Bay Area Air Quality Management District's phone number shall also be visible to ensure compliance with applicable regulations.

13. **Mitigation Measure 2:** To reduce the potential for impacts to sensitive communities and special-status species, the following general best management practices (BMPs) are recommended for implementation:

Appropriate perimeter erosion and sediment control measures (i.e. silt fencing, straw waddles) shall be installed around any stockpiles of soil or other materials which could be transported by rainfall or other flows in order to reduce the possibility of soil erosion and sediments flowing into natural habitats.

a. All access, staging, and work areas shall be delineated with orange construction fencing, or similar, and all work activities shall be limited to these areas.

b. All access, staging, and work areas shall be the minimum size necessary to conduct the work.

c. All staging, maintenance, and storage of construction equipment shall be performed in a manner to preclude any direct or indirect discharge of fuel, oil, or other petroleum products into the Study Area. No other debris, rubbish, soil, silt, sand, or other construction-related materials or wastes shall be allowed to enter into or be placed where they may be washed by rainfall or runoff into wetland areas. All such debris and waste shall be picked-up daily and shall be properly disposed of at an appropriate facility. If a spill of fluid materials occurs, the area shall be cleaned and contaminated materials disposed of properly. The affected spill area shall be restored to its natural condition.

d. Disturbance or removal of vegetation shall not exceed the minimum necessary to conduct the work.

e. Given that the Project proposes to allow excavated areas to revegetate naturally, certified weed-free erosion control natural fiber blankets shall be used to stabilize disturbed soils.

f. Stockpiles of soil or other materials that can be blown by wind shall be covered when not in active use.

g. All trucks hauling soil, sand, and other loose materials shall be covered.

14. **Mitigation Measure 3:** The following measures shall be implemented to minimize impacts to San Mateo tree lupine:

a. A temporary protective barrier or sheeting shall be placed on the ground in the location of the stockpiling area to minimize disturbance of the existing substrates and seedbank during temporary stockpiling efforts to avoid contamination from the stockpiled materials.

b. The extent of the stockpiling area and construction access routes in areas with known populations of San Mateo tree lupine should be delineated with orange construction flagging to avoid incidental, direct impacts from construction equipment access and stockpiling.

c. The size, limit, and duration of the stockpiling area shall be minimized to the extent possible to reduce temporary disturbance to San Mateo tree lupine individuals.

d. Post-construction monitoring of any project-related impacted habitat shall ensure that San Mateo tree lupine recolonizes into areas where it currently occurs. Monitoring shall occur for up to three years following the completion

of project work or until the area demonstrates a trajectory of San Mateo tree lupine re-establishment of similar density to pre-construction conditions.

e. The applicant shall make an effort to relocate the one shrubby lupine (presumed to be *Lupinus arboreus var. eximius*) identified by Kramer Botanical (Kramer Botanical Assessment, May 15, 2015), located near the eastern edge of "Decision Unit-10," should there be a unforeseen impact to the individual during project implementation.

15. **Mitigation Measure 4:** A pre-construction survey for woodrat houses shall be conducted by a qualified biologist within 30 days prior to the start of work. If woodrat houses are found to be present in the work area, the following additional measures shall be implemented:

a. Any woodrat houses present in the work area, shall be dismantled by and under the supervision of a qualified biologist.

b. If young are encountered during the dismantling process, the material shall be placed back on the house, and the house will remain undisturbed for 14 days. After 14 days has passed, nest dismantling shall begin again. Once fully deconstructed, any materials removed shall be moved to suitable adjacent areas that will not be impacted by project activities and the materials shall be scattered.

16. **Mitigation Measure 5:** In compliance with the Migratory Bird Treaty Act, a survey for active bird nests shall be conducted by a qualified biologist no more than 14 days prior to the start of project activities (vegetation removal, grading, or other ground-disturbing activities) during the nesting season (February 1 through August 31). The survey shall be conducted in a sufficient area around the work site to identify the location and status of any nests that could potentially be directly or indirectly affected by project activities. If active nests or protected species are found within the project area or close enough to these areas to affect nesting success, the following shall be implemented:

a. A work exclusion zone shall be established around each nest by a qualified biologist that will remain in place until all young in the nest have fledged or the nest otherwise becomes inactive. As exclusion zones vary in size depending on the species, the size will be determined by a qualified biologist.

17. **Mitigation Measure 6:** In order to mitigate impacts to the CRLF, consultation with the United States Fish and Wildlife Services (USFWS) shall be initiated in order to obtain coverage for harassment during remediation and road drainage improvement work. The qualification of designated biologists shall be submitted to the USFWS for review and written approval at least 30 calendar days prior to the start of work. The following measures from the Programmatic Biological

Opinion for CRLF shall be implemented, unless superseded by mitigation measures as a result of consultation, and then the superseding measures shall be implemented:

a. Within 24 hours prior to initial ground disturbance, a preconstruction survey for CRLF shall be conducted. If any life stage of the species is found, the approved biologist will capture and move any individuals to an appropriate relocation site.

b. The approved biologist shall conduct an education training for employees working on the project. Personnel will be required to attend the training that would cover topics such as identification and legal protection of the species, as well as project specific avoidance and minimization measures.

c. The approved biologist shall be onsite during all activities that may result in take of CRLF including vegetation removal, initial ground disturbance, and spoils hauling.

d. The number of access routes, construction areas, equipment staging, storage, parking, and stockpile areas will be minimized to the extent possible.

e. To minimize temporary habitat disturbances, project-related vehicle traffic shall be restricted to established roads, and construction areas. Project-related vehicles shall observe a 20-mile per hour speed limit within construction areas.

f. All construction equipment shall be maintained to prevent leaks of fuels, lubricants, or other toxic fluids.

g. In order to avoid attracting predators of the CRLF, all trash shall be deposited in covered or closed trash containers that are removed from the project site regularly.

h. Any restoration and re-vegetation work for temporary effects shall be implemented using native California plant species.

i. Plastic monofilament netting (erosion control matting, or wrapping around wattles) or similar materials shall not be used on the project in order to avoid entangling, strangling, or trapping CRLF.

j. Construction shall be limited to the dry season (April 30 to October 1) to avoid impacting CRLF when they are most likely to use the study area as a migration corridor.

k. No construction activities shall occur during rain events or within 24-hours following a rain event.

l. Construction activities shall cease no less than thirty minutes before sunset and shall not begin again prior to no less than thirty minutes after sunrise.

18. **Mitigation Measure 7:** Any discharges of dredged or fill material into jurisdictional waters of the United States shall be in conformance with a permit issued by the U.S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act and Water Quality Certification by the Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the Clean Water Act, prior to any grading or construction activities that may impact jurisdictional areas. Additionally, U.S. Fish and Wildlife Services Compliance with the federal and state "no net loss of wetlands" policy is required for the proposed project. The avoidance, minimization, and mitigation measures required by such permits shall be implemented.

Impacts to wetlands shall require the creation or restoration of wetlands at a minimum of a 1:1 ratio for the impacted area, creation and/or restoration of wetlands that would provide equivalent biological function, purchase of wetland credits at a mitigation bank, or some combination of these actions. Furthermore, during the application process, the project proponent shall coordinate with the Corps and RWQCB to confirm that all proposed mitigation ratios and planned restoration activities are adequate to achieve a no net loss of wetland functions and services determination. Monitoring shall be required for impacted wetlands to ensure no weed infestations occur as a result of the project activities.

19. **Mitigation Measure 8:** In the event that archaeological resources are inadvertently discovered, work in the immediate vicinity (within 25 feet) of the find must stop until a qualified archaeologist can evaluate the significance of the find. Construction activities may continue in other areas beyond the 25-foot stop work area. A qualified archaeologist is defined as someone who meets the Secretary of the Interior's Professional Qualifications Standards in archaeology. The Current Planning Section shall be notified of such findings, and no additional work shall be done in the stop work area until the archaeologist has recommended appropriate measures, and those measures have been approved by the Current Planning Section and implemented.

20. **Mitigation Measure 9:** In the event that paleontological resources are inadvertently discovered, work in the immediate vicinity (within 25 feet) of the find must stop until a qualified paleontologist can evaluate the significant of the find. The Current Planning Section shall be notified of such findings, and no additional work shall be done in the stop work area until the paleontologist has recommended appropriate measures, and those measures have been approved by the Current Planning Section and implemented.

21. **Mitigation Measure 10:** Should any human remains be discovered during construction, all ground disturbing work shall cease and the County Coroner be immediately notified, pursuant to Section 7050.5 of the State of California Health and Safety Code. Work must stop until the County Coroner can make a determination of origin and disposition of the remains pursuant to California Public Resources Code Section 5097.98 for the naming of a Most Likely Descendant and the recommendations for disposition. ~~If the County Coroner determines the remains to be Native American, the Native American Heritage Commission shall be contacted within 24 hours. A qualified archaeologist, in consultation with the Native American Heritage Commission, shall recommend subsequent measures for disposition of the remains.~~

22. **Mitigation Measure 11:** The applicant shall adhere to the San Mateo County Stormwater Pollution Prevention Program "General Construction and Site Supervision Guidelines," including, but not limited to, the following:

    a. Stabilizing all denuded areas and maintaining erosion control measures continuously between October 1 and April 30.

    b. Storing, handling, and disposing of construction materials and wastes properly, so as to prevent their contact with stormwater.

    c. Controlling and preventing the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, wash water or sediments, and non-stormwater discharges to storm drains and watercourses.

    d. Using sediment controls or filtration to remove sediment when dewatering the site and obtaining all necessary permits.

    e. Avoiding cleaning, fueling, or maintaining vehicles on-site, except in a designated area where wash water is contained and treated.

    f. Delineating with field markers clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees and drainage courses within the vicinity of areas to be disturbed by grading.

    g. Protecting adjacent properties and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching, or other measures as appropriate.

    h. Performing clearing and earth-moving activities only during dry weather.

    i. Limiting and timing application of pesticides and fertilizers to prevent polluted runoff.

j. Limiting construction access routes and stabilizing designated access points.

k. Avoiding tracking dirt or other materials off-site~~cleaning off-site paved areas and sidewalks using dry sweeping methods~~.

l. Training and providing instruction to all employees and subcontractors regarding the Watershed Protection Maintenance Standards and construction Best Management Practices.

m. Additional Best Management Practices in addition to those shown on the plans may be required by the Building Inspector to maintain effective stormwater management during construction activities. Any water leaving the site shall be clear and running slowly at all times.

n. Failure to install or maintain these measures will result in stoppage of construction until the corrections have been made and fees paid for staff enforcement time.

23. **Mitigation Measure 12:** No grading shall be allowed during the winter season (October 1 to April 30) to avoid potential soil erosion, unless the applicant applies for an Exception to the Winter Grading Moratorium and the Community Development Director grants the exception. Exceptions will only be granted if dry weather is forecasted during scheduled grading operations, and the erosion control plan includes adequate winterization measures (amongst other determining factors).

    An applicant-completed and County-issued grading permit "hard card" is required prior to the start of any land disturbance/grading operations. Along with the "hard card," the applicant shall submit a letter to the Current Planning Section, at least two (2) weeks prior to commencement of grading, stating the date when grading operations will begin, anticipated end date of grading operations, including dates of revegetation and estimated date of establishment of newly planted vegetation.

24. **Mitigation Measure 13:** It shall be the responsibility of the engineer of record to regularly inspect the erosion control measures for the duration of all grading activities, especially after major storm events, and determine that they are functioning as designed and that proper maintenance is being performed. Deficiencies shall be immediately corrected, as determined by and implemented under the observation of the engineer of record.

25. **Mitigation Measure 14:** The site is considered a Construction Stormwater Regulated Site (SWRS). Any grading activities conducted during the wet weather season (October 1 to April 30) will require monthly erosion and sediment control inspections by the Building Inspection Section, as well as prior authorization from

the Community Development Director to conduct grading during the wet weather season.

26. **Mitigation Measure 15:** Off-site hauling of excavated soil shall be limited to the hours of 9:00 a.m. to 3:00 p.m. on weekdays, or as otherwise authorized by the Department of Public Works as part of an approved traffic control plan. Trucks or vehicles associated with the project shall not be parked on residential streets.

27. **Mitigation Measure 16:** The applicant shall obtain an encroachment permit for hauling of heavy loads on a public roadway. The applicant will be directed to submit traffic control plans which will notify the public of potential delays, and will have restricted hours for hauling operations. Any damage caused by the hauling operations or contractors equipment shall be repaired as directed by the County inspector.

28. **Mitigation Measure 17:** The applicant shall notify the public of hauling activities ten days in advance of such work.

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

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

Building Inspection Section

31. A demolition permit shall be obtained prior to the removal of any structure.

Geotechnical Section

32. Any development, including the construction of trails or roads, will require review by the Geotechnical Section.

Environmental Health Division (Ground Protection Program)

33. The applicant shall comply with the San Mateo County Groundwater Protection Program's December 8, 2015 conditional approval letter for the proposed remediation and reporting.

34. A final approval letter from the Environmental Health Division is required to verify the approved work has been fully implemented. A copy of the letter shall be submitted to the Current Planning Section.

Caltrans

35. The applicant shall obtain a transportation permit from Caltrans for project work that requires movement of oversized or excessive load vehicles on State roadways. To apply, a completed transportation permit application with the determined specific route(s) for the shipper to follow from origin to destination must be submitted to: Caltrans Transportation Permits Office, 1823 14th Street, Sacramento, CA 95811-7119 (http://www.dot.ca.gov/hq/traffops/permits).

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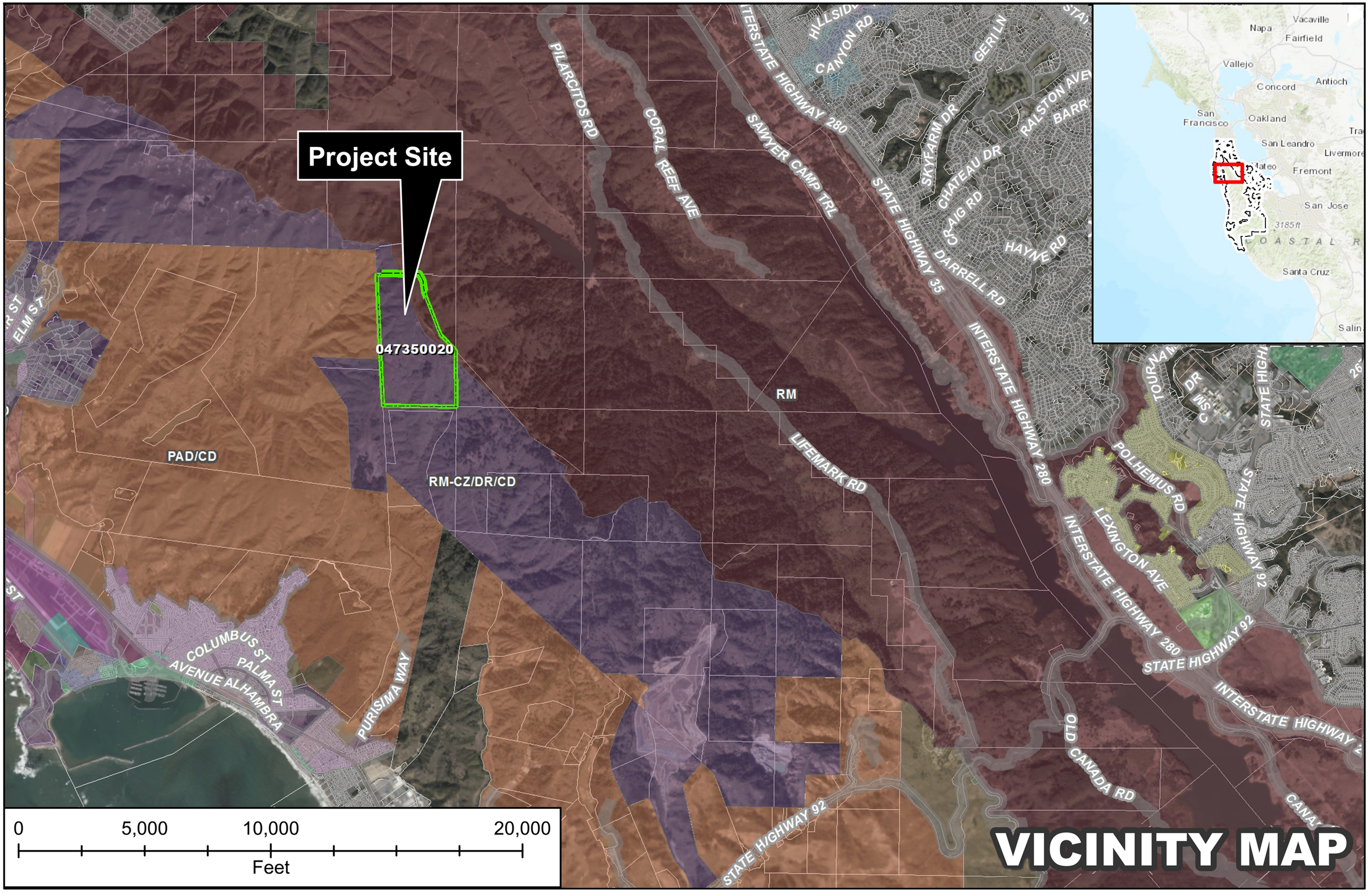
County of San Mateo - Planning and Building Department

ATTACHMENT B


Project Site
047350020
PILARCITOS RD
CORAL REEF AVE
SAWYER CAMP TRL
INTERSTATE HIGHWAY 280
STATE HIGHWAY 35
CANYON RD
SKYFARM DR
CHATEAU DR
CRAIG RD
DARRELL RD
HAYNE RD
RALSTON AVE
LIFEMARK RD
RM
PAD/CD
RM-CZ/DR/CD
COLUMBUS ST
PALMA ST
AVENUE ALHAMBRA
PURISIMA WAY
POLHEMUS RD
LEXINGTON AVE
INTERSTATE HIGHWAY 280
STATE HIGHWAY 92
OLD CANADA RD
0
5,000
10,000
20,000
Feet
Napa
Vacaville
Fairfield
Vallejo
Concord
Antioch
San Francisco
Oakland
San Leandro
Fremont
San Jose
Santa Cruz
3185ft
COASTAL
VICINITY MAP

County of San Mateo - Planning and Building Department

ATTACHMENT C

COUNTY OF SAN MATEO
PLANNING AND BUILDING

County Government Center
455 County Center, 2nd Floor
Redwood City, CA 94063
650-363-4161 T
650-363-4849 F
www.planning.smcgov.org

April 28, 2016

Neal Sharma
Peninsula Open Space Trust
222 High Street
Palo Alto, CA 94301

Dear Mr. Sharma:

SUBJECT: Coastal Development Permit and Grading Permit
APN 047-350-020; County File No. PLN 2015-00245

Staff has completed its review of your Coastal Development Permit and Grading Permit application to allow soil remediation and land restoration at the former Half Moon Bay Gun Club. The project involves 300 cubic yards of excavation at depths of no more than 1-foot, over approximately 9,300 sq. ft. of relatively flat land on a 357.13-acre parcel currently owned by Peninsula Open Space Trust (POST). Former use of the project site was as a private gun club/range. Remedial action will include the removal of lead bullets and soil containing metals and polyaromatic hydrocarbons determined to be above Environmental Screening Levels established by the Regional Water Quality Control Board. No fill, including import fill, is proposed and no trees will be removed. Disturbed areas will be revegetated with a local mix of native vegetation. No structural development is proposed.

The project is not appealable to the California Coastal Commission, as the project area is outside of the Coastal Commission Appeals Jurisdiction area. An Initial Study/Mitigated Negative Declaration (IS/MND) was prepared for this project and made available for public review from December 3, 2015 to December 22, 2015. A copy of the IS/MND was forwarded to the California Coastal Commission, Midcoast Community Council and Committee for Green Foothills, among other applicable reviewing agencies. No comments were received on the IS/MND.

The project parcel is zoned Resource Management-Coastal Zone/Coastal Development (RM-CZ/CD). Pursuant to Section 6903 of the County Zoning Regulations, grading and excavation operations, which are subject to regulations of the County Ordinance Code, Chapter 8, Regulation of Grading and Excavating Operations, Sections 8600-8614, are excluded from the definition of development that requires an RM-CZ Permit.

The project was reviewed and approved by the County's Building Inspection Section, Geotechnical Engineer, Department of Public Works, and Environmental Health Division. Comments received have been incorporated in the conditions of approval, below. A project referral was also sent to the Midcoast Community Council who responded with no comments.

On January 5, 2016, Planning staff sent notification of the permit applications to property owners within 300 feet of the subject property and to the Midcoast Community Council. No comments from the public were received during the project's 10-day comment period.

Therefore, staff has approved the permits and certified the Mitigated Negative Declaration, subject to the following findings and conditions of approval.

FINDINGS

1. Regarding the Environmental Review

    a. That the Mitigated Negative Declaration is complete, correct and adequate, and prepared in accordance with the California Environmental Quality Act (CEQA) and applicable State and County Guidelines. An Initial Study was completed and a Mitigated Negative Declaration issued in conformance with CEQA Guidelines. The public review period for this document was December 3, 2015 to December 22, 2015.

    b. That, on the basis of the Initial Study and comments received thereto, no substantial evidence exists that the project, if subject to the mitigation measures contained in the Mitigated Negative Declaration, will have a significant effect on the environment. The mitigation measures contained in the Mitigated Negative Declaration and made a part of the conditions of approval in this document adequately mitigate any potential significant effect on the environment.

    c. That the mitigation measures identified in the Mitigated Negative Declaration, agreed to by the applicant and placed as conditions on the project, have been incorporated into a Mitigation Monitoring and Reporting Plan in conformance with the California Public Resources Code Section 21081.6. The applicant has agreed to comply with the mitigation measures contained in the Mitigated Negative Declaration. In addition, mitigation measures have been incorporated as conditions of approval for this project (listed as Condition Nos. 10 through 17, below). Given compliance with the conditions of approval, a separate Mitigation Monitoring and Reporting Plan is not necessary.

    d. That the Negative Declaration reflects the independent judgment of the San Mateo County Planning Department.

2. Regarding the Coastal Development Permit

    e. That the project, as described in the application and accompanying materials required by Zoning Regulations Section 6328.4 and as conditioned in accordance with Section 6328.14, conforms with the plans, policies, requirements and standards of the San Mateo County Local Coastal Program (LCP). The project, as proposed and conditioned, complies with applicable LCP policies, including policies of the Sensitive Habitats and Visual Resources Components. The project

will not have an adverse significant impact on any sensitive habitat, will not result in the removal of any trees, and will require minimal alteration to landforms. The proposed grading quantity is the minimal necessary to complete the project, and potential erosion from the project site will be minimized through the implementation of an approved erosion and sediment control plan. Additionally, the project is not located in a State or County Scenic Corridor and does not involve any structural development.

f. That the project is not subject to the public access and public recreation policies of Chapter 3 of the Coastal Act of 1976 (commencing with Section 30200 of the Public Resources Code) since the project is not located between the nearest public road and the sea, or the shoreline of Pescadero Marsh.

g. That the project conforms to specific findings required by policies of the San Mateo County LCP with regard to Sensitive Habitats and Visual Resources Components, and conforms to the required findings listed above.

3. Regarding the Grading Permit

h. That the granting of the permit will not have a significant adverse effect on the environment. After conducting an environmental review as required by CEQA, staff found that, if all mitigation measures were implemented, there will not be a significant adverse effect on the environment. All applicable mitigation measures in the Mitigated Negative Declaration have been incorporated as conditions of approval, below.

i. That the project conforms to the criteria of Chapter 8, Division VII, San Mateo County Ordinance Code, including the standards referenced in Section 8605. The project, as proposed and conditioned, conforms to the standards in the Grading Ordinance, including timing of grading activity, erosion and sediment control, and dust control. The project has been reviewed and approved by the County's Department of Public Works and the Planning and Building Department's Geotechnical Engineer.

j. That the project is consistent with the General Plan. The subject site has a General Plan land use designation of Open Space. In addition to the findings made above for the issuance of a Coastal Development Permit, implementation of the project will remediate past environmental impacts from the project site's former use as a private gun club by removing hazardous contaminants from the soil, thereby improving the soil composition and water quality of the area.

CONDITIONS OF APPROVAL

Current Planning Section

1. The approval applies only to the proposal as described in this letter and materials submitted for review and approval by the Community Development Director on June 11, 2015. Minor modifications to the project may be approved by the Community Development Director if they are consistent with the intent of, and in substantial conformance with, this approval.

2. The Coastal Development Permit and Grading Permit shall be valid for one (1) year from the date of final approval. Any extension of these permits shall require submittal of a written request for permit extension no less than sixty (60) days prior to the expiration date.

3. No grading activities shall commence until the applicant has been issued a Grading Permit (issued as the "hard card" with all necessary information filled out and signatures obtained) by the Current Planning Section.

4. The applicant shall pay an environmental filing fee of $2,210.25, as required under the California Department of Fish and Game Code Section 711.4, plus a $50.00 recording fee. **Thus, the applicant shall submit a check in the total amount of $2,260.25 made payable to San Mateo County, to the project planner within four (4) working days of the final approval date of the subject permits** to file with the Notice of Determination.

5. The provisions of the San Mateo County Grading Ordinance shall govern all grading on the project site. Per San Mateo County Ordinance Code Section 8605.5, all equipment used in grading operations shall meet spark arrester and firefighting tool requirements, as specified in the California Public Resources Code.

6. The engineer who prepared the approved grading plan shall be responsible for the inspection and certification of the grading as required by Section 8606.2 of the Grading Ordinance. The engineer's responsibilities shall include those relating to non-compliance detailed in Section 8606.5 of the Grading Ordinance.

7. The applicant shall make an effort to relocate the one shrubby lupine (presumed to be *Lupinus arboreus var. eximius*) identified by Kramer Botanical (Kramer Botanical Assessment, May 15, 2015) to be located near the eastern edge of "Decision Unit-10," should it need to be removed during project implementation.

8. Prior to issuance of the grading permit "hard card," the applicant shall submit to the Current Planning Section, subject to review and approval by the Community Development Director, a revised erosion and sediment control plan to include a detail of erosion and sediment control protection for stockpiled materials. Once approved, erosion and sediment control measures of the erosion and stormwater control plan shall

be installed prior to beginning any site work and maintained throughout the duration of grading. Failure to install or maintain these measures will result in stoppage of construction until the corrections have been made and fees paid for staff enforcement time.

9. Erosion and sediment control during the course of grading work shall be according to a plan prepared and signed by the engineer of record, and approved by the Department of Public Works and the Community Development Director. Revisions to the approved erosion and sediment control plan shall be prepared and signed by the engineer and reviewed by the Department of Public Works and the Community Development Director.

Condition Nos. 10 through 17 are mitigation measures from the Mitigated Negative Declaration made available on December 3, 2015 (strikes and underlines are used to indicate text modifications):

10. The applicant shall submit a dust control plan to the Planning and Building Department prior to the issuance of any grading permit "hard card" that, at a minimum, includes the "Basic Construction Mitigation Measures" as listed in Table 8-1 of the BAAQMD CEQA Guidelines (May 2011). These measures shall be implemented prior to beginning any ground disturbance and shall be maintained for the duration of the project activities:

    a. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access road) shall be watered two times per day.

    b. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

    c. All visible mud or dirt track-out onto adjacent paved roads shall be removed using wet power vacuum street sweepers at least once per day.[1] The use of dry power sweeping is prohibited.

    d. All vehicle speeds on unpaved roads shall be limited to 15 mph.

    e. Roadways and building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

    f. Idling times shall be minimized either by shutting equipment or vehicles off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

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[1] Wet power vacuum street sweeping will mitigate dust impacts respective to the BAAQMD CEQA Guidelines and stormwater pollution impacts respective to the San Mateo County Stormwater Pollution Prevention Program "General Construction and Site Supervision Guidelines."

g. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.

~~h. Use alternative fueled (e.g., biodiesel, electric) construction vehicles/equipment of at least 15 percent of the fleet.~~[2]

h. Post a publicly visible sign with the telephone number and person to contact at the County regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Bay Area Air Quality Management District's phone number shall also be visible to ensure compliance with applicable regulations.

i. Idling times of diesel powered construction equipment shall be no longer than two (2) minutes.

j. All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control technology for emission reductions of NOx (nitrogen oxides) and PM (particulate matter).

11. The applicant shall adhere to the San Mateo County Stormwater Pollution Prevention Program "General Construction and Site Supervision Guidelines," including, but not limited to, the following:

a. Stabilizing all denuded areas and maintaining erosion control measures continuously between October 1 and April 30.

b. Storing, handling, and disposing of construction materials and wastes properly, so as to prevent their contact with stormwater.

c. Controlling and preventing the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, wash water or sediments, and non-stormwater discharges to storm drains and watercourses.

d. Using sediment controls or filtration to remove sediment when dewatering the site and obtaining all necessary permits.

e. Avoiding cleaning, fueling, or maintaining vehicles on-site, except in a designated area where wash water is contained and treated.

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[2] Deleted. This measure is encouraged under the BAAQMD CEQA Guidelines, May 2012, as an acceptable option for reducing construction-related GHG emissions; however, this is not a required measure. Instead, Table 8-2 "Additional Construction Mitigation Measures" of the Guidelines provides guidance for reducing construction-related air emissions. Therefore, this measure is being replaced with measures i - j from the BAAQMD's CEQA Guidelines, Table, 8-2.

f. Delineating with field markers clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees and drainage courses within the vicinity of areas to be disturbed by grading.

g. Protecting adjacent properties and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching, or other measures as appropriate.

h. Performing clearing and earth-moving activities only during dry weather.

i. Limiting and timing application of pesticides and fertilizers to prevent polluted runoff.

j. Limiting construction access routes and stabilizing designated access points.

k. Avoiding tracking dirt or other materials off-site~~; cleaning off-site paved areas and sidewalks using dry sweeping methods~~.[3]

l. Training and providing instruction to all employees and subcontractors regarding the Watershed Protection Maintenance Standards and construction Best Management Practices.

m. Additional Best Management Practices in addition to those shown on the plans may be required by the Building Inspector to maintain effective stormwater management during construction activities. Any water leaving the site shall be clear and running slowly at all times.

n. Failure to install or maintain these measures will result in stoppage of construction until the corrections have been made and fees paid for staff enforcement time.

12. No grading shall be allowed during the winter season (October 1 to April 30) to avoid potential soil erosion, unless the applicant applies for an Exception to the Winter Grading Moratorium and the Community Development Director grants the exception. Exceptions will only be granted if dry weather is forecasted during scheduled grading operations, and the erosion control plan includes adequate winterization measures (amongst other determining factors).

    An applicant-completed and County-issued grading permit "hard card" is required prior to the start of any land disturbance/grading operations. Along with the "hard card," the applicant shall submit a letter to the Current Planning Section, at least two (2) weeks prior to commencement of grading, stating the date when grading operations will begin,

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[3] Deleted. See Condition of Approval No. 8.c. requiring wet power vacuum street sweeping which will mitigate dust impacts respective to the BAAQMD CEQA Guidelines and stormwater pollution impacts respective to the San Mateo County Stormwater Pollution Prevention Program "General Construction and Site Supervision Guidelines."

anticipated end date of grading operations, including dates of revegetation and estimated date of establishment of newly planted vegetation.

13. It shall be the responsibility of the engineer of record to regularly inspect the erosion control measures for the duration of all grading activities, especially after major storm events, and determine that they are functioning as designed and that proper maintenance is being performed. Deficiencies shall be immediately corrected, as determined by and implemented under the observation of the engineer of record.

14. The site is considered a Construction Stormwater Regulated Site (SWRS). Any grading activities conducted during the wet weather season (October 1 to April 30) will require the issuance of a building permit, with applicable fees, to track monthly erosion and sediment control inspections by the Building Inspection Section, as well as prior authorization from the Community Development Director to conduct grading during the wet weather season.

15. Off-site hauling of excavated soil shall be limited to the hours of 9:00 a.m. to 3:00 p.m. on weekdays, or as otherwise authorized by the Department of Public Works as part of an approved traffic control plan. Trucks or vehicles associated with the project shall not be parked on residential streets.

16. The applicant shall obtain an encroachment permit for hauling of heavy loads on a public roadway. The applicant will be directed to submit traffic control plans which will notify the public of potential delays, and will have restricted hours for hauling operations. Any damage caused by the hauling operations or contractors' equipment shall be repaired as directed by the County Inspector.

17. The applicant shall notify the public of hauling activities 10 days in advance of such work.

Building Inspection Section

18. A demolition permit shall be obtained prior to the removal of any structure.

Geotechnical Section

19. Any development, including the construction of trails or roads, will require review by the Geotechnical Section.

Environmental Health Division

20. A final approval letter from the Environmental Health Division is required to verify the approved work has been fully implemented. A copy of the letter shall be submitted to the Current Planning Section.

This approval may be appealed by the applicant or any aggrieved party on or before **5:00 p.m. on May 12, 2016**, the tenth business day following this action by the Community Development Director. An appeal is made by completing and filing a Notice of Appeal, including a statement of grounds for the appeal, with the Planning and Building Department, and paying the applicable fee. Further information may be obtained by calling Summer Burlison, Project Planner, at 650/363-1815.

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

FOR STEVE MONOWITZ
COMMUNITY DEVELOPMENT DIRECTOR, By:

Michael Schaller, Senior Planner

CML:SSB:fc – SSBAA0034_WFN.DOCX

cc: Miles Hancock, Building Inspection Section
Jean DeMouthe, Geotechnical Section
Diana Shu, Department of Public Works
Charles Ice, Environmental Health Division
Mark Mondragon, San Mateo County Fire Department
California Coastal Commission
Midcoast Community Council

County of San Mateo - Planning and Building Department

ATTACHMENT D

REMEDIAL SOIL EXCAVATION FOR THE FORMER HALF MOON BAY GUN CLUB

EL GRANADA, SAN MATEO COUNTY, CALIFORNIA

PREPARED FOR

PENINSULA OPEN SPACE TRUST

PREPARED BY

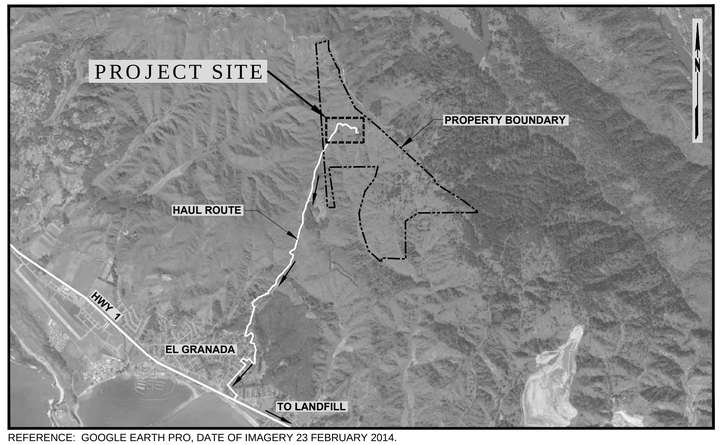
EKI Environment & Water, Inc.

REFERENCE: TRACED FROM THE THOMAS GUIDE BAY AREA METRO STREET GUIDE, 2014.

VICINITY MAP

7.5 5 2.5 0 7.5 15

(APPROXIMATE SCALE IN MILES)

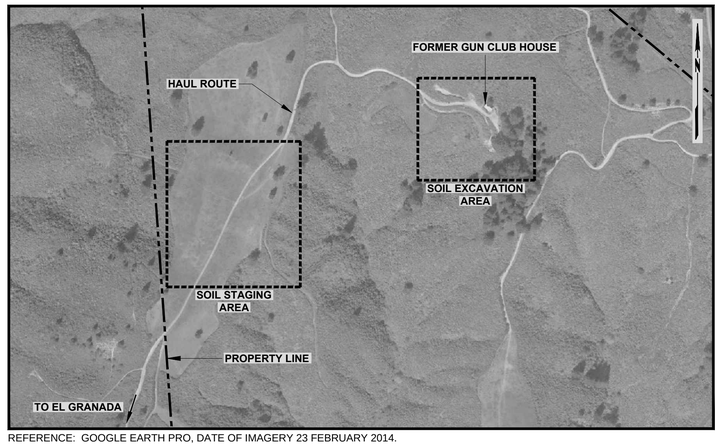


REFERENCE: GOOGLE EARTH PRO, DATE OF IMAGERY 23 FEBRUARY 2014.

SITE LOCATION MAP/HAUL ROUTE

4,000 0 4,000 8,000

(APPROXIMATE SCALE IN FEET)



REFERENCE: GOOGLE EARTH PRO, DATE OF IMAGERY 23 FEBRUARY 2014.

SITE ACCESS MAP

400 0 400 800

(APPROXIMATE SCALE IN FEET)

NOT FOR CONSTRUCTION

LIST OF DRAWINGS

GENERAL NOTES

1. VERTICAL ELEVATIONS ARE IN FEET, LOCAL ARBITRARY DATUM SURVEYED BY MCCLEOD, MARCH 2015.
2. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICES ALERT AT 1-800-227-2000 OR 811 A MINIMUM OF 2 WORKING DAYS PRIOR TO DIGGING. KEEP NOTIFICATION TICKET CURRENT.
3. WORK ON THIS PROJECT MAY BE HAZARDOUS. ALL ON-SITE PERSONNEL SHALL HAVE RECEIVED HEALTH AND SAFETY MONITORING AND TRAINING AS REQUIRED UNDER LAWS AND REGULATIONS, INCLUDING OSHA AND CAL OSHA STANDARDS.

LEGEND AND REFERENCE SYMBOLS

	INITIAL EXCAVATION AREA
	DENSE VEGETATION
	PROPERTY BOUNDARY
DU-10 (0.5)	DEPTH OF INITIAL EXCAVATION IN FEET OF DU-10
	TREE WITH DIAMETER GREATER THAN 12 INCHES
130	EXISTING GROUND CONTOUR
	TEMPORARY SURVEYOR BENCHMARK
	TOP OR TOE OF SLOPE
SS	SANITARY SEWER LINE
SD	STORM DRAIN LINE
?	SUSPECTED UNDERGROUND LINE
	EROSION CONTROL WATTLE
A A'	CROSS SECTION MARKER

ABBREVIATIONS

CONC	CONCRETE
CY	CUBIC YARD
DOT	DEPARTMENT OF TRANSPORTATION
DU	DECISION UNIT
DWG	DRAWING
(E)	EXISTING
ELEV	ELEVATION
ER	EDGE OF ROAD
FF	FINISH FLOOR
FT MSL	FEET ABOVE MEAN SEA LEVEL
GB	GRADE BREAK
IN	INCHES
INV	INVERT
(N)	NEW
NO.	NUMBER
PM	PAINT MARK
PVC	POLYVINYL CHLORIDE
SD	STORM DRAIN
SF	SQUARE FOOT
SHT	SHEET
TEMP	TEMPORARY
TYP	TYPICAL

REGISTERED PROFESSIONAL ENGINEER — JOHN THOMAS DE WITT — C 55468 — EXP. 12-31-18 — CIVIL — STATE OF CALIFORNIA

ekI environment & water
577 AIRPORT BOULEVARD, SUITE 500
BURLINGAME, CALIFORNIA 94010-5306
(650) 292-9100 • FAX (650) 552-9012

REMEDIAL SOIL EXCAVATION FOR THE FORMER HALF MOON BAY GUN CLUB
EL GRANADA, SAN MATEO COUNTY, CALIFORNIA

TITLE SHEET, VICINITY MAP, SITE LOCATION MAP, AND SITE ACCESS MAP

REV	DESCRIPTION	APPRD	DATE
2	ECO PERMIT SET	JDW	12/15/17
1	BID SET	JDW	5/13/16

DATE: MAY 2016
SCALE: AS SHOWN
DRAWN: CCR
DESIGNED: RTC
APPROVED: JDW
JOB NO.: B40003.01

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SHEET NUMBER
G-1
1 OF 5

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NOTES

1. CONTRACTOR TO TRACE AND MARK STORM DRAIN AND SANITARY SEWER LINES PRIOR TO PERFORMING ANY EXCAVATION.
2. PAINT MARKED ("PM") LINES AND AREAS REPRESENT LOCATIONS WHERE UTILITY SURVEYORS NOTED ANOMALIES USING GROUND PENETRATING RADAR.

TEMPORARY BENCHMARK
3/4" IRON PIPE WITH CAP
"MACLEOD CONTROL"
ELEV. 526.15
ASSUMED DATUM

WOOD TARGET

HAUL ROUTE

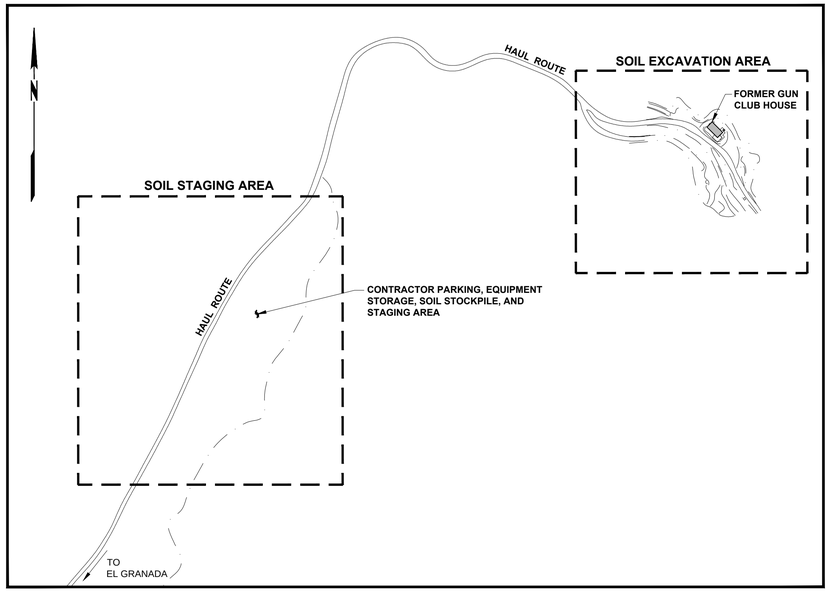
DENSE VEGETATION (TYP.)

(E) BUILDING

(E) CONCRETE PAD AND TABLE

TEMPORARY BENCHMARK
3/4" IRON PIPE WITH CAP
"MACLEOD CONTROL"
ELEV. 500.00
ASSUMED DATUM

TEMPORARY BENCHMARK
3/4" IRON PIPE WITH CAP
"MACLEOD CONTROL"
ELEV. 504.67
ASSUMED DATUM



KEY MAP

200 0 200 400
(APPROXIMATE SCALE IN FEET)

EXISTING CONDITIONS

20 0 20 40
(APPROXIMATE SCALE IN FEET)

NOT FOR CONSTRUCTION

ekl environment & water
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BURLINGAME, CALIFORNIA 94010-5306
(650) 292-9100 • FAX (650) 552-9012

REMEDIAL SOIL EXCAVATION FOR THE FORMER HALF MOON BAY GUN CLUB
EL GRANADA, SAN MATEO COUNTY, CALIFORNIA

EXISTING CONDITIONS

REV	DESCRIPTION	APPR'D	DATE
2	ECO PERMIT SET	JDW	12/15/17
1	BID SET	JDW	5/13/16

DATE: MAY 2016
SCALE: AS SHOWN
DRAWN: CCR
DESIGNED: RTC
APPROVED: JDW
JOB NO.: B40003.01

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REGISTERED PROFESSIONAL ENGINEER
JOHN THOMAS DEWITT
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EXP. 12-31-18
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER
G-2
2 OF 5

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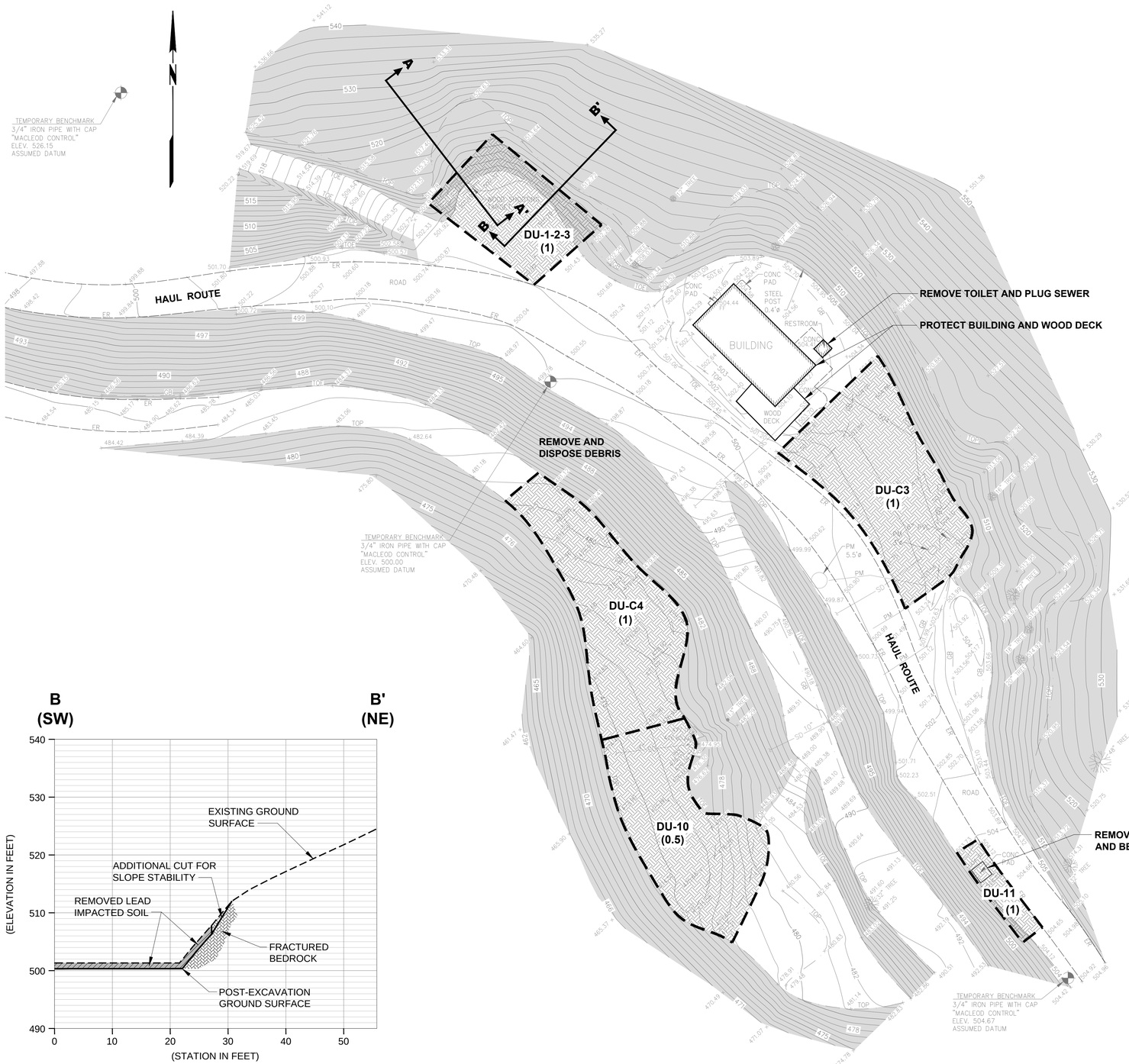
NOTES

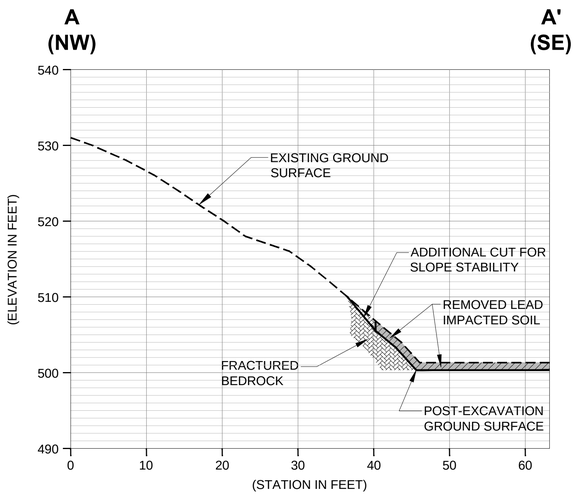
1. CONTRACTOR MAY BE DIRECTED BY ENGINEER TO PERFORM OVER-EXCAVATION LATERALLY AND VERTICALLY BEYOND THE INITIAL LIMITS AND DEPTHS BASED ON THE RESULTS OF CONFIRMATION SAMPLING PERFORMED BY ENGINEER.
2. CORNERS OF INITIAL EXCAVATION AREAS TO BE MARKED IN THE FIELD BY ENGINEER.
3. ALIGNMENT OF EXISTING STORM DRAIN AND SANITARY SEWER LINES SHALL BE TRACED AND MARKED BY CONTRACTOR PRIOR TO EXCAVATION WORK.
4. CONTRACTOR SHALL STOCKPILE SOIL FROM EACH EXCAVATION AREAIN A SEPARATELY LINED STOCKPILE AREA FOR SAMPLING PRIOR TO OFF-SITE TRANSPORTATION AND DISPOSAL.
5. SEE SHEET G-4 FOR EROSION CONTROL REQUIREMENTS.
6. CONTROL DUST PER SPECIFICATIONS.
7. CONTRACTOR SHALL DISPOSE OF EXCAVATED MATERIALS IN ACCORDANCE WITH LAWS AND REGULATIONS. DISPOSE HAZARDOUS WASTES IN APPROPRIATELY PERMITTED DISPOSAL FACILITIES.
8. OWNER WILL NOTIFY THE PUBLIC OF HAULING ACTIVITIES 10 DAYS IN ADVANCE OF WORK.
9. HAULING SHALL BE LIMITED TO THE HOURS OF 9 AM AND 3 PM MONDAY THROUGH FRIDAY. TRUCKS MAY NOT PARK ON RESIDENTIAL STREETS.
10. CONTRACTOR WILL REPAIR ANY DAMAGE TO PUBLIC ROADS CAUSED BY HAULING ACTIVITY AS DIRECTED BY COUNTY INSPECTOR.

EXCAVATION IDENTIFICATION	CUT FILL CALCULATIONS			ANTICIPATED DISPOSAL CLASSIFICATION
	CUT		FILL (CY)	
	AREA (SF)	VOLUME (CY)		
DU-1-2-3	1,500	56	-	RCRA HAZ
DU-C3	2,600	96	-	NON-HAZ
DU-C4	2,500	93	-	NON-HAZ
DU-10	2,400	44	-	NON-HAZ
DU-11	300	11	-	NON-RCRA HAZ
TOTAL	9,300	300	0	-



EXCAVATION PLAN

(APPROXIMATE SCALE IN FEET)



CROSS-SECTION A - A'

(APPROXIMATE SCALE IN FEET)

CROSS-SECTION B - B'

(APPROXIMATE SCALE IN FEET)

NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
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REMEDIAL SOIL EXCAVATION FOR THE FORMER HALF MOON BAY GUN CLUB
EL GRANADA, SAN MATEO COUNTY, CALIFORNIA

EXCAVATION PLAN AND CROSS-SECTIONS

REV	DESCRIPTION	APPRD	DATE
2	ECO PERMIT SET	JDW	12/15/17
1	BID SET	JDW	5/13/16

DATE: MAY 2016
SCALE: AS SHOWN
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JOB NO.: B40003.01

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SHEET NUMBER
G-3
3 OF 5

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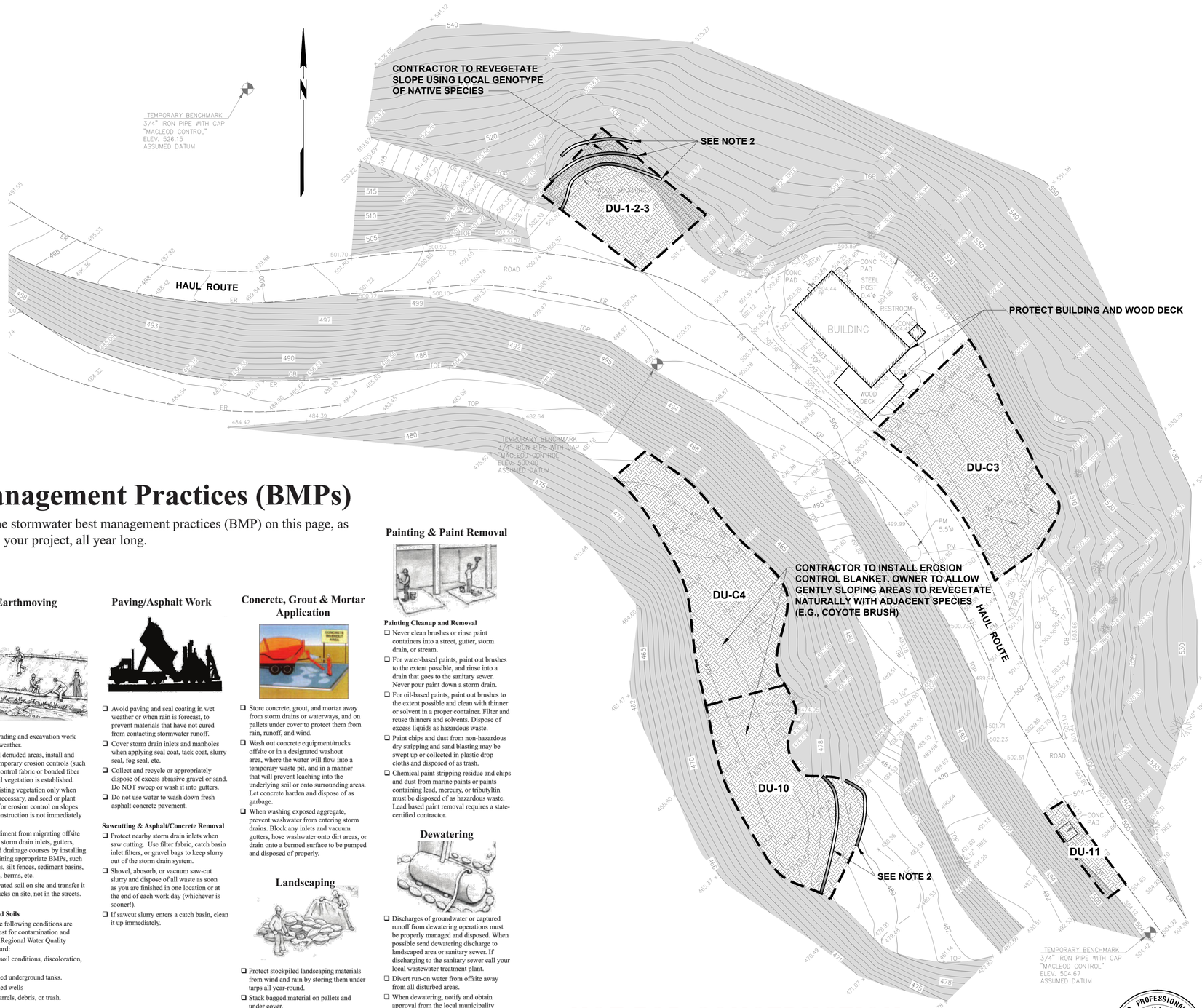
NOTES

STOCKPILE AREA EROSION CONTROL

1. CONTRACTOR SHALL STOCKPILE EXCAVATED MATERIAL WITH A BOTTOM LINER OF VISQUEEN AND A PERIMETER BERM, PER THE SPECIFICATIONS. DO NOT REMOVE EXISTING VEGETATION IN STOCKPILE AREA.
2. COVER ALL STOCKPILES WHEN NOT IN USE TO LIMIT EROSION AND SEDIMENT GENERATION. ANCHOR COVER AS NEEDED TO LIMIT WIND EROSION.

RESTORATION REQUIREMENTS

1. PLACE EROSION CONTROL BLANKETS OVER EXCAVATION AREAS AFTER ENGINEER'S CONFIRMATION SAMPLES INDICATE EXCAVATION IS COMPLETE.
2. SEED DISTURBED AREAS PRIOR TO PLACING EROSION CONTROL BLANKETS WITH NATIVE CALIFORNIA SEED MIXTURES, PER THE SPECIFICATIONS.
3. INSTALL SEED-FREE WATTLES ALONG CONTOURS OF SLOPED EXCAVATION AREAS AT 10-FT INTERVALS.
4. SEE SHEET D-1 FOR ROAD DRAINAGE PLAN.



NOT FOR CONSTRUCTION

EROSION CONTROL PLAN

20 0 20 40
(APPROXIMATE SCALE IN FEET)

SAN MATEO COUNTYWIDE
Water Pollution Prevention Program
Clean Water. Healthy Community.

Construction Best Management Practices (BMPs)

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

Materials & Waste Management

Non-Hazardous Materials

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

Hazardous Materials

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

Waste Management

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

Construction Entrances and Perimeter

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

Equipment Management & Spill Control

Maintenance and Parking

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

Spill Prevention and Control

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

Earthmoving

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

Contaminated Soils

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

Paving/Asphalt Work

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

Sawcutting & Asphalt/Concrete Removal

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

Concrete, Grout & Mortar Application

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

Landscaping

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

Painting & Paint Removal

Painting Cleanup and Removal

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

Dewatering

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

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

ekl environment & water
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(650) 292-9100 • FAX (650) 552-9012

REMEDIAL SOIL EXCAVATION FOR THE FORMER HALF MOON BAY GUN CLUB
EL GRANADA, SAN MATEO COUNTY, CALIFORNIA

EROSION CONTROL PLAN

REV	DESCRIPTION	APPRD	DATE
2	ECO PERMIT SET	JDW	12/15/17
1	BID SET	JDW	5/13/16

DATE: MAY2016
SCALE: AS SHOWN
DRAWN: CCR
DESIGNED: RTC
APPROVED: JDW
JOB NO.: B40003.01

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REGISTERED PROFESSIONAL ENGINEER
JOHN THOMAS DE WITT
C 55468
EXP. 12-31-18
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER
G-4
4 OF 5

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ROAD DRAINAGE PLAN

REMEDIAL SOIL EXCAVATION FOR THE FORMER HALF MOON BAY GUN CLUB

EL GRANADA, SAN MATEO COUNTY, CA

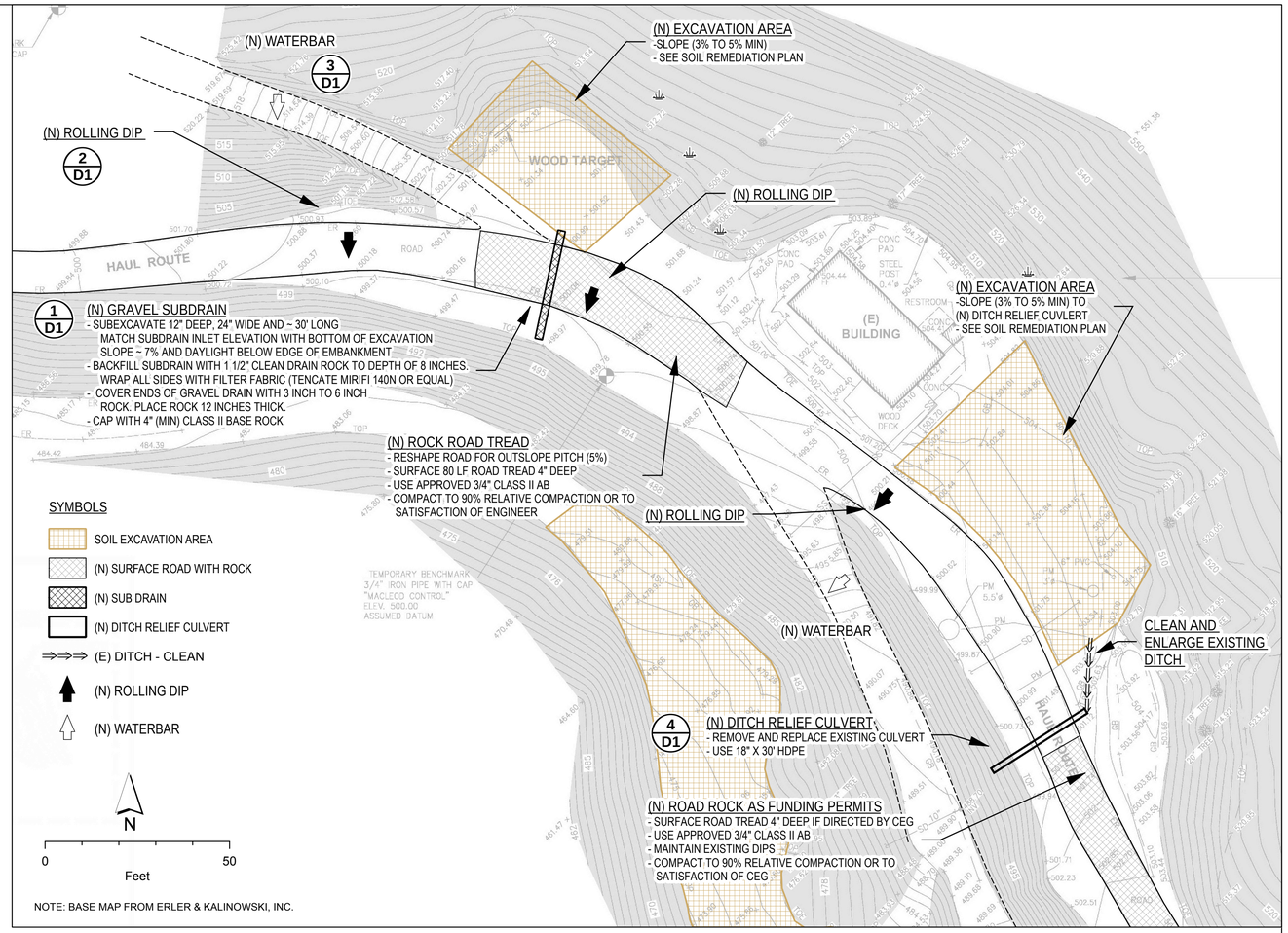
PLAN DESCRIPTION

THESE DRAINAGE PLANS PROVIDE DETAILS TO UPGRADE DRAINAGE CONTROL ALONG THE EXISTING ACCESS ROAD. THE PURPOSE OF THE WORK IS TO IMPROVE THE DRAINAGE OF SURFACE RUNOFF AT THE SITE TO REDUCE THE POTENTIAL FOR ROAD RELATED EROSION, FOLLOWING THE REMEDIAL SOIL EXCAVATION WORK ASSOCIATED WITH LEAD FRAGMENT CLEANUP. THE PROPOSED DRAINAGE IMPROVEMENTS INCLUDE:

1) REMOVE AND REPLACE 1 EXISTING DITCH RELIEF CULVERT
2) INSTALL 3 ROLLING DIPS ON THE MAIN ROAD
3) INSTALL 1 GRAVEL SUB DRAIN
4) INSTALL 2 WATERBARS ON SIDE ROADS
5) ROCK SURFACE 80+ LF OF ROADWAY
6) ROCK ADDITIONAL ROADWAY AS FUNDING PERMITS
7) SLOPE ROAD SURFACE TO DRAIN.

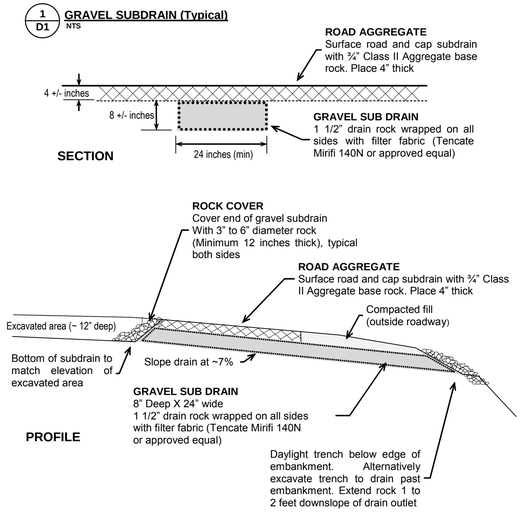
GENERAL NOTES

1) THIS SHEET INDICATES GENERAL AND TYPICAL DETAILS SPECIFIC TO ROAD DRAINAGE IMPROVEMENTS AFTER IMPLEMENTATION OF REMEDIAL SOIL EXCAVATION WORK.
2) "POST" SHALL BE PENINSULA OPEN SPACE TRUST, THE "CEG" SHALL BE CERTIFIED ENGINEERING GEOLOGIST, TIMOTHY C. BEST, AND THE "CONTRACTOR" SHALL BE AN INDEPENDENT CONTRACTOR RETAINED BY POST TO PERFORM THE WORK DESCRIBED HEREIN.
3) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL OF THE PROJECT DOCUMENTS WITH THE CONDITIONS FOUND AT THE SITE AND SHALL VERIFY EXISTING GRADES, ELEVATIONS AND CONDITIONS PRIOR TO COMMENCING WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE CEG AND SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK. IF IT IS FOUND THAT FIELD CONDITIONS ARE NOT AS SHOWN ON THE PLANS, THE CONTRACTOR MUST MAKE REVISIONS AND/OR ADJUSTMENTS TO THE SATISFACTION OF THE CEG PRIOR TO FURTHER WORK.
4) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE CONSTRUCTION AREA DURING CONSTRUCTION AND SHALL PROVIDE NECESSARY SAFETY MEASURES THAT COMPLY WITH ALL STATE AND LOCAL SAFETY ORDINANCES. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
5) THE CONTRACTOR SHALL NOTIFY THE CEG A MINIMUM OF 7 DAYS PRIOR TO COMMENCEMENT OF WORK AND A MINIMUM OF 4 DAYS IN ADVANCE OF REQUIRED INSPECTIONS.
6) ALL ROAD DRAINAGE WORK SHALL BE SUBJECT TO OBSERVATION, TESTING AND APPROVAL BY THE CEG.
7) THE CONTRACTOR SHALL RECOGNIZE THAT THE PLANS USED FOR THE DRAWINGS OF THE WORK MAY DIFFER FROM THE ACTUAL PHYSICAL SITE. DIMENSIONS ARE APPROXIMATE. BEFORE PROCEEDING WITH THE WORK, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHECK THE SITE IN RELATION TO THE DRAWINGS AND SPECIFICATIONS. REPORT ANY DISCREPANCIES TO POST AND TO THE CEG.
8) AT ALL TIMES DURING PROJECT CONSTRUCTION ACTIVITIES, COPIES OF THE APPROVED FINAL PLANS AND COPIES OF PERMITS SHALL BE MAINTAINED AT THE CONSTRUCTION JOB SITE, AND ALL PERSONS INVOLVED WITH THE CONSTRUCTION SHALL BE BRIEFED ON THE CONTENT AND MEANING OF EACH PRIOR TO COMMENCEMENT OF CONSTRUCTION
9) THE CEG SHALL REVIEW THE PROJECT PLANS WITH THE CONTRACTOR DURING THE PRE-CONSTRUCTION MEETING. THE CEG SHALL ALSO PROVIDE EARTHWORK OBSERVATIONS PERTAINING TO ROAD DRAINAGE. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR MISINTERPRETATION OF THE PLANS.
10) REGULATORY AGENCIES MAY REQUIRE A FINAL GRADING COMPLIANCE LETTER. CEG CAN ONLY OFFER THIS LETTER IF CALLED TO THE SITE TO OBSERVE AND TEST, AS NECESSARY, ANY GRADING AND EXCAVATION OPERATIONS FROM THE START OF CONSTRUCTION. THE CONTRACTOR MUST SCHEDULE EARTHWORK TESTING AND OBSERVATION. PLEASE CONTACT: TIM BEST (831) 425-5832 (OFFICE) (831) 332-7791 (MOBILE).



NOTE: BASE MAP FROM ERLER & KALINOWSKI, INC.

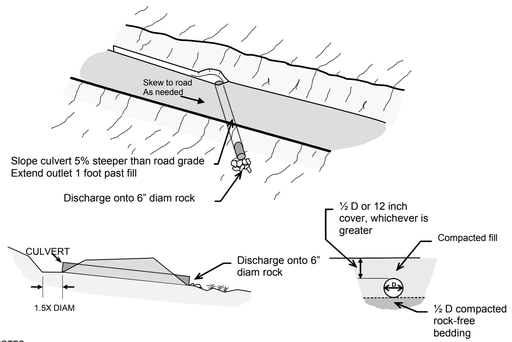
1 D1 GRAVEL SUBDRAIN (Typical) NTS



NOTES

- Subexcavate 12" deep 24" wide trench across road
- Match subdrain inlet elevation with bottom of excavation
- Slope ~ 7%
- Daylight outlet below edge of embankment or alternatively excavate trench to extend past embankment
- -Backfill subdrain with 1 ½ inch clean drain rock to depth of 8 inches. Wrap all sides with filter fabric (Mirifi 140 or approved equal)
- Cover gravel drain with 4" (min) road aggregate (within roadway) or compacted fill (outside roadway).
- Cover ends of gravel drain with 3 inch to 6 inch rock. Place rock 12 inches thick.
- CEG to verify drain location and depth prior to work

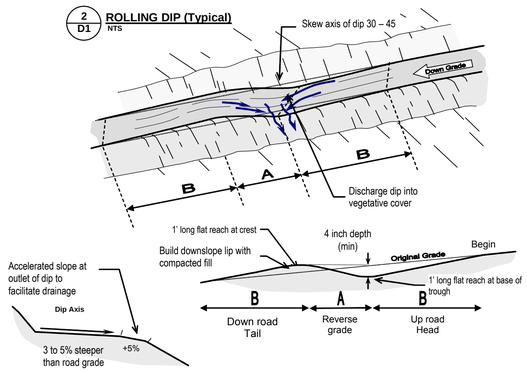
4 D1 DITCH RELIEF CULVERT (Typical) NTS



NOTES

- Ditch relief culvert shall be installed at flagged locations or as identified on plans.
- Culvert shall be 18 inch diameter smooth bore, double wall HDPE (ASTM D3350 and AASHTO M294, Type S) unless otherwise specified.
- The culvert shall be placed with a gradient 5% steeper than that of the road unless otherwise specified in plans. Culverts shall extend a minimum of 1 foot beyond base of road fill.
- The width of trenches shall permit satisfactory joining and thorough tamping of the backfill material.
- The culvert bed shall be clean and free of large woody debris and large rocks. Unsuitable material shall be replaced with selected granular material and compacted to obtain uniform bed.
- Where rock, hardpan, or other unyielding material is encountered, it shall be removed below the culvert grade for a depth of at least 1 foot and a width of at least 2 feet plus the culvert diameter. This material shall be replaced with selected compacted fill.
- Culvert trenches must be properly shored and braced during construction or laid back at an appropriate angle to prevent sloughing and caving at sidewalls. Contractor must comply with all CAL OSHA and local safety requirements and codes dealing with excavations and trenches.
- Onsite soils are suitable for culvert backfill. The backfill shall have no rocks greater than 3 inches in any dimension placed closer than 1 foot to the culvert. Backfill shall be adequately compacted throughout the entire process to approximately 95 percent ASTM 1557 or to the satisfaction of the CEG. During placement and compaction of fill, the moisture content of the materials being placed shall be maintained.
- Compacted fill coverage shall be minimum ½ pipe diameter or 12 inches, whichever is greater.
- Armor culvert inlet and outlet to top of pipe using 6" diameter rock. Apply rock to form apron to satisfaction of CEG. Discharge culvert onto 6 inch diameter rock.
- Specifications are intended only as guidelines; modifications may be made in the field by the CEG.

2 D1 ROLLING DIP (Typical) NTS

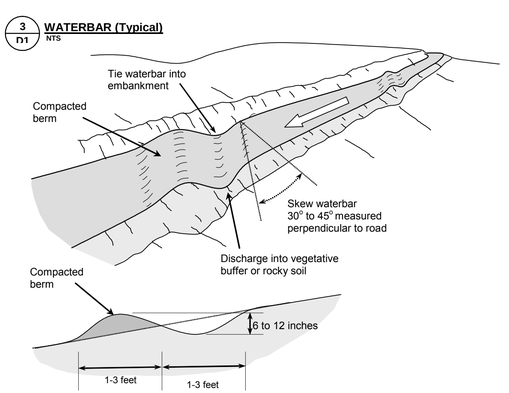


ROAD GRADE (%)	TROUGH	A: REVERSE GRADE		B: UP ROAD HEAD DOWN ROAD TAIL	
	Minimum depth	Distance from trough axis to downroad crest (ft)	Grade	Distance from up-road start of rolling dip to trough axis (ft)	Grade (%)
<5%	4 inches	12	3%	12	8%
5% - 10%		12	3%	15	10%

NOTES

- The dip shall be a minimum of 6 inches deep and incorporate a 1 foot long flat reach at the base of the trough (unless otherwise directed).
- Dip outlets shall be located to drain into areas with adequate sediment filter quality and non-erodible material such as rock, slash, brush, etc. Where specified, the bottom of the outfall of the dip will be surface-rocked.
- Where natural side slopes exceed 50%, fill shall not be pushed over the slope at the dip outlet.

3 D1 WATERBAR (Typical) NTS



NOTES

- Identify waterbar locations that take advantage of natural drainage features and minimize the amount of disturbance required for waterbar construction.
- All waterbars shall begin at the intersection of the roadbed surface and the cut slope and run the entire width of the road surface prism.
- Waterbar length shall not exceed 1.5 times the width of the road surface.
- Acceptable waterbars shall be skewed 30 to 45 degrees measured perpendicular to road.
- All waterbars shall have free-flowing outlets with minimum 5% grade in the bottom of the channel that discharges onto vegetative surfaces or less erodible material where possible.
- Native materials used to construct the constructed downslope berm shall be compacted with equipment to minimize wear resulting from trespass and/or administrative use traffic.
- Waterbar depth measured from the bottom of the waterbar channel to the top of the compacted berm must be between 6 and 12 inches high.

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(831) 425 5832 (831) 425 5809 (fax)

PROFESSIONAL GEOLOGIST — TIMOTHY C. BEST No. 1682 CERTIFIED ENGINEERING GEOLOGIST — STATE OF CALIFORNIA

PROJECT:
REMEDIAL SOIL EXCAVATION FOR THE FORMER HALF MOON BAY GUN CLUB
EL GRANADA, SAN MATEO COUNTY, CA
PREPARED FOR PENINSULA OPEN SPACE TRUST, PALO ALTO, CA

TITLE: ROAD DRAINAGE PLAN

REVISIONS:

No.	Date	Description

DATE: DECEMBER 18, 2017
PROJECT: SMRCD-DARKGULCH-775
DRAWN BY: TB
CHECKED: TB

SHEET NUMBER
D-1

County of San Mateo - Planning and Building Department

ATTACHMENT E

COUNTY OF SAN MATEO, PLANNING AND BUILDING DEPARTMENT

NOTICE OF INTENT TO ADOPT
SUBSEQUENT MITIGATED NEGATIVE DECLARATION

A notice, pursuant to the California Environmental Quality Act of 1970, as amended (Public Resources Code 21,000, et seq.), that the following project *Soil Remediation and Land Restoration at the former Half Moon Bay Gun Club* when adopted and implemented, will not have a significant impact on the environment.

FILE NO.: PLN 2015-00245

POSTING ONLY

OWNER: Peninsula Open Space Trust

APPLICANT: Peninsula Open Space Trust (POST)

ASSESSOR'S PARCEL NO.: 047-350-020

DEC 14 2018

LOCATION: 3500 Frenchman's Creek Road, El Granada

PROJECT DESCRIPTION

The project will restore land through soil remediation at the former Half Moon Bay Gun Club which exists on a 357.13-acre parcel currently owned by POST. The project involves excavating approximately 300 cubic yards at depths of approximately 1-foot over approximately 9,300 square feet of flat land. Remedial action would include the removal of soil containing lead bullets, casings, shells, other metals, and polyaromatic hydrocarbons[1] at higher concentrations than the Environmental Screening Levels established by the Regional Water Quality Control Board (RWQCB). The project is intended to achieve a conservative, unrestricted lead cleanup goal of 80 milligrams of lead per kilogram of soil, which is acceptable for residential land use pursuant to RWQCB standards (RWQCB Environmental Screening Levels, February 2016). No construction is proposed, except for +drainage improvements (detailed in the previous section) to allow land access beyond the project area. No trees will be removed, and no fill, including import fill, is proposed for soil excavation areas. Erosion control blankets and seed-free wattles will be used to stabilize disturbed areas. Revegetation of disturbed areas will be permitted to occur naturally with surrounding native vegetation, through the application of a local mix of natives, and with measures to improve drainage control along the access route. For further project description detail, see the 2015 Initial Study and Mitigated Negative Declaration (IS/MND) project description.

The grading process would be initiated by mobilization to the project site, followed by marking and clearing of planned excavation areas prior to excavation. Excavated soil would be transferred to a separate on-site staging area where stockpiles would be contained on, and covered by, plastic sheeting. Confirmation sampling would be conducted to confirm remaining soil meets remedial goals while stockpiled soil will be transported to approved off- site disposal facilities. Minor grading for drainage improvements to the road in the vicinity of the excavation area is expected to be completed in 1 to 2 days.

[1] Polyaromatic hydrocarbons (PAHs) are typical in trap/skeet materials.

The IS/MND have been updated to consider the project scope changes identified above, and in accordance with the updated Biological Resources Evaluation, prepared by WRA Environmental Consultants, dated April 2018. Additionally, this IS document includes a Tribal Cultural Resources section discussion, pursuant to Assembly Bill (AB) 52, that was not included in the previous 2015 IS/MND.

FINDINGS AND BASIS FOR A NEGATIVE DECLARATION

The Current Planning Section has reviewed the initial study for the project and, based upon substantial evidence in the record, finds that:

1. The project will not adversely affect water or air quality or increase noise levels substantially.

2. The project will not have adverse impacts on the flora or fauna of the area.

3. The project will not degrade the aesthetic quality of the area.

4. The project will not have adverse impacts on traffic or land use.

5. In addition, the project will not:

    a. Create impacts which have the potential to degrade the quality of the environment.

    b. Create impacts which achieve short-term to the disadvantage of long-term environmental goals.

    c. Create impacts for a project which are individually limited, but cumulatively considerable.

    d. Create environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly.

The County of San Mateo has, therefore, determined that the environmental impact of the project is insignificant.

MITIGATION MEASURES included in the project to avoid potentially significant effects:

Mitigation Measure 1: The applicant shall submit a plan to the Planning and Building Department prior to the issuance of any grading "hard card" that, at a minimum, includes the "Basic Construction Mitigation Measures" as listed in Table 8-2 of the BAAQMD CEQA Guidelines (May 2017). These measures shall be implemented prior to beginning any ground disturbance and shall be maintained for the duration of the project activities:

a. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access road) shall be watered two times per day.

b. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

c. All visible mud or dirt track-out onto adjacent paved roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

d. All vehicle speeds on unpaved roads shall be limited to 15 mph.

e. Idling times shall be minimized either by shutting equipment or vehicles off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

f. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

g. Post a publicly visible sign with the telephone number and person to contact at the County regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Bay Area Air Quality Management District's phone number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure 2: To reduce the potential for impacts to sensitive communities and special-status species, the following general best management practices (BMPs) are recommended for implementation:
Appropriate perimeter erosion and sediment control measures (i.e. silt fencing, straw waddles) shall be installed around any stockpiles of soil or other materials which could be transported by rainfall or other flows in order to reduce the possibility of soil erosion and sediments flowing into natural habitats.

a. All access, staging, and work areas shall be delineated with orange construction fencing, or similar, and all work activities shall be limited to these areas.

b. All access, staging, and work areas shall be the minimum size necessary to conduct the work.

c. All staging, maintenance, and storage of construction equipment shall be performed in a manner to preclude any direct or indirect discharge of fuel, oil, or other petroleum products into the Study Area. No other debris, rubbish, soil, silt, sand, or other construction-related materials or wastes shall be allowed to enter into or be placed where they may be washed by rainfall or runoff into wetland areas. All such debris and waste shall be picked-up daily and shall be properly disposed of at an appropriate facility. If a spill of fluid materials occurs, the area shall be cleaned and contaminated materials disposed of properly. The affected spill area shall be restored to its natural condition.

d. Disturbance or removal of vegetation shall not exceed the minimum necessary to conduct the work.

e. Given that the Project proposes to allow excavated areas to revegetate naturally, certified weed-free erosion control natural fiber blankets shall be used to stabilize disturbed soils.

f. Stockpiles of soil or other materials that can be blown by wind shall be covered when not in active use.

g. All trucks hauling soil, sand, and other loose materials shall be covered.

Mitigation Measure 3: The following measures shall be implemented to minimize impacts to San Mateo tree lupine:

a. A temporary protective barrier or sheeting shall be placed on the ground in the location of the stockpiling area to minimize disturbance of the existing substrates and seedbank during temporary stockpiling efforts to avoid contamination from the stockpiled materials.

b. The extent of the stockpiling area and construction access routes in areas with known populations of San Mateo tree lupine should be delineated with orange construction flagging to avoid incidental, direct impacts from construction equipment access and stockpiling.

c. The size, limit, and duration of the stockpiling area shall be minimized to the extent possible to reduce temporary disturbance to San Mateo tree lupine individuals.

d. Post-construction monitoring of any project-related impacted habitat shall ensure that San Mateo tree lupine recolonizes into areas where it currently occurs. Monitoring shall occur for up to three years following the completion of project work or until the area demonstrates a trajectory of San Mateo tree lupine re-establishment of similar density to pre-construction conditions.

e. The applicant shall make an effort to relocate the one shrubby lupine (presumed to be Lupinus arboreus var. eximius) identified by Kramer Botanical (Kramer Botanical Assessment, May 15, 2015), located near the eastern edge of "Decision Unit-10," should there be a foreseen impact to the individual during project implementation.

Mitigation Measure 4: A pre-construction survey for woodrat houses shall be conducted by a qualified biologist within 30 days prior to the start of work. If woodrat houses are found to be present in the work area, the following additional measures shall be implemented:

a. Any woodrat houses present in the work area, shall be dismantled by and under the supervision of a qualified biologist.

b. If young are encountered during the dismantling process, the material shall be placed back on the house, and the house will remain undisturbed for 14 days. After 14 days has passed, nest dismantling shall begin again. Once fully deconstructed, any materials removed shall be moved to suitable adjacent areas that will not be impacted by project activities and the materials shall be scattered.

Mitigation Measure 5: In compliance with the Migratory Bird Treaty Act, a survey for active bird nests shall be conducted by a qualified biologist no more than 14 days prior to the start of project activities (vegetation removal, grading, or other ground-disturbing activities) during the nesting season (February 1 through August 31). The survey shall be conducted in a sufficient area around the work site to identify the location and status of any nests that could potentially be directly or indirectly affected by project activities. If active nests or protected species are found within the project area or close enough to these areas to affect nesting success, the following shall be implemented:

a. A work exclusion zone shall be established around each nest by a qualified biologist that will remain in place until all young in the nest have fledged or the nest otherwise becomes inactive. As exclusion zones vary in size depending on the species, the size will be determined by a qualified biologist.

Mitigation Measure 6: In order to mitigate impacts to the CRLF, consultation with the USFWS shall be initiated in order to obtain coverage for harassment during remediation and road improvement work. The qualification of designated biologists shall be submitted to the USFWS for review and written approval at least 30 calendar days prior to the start of work. The following measures from the Programmatic Biological Opinion for CRLF shall be implemented, unless superceded by mitigation measures as a result of consultation, and then the superceding measures shall be implemented:

a. Within 24 hours prior to initial ground disturbance, a preconstruction survey for CRLF shall be conducted. If any life stage of the species is found, the approved biologist will capture and move any individuals to an appropriate relocation site.

b. The approved biologist shall conduct an education training for employees working on the project. Personnel will be required to attend the training that would cover topics such as identification and legal protection of the species, as well as project specific avoidance and minimization measures.

c. The approved biologist shall be onsite during all activities that may result in take of CRLF including vegetation removal, initial ground disturbance, and spoils hauling.

d. The number of access routes, construction areas, equipment staging, storage, parking, and stockpile areas will be minimized to the extent possible.

e. To minimize temporary habitat disturbances, project-related vehicle traffic shall be restricted to established roads, and construction areas. Project-related vehicles shall observe a 20-mile per hour speed limit within construction areas.

f. All construction equipment shall be maintained to prevent leaks of fuels, lubricants, or other toxic fluids.

g. In order to avoid attracting predators of the CRLF, all trash shall be deposited in covered or closed trash containers that are removed from the project site regularly.

h. Any restoration and re-vegetation work for temporary effects shall be implemented using native California plant species.

i. Plastic monofilament netting (erosion control matting, or wrapping around wattles) or similar materials shall not be used on the project in order to avoid entangling, strangling, or trapping CRLF.

j. Construction shall be limited to the dry season (April 30 to October 1) to avoid impacting CRLF when they are most likely to use the study area as a migration corridor.

k. No construction activities shall occur during rain events or within 24-hours following a rain event.

l. Construction activities shall cease no less than 30 minutes before sunset and shall not begin again prior to no less than 30 minutes after sunrise.

Mitigation Measure 7: Any discharges of dredged or fill material into jurisdictional waters of the United States shall be in conformance with a permit issued by the U.S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act and Water Quality Certification by the Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the Clean Water Act, prior to any grading or construction activities that may impact jurisdictional areas. Additionally, U.S. Fish and Wildlife Services Compliance with the federal and state "no net loss of wetlands" policy is required for the proposed project. The avoidance, minimization, and mitigation measures required by such permits shall be implemented.

Impacts to wetlands shall require the creation or restoration of wetlands at a minimum of a 1:1 ratio for the impacted area, creation and/or restoration of wetlands that would provide equivalent biological function, purchase of wetland credits at a mitigation bank, or some combination of these actions. Furthermore, during the application process, the Project proponent shall coordinate with the Corps and RWQCB to confirm that all proposed mitigation ratios and planned restoration activities are adequate to achieve a no net loss of wetland functions and services determination. Monitoring shall be required for impacted wetlands to ensure no weed infestations occur as a result of the project activities.

Mitigation Measure 8: In the event that archaeological resources are inadvertently discovered, work in the immediate vicinity (within 25 feet) of the find must stop until a qualified archaeologist can evaluate the significance of the find. Construction activities may continue in other areas beyond the 25-foot stop work area. A qualified archaeologist is defined as someone who meets the Secretary of the Interior's Professional Qualifications Standards in archaeology. The Current Planning Section shall be notified of such findings, and no additional work shall be done in the stop work area until the archaeologist has recommended appropriate measures, and those measures have been approved by the Current Planning Section and implemented.

Mitigation Measure 9: In the event that paleontological resources are inadvertently discovered, work in the immediate vicinity (within 25 feet) of the find must stop until a qualified paleontologist can evaluate the significant of the find. The Current Planning Section shall be notified of such findings, and no additional work shall be done in the stop work area until the paleontologist has recommended appropriate measures, and those measures have been approved by the Current Planning Section and implemented.

Mitigation Measure 10: Should any human remains be discovered during construction, all ground disturbing work shall cease and the County Coroner be immediately notified, pursuant to Section 7050.5 of the State of California Health and Safety Code. Work must stop until the County Coroner can make a determination of origin and disposition of the remains pursuant to California Public Resources Code Section 5097.98. If the County Coroner determines the remains to be Native American, the Native American Heritage Commission shall be contacted within 24 hours. A qualified archaeologist, in consultation with the Native American Heritage Commission, shall recommend subsequent measures for disposition of the remains.

Mitigation Measure 11: The applicant shall adhere to the San Mateo County Stormwater Pollution Prevention Program "General Construction and Site Supervision Guidelines," including, but not limited to, the following:

a. Stabilizing all denuded areas and maintaining erosion control measures continuously between October 1 and April 30.

b. Storing, handling, and disposing of construction materials and wastes properly, so as to prevent their contact with stormwater.

c. Controlling and preventing the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, wash water or sediments, and non-stormwater discharges to storm drains and watercourses.

d. Using sediment controls or filtration to remove sediment when dewatering the site and obtaining all necessary permits.

e. Avoiding cleaning, fueling, or maintaining vehicles on-site, except in a designated area where wash water is contained and treated.

f. Delineating with field markers clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees and drainage courses within the vicinity of areas to be disturbed by grading.

g. Protecting adjacent properties and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching, or other measures as appropriate.

h. Performing clearing and earth-moving activities only during dry weather.

i. Limiting and timing application of pesticides and fertilizers to prevent polluted runoff.

j. Limiting construction access routes and stabilizing designated access points.

k. Avoiding tracking dirt or other materials off-site; cleaning off-site paved areas and sidewalks using dry sweeping methods.

l. Training and providing instruction to all employees and subcontractors regarding the Watershed Protection Maintenance Standards and construction Best Management Practices.

m. Additional Best Management Practices in addition to those shown on the plans may be required by the Building Inspector to maintain effective stormwater management during construction activities. Any water leaving the site shall be clear and running slowly at all times.

n. Failure to install or maintain these measures will result in stoppage of construction until the corrections have been made and fees paid for staff enforcement time.

Mitigation Measure 12: No grading shall be allowed during the winter season (October 1 to April 30) to avoid potential soil erosion, unless the applicant applies for an Exception to the Winter Grading Moratorium and the Community Development Director grants the exception. Exceptions will only be granted if dry weather is forecasted during scheduled grading operations, and the erosion control plan includes adequate winterization measures (amongst other determining factors).

An applicant-completed and County-issued grading permit "hard card" is required prior to the start of any land disturbance/grading operations. Along with the "hard card," the applicant shall submit a letter to the Current Planning Section, at least two (2) weeks prior to commencement of grading, stating the date when grading operations will begin, anticipated end date of grading operations, including dates of revegetation and estimated date of establishment of newly planted vegetation.

Mitigation Measure 13: It shall be the responsibility of the engineer of record to regularly inspect the erosion control measures for the duration of all grading activities, especially after major storm events, and determine that they are functioning as designed and that proper maintenance is being performed. Deficiencies shall be immediately corrected, as determined by and implemented under the observation of the engineer of record.

Mitigation Measure 14: The site is considered a Construction Stormwater Regulated Site (SWRS). Any grading activities conducted during the wet weather season (October 1 to April 30) will require monthly erosion and sediment control inspections by the Building Inspection Section, as well as prior authorization from the Community Development Director to conduct grading during the wet weather season.

Mitigation Measure 15: Off-site hauling of excavated soil shall be limited to the hours of 9:00 a.m. to 3:00 p.m. on weekdays. Trucks or vehicles associated with the project shall not be parked on residential streets.

Mitigation Measure 16: The applicant shall obtain an encroachment permit for hauling of heavy loads on a public roadway. The applicant will be directed to submit traffic control plans which will notify the public of potential delays, and will have restricted hours for hauling operations. Any damage caused by the hauling operations or contractors equipment shall be repaired as directed by the County inspector.

Mitigation Measure 17: The applicant shall notify the public of hauling activities 10 days in advance of such work.

Mitigation Measure 18: In the event that tribal cultural resources are inadvertently discovered during project implementation, all work shall stop until a qualified professional

can evaluate the find and recommend appropriate measures to avoid and preserve the resource in place, or minimize adverse impacts to the resource, and those measures shall be approved by the Current Planning Section prior to implementation and continuing any work associated with the project.

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

RESPONSIBLE AGENCY CONSULTATION

U.S. Army Corps of Engineers
Regional Water Quality Control Board

INITIAL STUDY

The San Mateo County Current Planning Section has reviewed the Environmental Evaluation of this project and has found that the probable environmental impacts are insignificant. A copy of the initial study is attached.

REVIEW PERIOD: December 14, 2018 to January 14, 2019

All comments regarding the correctness, completeness, or adequacy of this Negative Declaration must be received by the County Planning and Building Department, 455 County Center, Second Floor, Redwood City, no later than **5:00 p.m., January 14, 2019**.

CONTACT PERSON

Summer Burlison
Project Planner, 650/363-1815
sburlison@smcgov.org

Summer Burlison, Project Planner

SSB:MDB:ann – MDBCC0520_WNH.DOCX

County of San Mateo
Planning and Building Department

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

1. **Project Title:** Soil Remediation and Land Restoration at the former Half Moon Bay Gun Club

2. **County File Number:** PLN 2015-00245

3. **Lead Agency Name and Address:** County of San Mateo Planning and Building Department, 455 County Center, 2nd Floor, Redwood City, CA 94063

4. **Contact Person and Phone Number:** Summer Burlison, Project Planner; 650/363-1815

5. **Project Location:** 3500 Frenchman's Creek Road, El Granada

6. **Assessor's Parcel Number and Size of Parcel:** 047-350-020; 357.13 acres

7. **Project Sponsor's Name and Address:** Peninsula Open Space Trust (POST), 222 High Street, Palo Alto, CA 94301

8. **General Plan Designation:** Open Space

9. **Zoning:** RM-CZ/DR/CD (Resource Management-Coastal Zone/Design Review/Coastal Development) and RM (Resource Management)

10. **Description of the Project:**

Background:

An Initial Study (IS) and Mitigated Negative Declaration (MND) were previously prepared for the project and certified by the County of San Mateo in 2015. A copy of these previous documents are included as Attachment C. CEQA Guidelines section 15162(b) states that if changes to a project or its circumstances occur or new information becomes available after adoption of a negative declaration, the lead agency shall prepare a subsequent EIR if required under subdivision (a); otherwise the lead agency shall determine whether to prepare a subsequent negative declaration, an addendum, or no further documentation. A secondary review of biological impacts was completed in 2018 by WRA Environmental Consultants and new impacts were discovered that were not previously known at the time of project review in 2015. The newly identified impacts could be alleviated through mitigation. Therefore, pursuant to CEQA Guidelines section 15162(a)(3)(A), this subsequent MND is required.

Project Scope Changes:

Project scope changes since the previous 2015 IS/MND are included in amended plans, see Attachment B, and include the installation of drainage improvements for the access roadway at the excavation area and reducing the footprint of the stockpile area. Proposed drainage improvements involve replacing a ditch relief culvert, installing three rolling dips and a gravel

subdrain, installing two waterbars along the side road, and adding rock to approximately eighty (80) linear feet of the roadway running through the excavation area. Additional rock may be added to existing roadway sections beyond the excavation area. The applicant will allow some of the disturbed excavation areas to naturally revegetate. The amended project includes clarification that excavation work in the Decision Unit (DU) areas will be at depths of approximately 1-foot. Additionally, in order to minimize potential impacts to San Mateo tree lupine, the amended project includes a reduced footprint of the stockpile area from 1.35 acres to 0.35 acre.

Based on newly identified biological impacts, detail in the Biological Resources Section (4) below, the applicant is seeking an amendment to the previously approved Coastal Development Permit (CDP) and Grading Permit. The CDP is appealable to the California Coastal Commission.

Summary of Project Description

The project will restore land through soil remediation at the former Half Moon Bay Gun Club which exists on a 357.13-acre parcel currently owned by POST. The project involves excavating approximately 300 cubic yards at depths of approximately 1-foot over approximately 9,300 square feet of flat land. Remedial action would include the removal of soil containing lead bullets, casings, shells, other metals, and polyaromatic hydrocarbons[1] at higher concentrations than the Environmental Screening Levels established by the Regional Water Quality Control Board (RWQCB). The project is intended to achieve a conservative, unrestricted lead cleanup goal of 80 milligrams of lead per kilogram of soil, which is acceptable for residential land use pursuant to RWQCB standards (RWQCB Environmental Screening Levels, February 2016). No construction is proposed, except for drainage improvements (detailed in the previous section) to allow land access beyond the project area. No trees will be removed, and no fill, including import fill, is proposed for soil excavation areas. Erosion control blankets and seed-free wattles will be used to stabilize disturbed areas. Revegetation of disturbed areas will be permitted to occur naturally with surrounding native vegetation, through the application of a local mix of natives, and with measures to improve drainage control along the access route. For further project description detail, see the 2015 IS/MND project description (Attachment C).

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The IS/MND have been updated to consider the project scope changes identified above, and in accordance with the updated Biological Resources Evaluation, prepared by WRA Environmental Consultants, dated April 2018. Additionally, this IS document includes a Tribal Cultural Resources section discussion, pursuant to Assembly Bill (AB) 52, that was not included in the previous 2015 IS/MND.

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[1] Polyaromatic hydrocarbons (PAHs) are typical in trap/skeet materials.

11. **Surrounding Land Uses and Setting:** The 357.13-acre parcel is part of a larger 896-acre area of land that was acquired by POST in 2014 and is maintained as open space. The project site consists of moderately steep, heavily wooded and grass-covered open space and contains a single-story clubhouse formerly used by the Half Moon Bay Gun Club. The project site is approximately two miles northeast from El Granada Boulevard and is accessible by a private vehicle access road from El Granada Boulevard, traversing State Park lands before passing through the project area. Surrounding land use under State Parks ownership is rural public open space consisting of moderately to steep-sloped heavily vegetated hills with very few rural residential properties.

12. **Other Public Agencies Whose Approval is Required:** U.S. Army Corps of Engineers; Regional Water Quality Control Board

13. **Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? If so, has consultation begun?:**
No California Native American tribe has requested consultation pursuant to Public Resources Code section 21080.3.1.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

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

EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in 5. below, may be cross-referenced).

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063(c)(3)(D)). In this case, a brief discussion should identify the following:

   a. Earlier Analysis Used. Identify and state where they are available for review.

   b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c. Mitigation Measures. For effects that are "Less Than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources. Sources used or individuals contacted should be cited in the discussion.

1. AESTHETICS. Would the project:				
	Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
1.a. Have a significant adverse effect on a scenic vista, views from existing residential areas, public lands, water bodies, or roads?				X

Discussion: The project would not have any adverse effects on views, as the project does not involve any new significant development. Additionally, the project does not propose significant changes to any natural landforms or topography as a majority of the excavation work would be limited to relatively flat, previously disturbed areas with approximately 1 feet of excavation in any area. All proposed drainage improvements would be at-grade. Furthermore, all disturbed areas would be revegetated, naturally or manually, after excavation. **Source:** Project Application/Plans; Site Visit, 2015.					
1.b.	Significantly damage or destroy scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
Discussion: The project would not damage or destroy any scenic resources, as the project would involve the excavation of approximately 1-foot of topsoil in relatively flat open areas, with the exception of a weathered vertical granite berm previously used for target practice that would only require approximately 1-foot of excavation and would be cut to a stable slope. Furthermore, the project site is not within, or adjacent to, a scenic highway or corridor. **Source:** Project Application/Plans; Site Visit, 2015.					
1.c.	Significantly degrade the existing visual character or quality of the site and its surroundings, including significant change in topography or ground surface relief features, and/or development on a ridgeline?				X
Discussion: The project would not degrade the existing visual character or quality of the area as the project involves the excavation of approximatley 1-foot of soil in relatively flat open, previously disturbed areas. While the project would involve drainage improvements along the access roadway, such improvements would not result in a significant change to a natural landform or topography. See staff's discussion in Sections 1.a. and 1.b. **Source:** Project Application/Plans; Site Visit, 2015.					
1.d.	Create a new source of significant light or glare that would adversely affect day or nighttime views in the area?				X
Discussion: The project does not propose to install any sources of light or glare to the area and all work would be conducted during daylight hours. **Source:** Project Plans.					
1.e.	Be adjacent to a designated Scenic Highway or within a State or County Scenic Corridor?				X
Discussion: The project is not located adjacent to a scenic highway or within a scenic corridor. **Source:** County General Plan Scenic Corridors Map.					

1.f.	If within a Design Review District, conflict with applicable General Plan or Zoning Ordinance provisions?				X
Discussion: The project site is located within a Design Review District; however, the project only involves at-grade drainage improvements and therefore would not conflict with any such applicable General Plan or Zoning Ordinance provisions. **Source:** County Zoning Map; Project Plans.					
1.g.	Visually intrude into an area having natural scenic qualities?				X
Discussion: The project would not have any adverse visual impacts to the area, as the project only involves at-grade drainage improvements. See staff's discussion in Section 1.a. **Source:** Project Plans.					

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

		Potentially Significant Impacts	*Significant Unless Mitigated*	*Less Than Significant Impact*	*No Impact*
2.a.	For lands outside the Coastal Zone, convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
Discussion: N/A. The project area is located within the Coastal Zone. **Source:** Project Location.					
2.b.	Conflict with existing zoning for agricultural use, an existing Open Space Easement, or a Williamson Act contract?				X
Discussion: The project area is zoned Resource Management-Coastal Zone which is the County's					

open space zoning district. There are no known open space easements affecting the property. The property's Williamson Act contract was non-renewed on September 23, 2011 and expires on December 31, 2020. Since the project proposes no structural development or change in land use, there are no conflicts with the property's Williamson Act contract (currently in non-renewal status). **Source:** County Zoning Map; Notice of Non-Renewal of California Land Conservation Contracts, Document Number 2011-110518, Recorded September 23, 2011.					
2.c.	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forestland to non-forest use?				X
Discussion: The project would not result in the conversion of Farmland to non-agricultural use and is not considered forestland. While the proposed staging area is assumed to have been historically used for dry farming, the area does not currently support agriculture, nor is the immediate project site currently used for farming activities or identified as Farmland on the State of California's Important Farmlands Map. Furthermore, the project parcel is in the open rural hills of El Granada and not comprised of forestland. **Source:** State of California Department of Conservation, Important Farmlands Map 2012; Site Location.					
2.d.	For lands within the Coastal Zone, convert or divide lands identified as Class I or Class II Agriculture Soils and Class III Soils rated good or very good for artichokes or Brussels sprouts?				X
Discussion: The project area is not comprised of Class I, II, or III soils according to the U.S. Department of Agriculture Natural Resources Conservation Service soil survey. **Source:** U.S. Department of Agriculture Natural Resources Conservation Service, Web Soil Survey (accessed October 9, 2015).					
2.e.	Result in damage to soil capability or loss of agricultural land?				X
Discussion: The project will not result in damage to soil capability or loss of agricultural land. The U.S. Department of Agriculture Natural Resources Conservation Service soil survey identifies the project area soil as "Rough broken land" and no agricultural activities are being conducted on the property. **Source:** U.S. Department of Agriculture Natural Resources Conservation Service, Web Soil Survey (accessed October 9, 2015); Project Plans.					
2.f.	Conflict with existing zoning for, or cause rezoning of, forestland (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland				X

	Production (as defined by Government Code Section 51104(g))? *Note to reader: This question seeks to address the economic impact of converting forestland to a non-timber harvesting use.*				

Discussion: The project site is zoned Resource Management-Coastal Zone and does not contain forestland, timberland, or timberland zoned Timberland Production.

Source: County Zoning Map.

3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

		Potentially Significant Impacts	*Significant Unless Mitigated*	*Less Than Significant Impact*	*No Impact*
3.a.	Conflict with or obstruct implementation of the applicable air quality plan?		X		

Discussion: The project would not conflict with or obstruct the implementation of the Bay Area Air Quality Management District's (BAAQMD) 2017 Clean Air Plan (CAP), which is the regulating air quality plan for San Mateo County. During project implementation, air emissions would be generated from site grading, equipment, and work vehicles; however, any such grading-related emissions would be tempor ary and localized. Furthermore, the project would not generate any long-term operational air quality emissions as the project proposes no new development or change in land use.

The BAAQMD provides prelimimary screening criteria in their 2017 BAAQMD CEQA Guidelines to indicate whether a project would result in the generation of construction-related criteria air-pollutants and/or precursers that exceed defined thresholds of significance. The proposed project, with the basic construction mitigation control measures below, meets the screening criteria indicating a less than significant impact for construction-related activities as the project does not propose any applicable land use or development exceeding such criteria.

Mitigation Measure 1: The applicant shall submit a plan to the Planning and Building Department prior to the issuance of any grading "hard card" that, at a minimum, includes the "Basic Construction Mitigation Measures" as listed in Table 8-2 of the BAAQMD CEQA Guidelines (May 2017). These measures shall be implemented prior to beginning any ground disturbance and shall be maintained for the duration of the project activities:

a. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access road) shall be watered two times per day.

b. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

c. All visible mud or dirt track-out onto adjacent paved roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

d. All vehicle speeds on unpaved roads shall be limited to 15 mph.

e. Idling times shall be minimized either by shutting equipment or vehicles off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics

Control Measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

f. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

g. Post a publicly visible sign with the telephone number and person to contact at the County regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Bay Area Air Quality Management District's phone number shall also be visible to ensure compliance with applicable regulations.

Source: BAAQMD CEQA Guidelines, May 2017; BAAQMD 2017 Clean Air Plan; Project Plans.

3.b. Violate any air quality standard or contribute significantly to an existing or projected air quality violation?			X	

Discussion: The project would not violate any construction-related air quality standard or contribute significantly to an existing or projected air quality violation once completed. Short-term grading-related activities would result in temporary emissions of particulate matter in the form of fugitive dust and exhaust from diesel construction vehicles, but given the short construction duration, any temporarily generated emissions would be less than significant. The applicant proposes to implement BAAQMD construction mitigation control measures throughout the project duration to minimize temporary air pollutants, as outlined in Mitigation Measure 1, and to ensure such temporary impacts are maintained at a less than significant level.

Source: BAAQMD CEQA Guidelines, May 2017; Project Plans.

3.c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?			X	

Discussion: The San Francisco Bay Area is in non-attainment for ozone and particulate matter (PM), including PM 10 (state status) and PM 2.5 (state status), including the 24-hour PM 2.5 national standard. Based on analysis of criteria pollutant emissions for the proposed project using the urban emission program URBEMIS, the project would only generate minor temporary criteria pollutant emissions given the short construction schedule and limited scope of work, which would be minimal with the implementation of Mitigation Measure 1. Therefore, construction-related emissions would not result in a cumulatively considerable increase of any criteria pollutant for which the project region is in non-attainment under an applicable Federal or State ambient air quality standard. The current amended project, which adds minor drainage improvements to the existing access road in the project area, are not expected to generate a significant change to this conclusion.

Source: BAAQMD Air Quality Standards and Attainment Status, http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status; URBEMIS 2007, Version 9.2.4.

3.d. Expose sensitive receptors to significant pollutant concentrations, as defined by				X

BAAQMD?				

Discussion: The project would result in short-term, grading-related emissions, such as fugitive dust and exhaust from construction vehicles; however, the project site is located in a remote, rural area with no sensitive receptors (schools, residences, etc.) located within a mile of the project vicinity.

Source: Project Plans; Project Location.

3.e.	Create objectionable odors affecting a significant number of people?				X

Discussion: The project is located in a remote, rural, unpopulated area where any odors generated by the project would be temporary and minimal. Therefore, the project would not generate objectionable odors affecting a significant number of people.

Source: Project Plans; Project Location.

3.f.	Generate pollutants (hydrocarbon, thermal odor, dust or smoke particulates, radiation, etc.) that will violate existing standards of air quality on-site or in the surrounding area?			X	

Discussion: The project would involve the excavation and removal of soil with concentrations of lead and polyaromatic hydrocarbons (PAHs) above the Environmental Screening Levels (for residential use) established by the Regional Water Quality Control Board. (However, having concentrations of contaminants above ESLs does not necessarily indicate an unacceptable risk to human health or the environment.) The primary objective of the project is to eliminate the identified polluted soils to a conservative level acceptable for residential land use (although recreational open space, not residential use, is the current and intended future land use for the parcel). Additionally, the project would result in short-term dust and exhaust emissions from construction activities. See staff's discussion in Section 3.a.

Source: Project Application/Plans; County Environmental Health Division.

4. BIOLOGICAL RESOURCES. Would the project:

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

Discussion: WRA Environmental Consultant's (WRA) Biological Resources Evaluation supplements the previous biological survey completed by Kramer Botanical for San Mateo tree

lupine (*Lupinus arboreus var. eximius*), a rare, special-status species that is found to occur within the project area. In addition to the one individual that occurs near the excavation area at DU-10, the species is found to occur in abundance in the disturbed coastal scrub surrounding the stockpile area and in the northern portion of the stockpile footprint. The stockpile of soil that will be generated during the remediation is being shifted from the original project design to the north and reduced in size to minimize the extent of San Mateo tree lupine individuals that would be temporarily and directly impacted. However, the project has the potential to impact approximately less than 1% of the San Mateo tree lupine individuals observed within the study area (1 individual within the stockpile area out of the 328 total individuals observed) from the temporary stockpiling of excavated materials. Given the disturbance-adapted nature of San Mateo tree lupine and the adjacent, abundant seed source, the species is expected to recolonize the area after the project is completed. Nonetheless, Mitigation Measure 2 and 3 are recommended to reduce project related impacts to less than significant.

WRA identified three other special-status species, Brewer's calandrinia (*calandrinia breweri*, Rank 4.2), Western Leatherwood (*dirca occidentalis,* Rank 1B.2), and California Bottle Brush (*Elymus californicus,* Rank 4.3), found to be likely to occur within the area, but were not observed during surveys done at appropriate blooming periods, and therefore, were determined to not be in the current study area. The remaining 75 special-status plant species documented in the area were determined to be unlikely or have no potential to occur in the study area.

Sixty special-status wildlife species have been documented in the area surrounding the study area, but only 2 were documented within the study area; the San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens)* and California Red Legged Frog (*Rana draytonii*) (CRLF). The drainage improvements proposed to avoid ponding on the roadway will minimize the occasionally present dispersal habitat for CRLF (within the roadway), which will minimize opportunities for vehicle strikes in areas where CRLF have been observed. Thus, the quality of CRLF dispersal habitat would increase by minimizing habitat on the roadway, while still maintaining water levels within adjacent wetlands. Therefore, the project is expected to result in a net benefit to CRLF dispersal habitat. Three additional species have a moderate or high potential to occur within the study area; Costa's Hummingbird (*Calypte costae*), Allen's hummingbird (*Selasphorus sasin*), and the olive-sided flycatcher (*Contopus cooperi*). The project area also has the potential to host common birds protected by the Migratory Bird Treaty Act. Mitigation measures 2– 6 are recommended by WRA to minimize adverse impacts to these identified special-status wildlife species.

Mitigation Measure 2: To reduce the potential for impacts to sensitive communities and special-status species, the following general best management practices (BMPs) are recommended for implementation:

Appropriate perimeter erosion and sediment control measures (i.e. silt fencing, straw waddles) shall be installed around any stockpiles of soil or other materials which could be transported by rainfall or other flows in order to reduce the possibility of soil erosion and sediments flowing into natural habitats.

a. All access, staging, and work areas shall be delineated with orange construction fencing, or similar, and all work activities shall be limited to these areas.
b. All access, staging, and work areas shall be the minimum size necessary to conduct the work.
c. All staging, maintenance, and storage of construction equipment shall be performed in a manner to preclude any direct or indirect discharge of fuel, oil, or other petroleum products into the Study Area. No other debris, rubbish, soil, silt, sand, or other construction-related materials or wastes shall be allowed to enter into or be placed where they may be washed by rainfall or runoff into wetland areas. All such debris and waste shall be picked-up daily and shall be properly disposed of at an appropriate facility. If a spill of fluid materials occurs, the area shall be cleaned and contaminated materials disposed of properly. The affected spill area

shall be restored to its natural condition.

d. Disturbance or removal of vegetation shall not exceed the minimum necessary to conduct the work.
e. Given that the Project proposes to allow excavated areas to revegetate naturally, certified weed-free erosion control natural fiber blankets shall be used to stabilize disturbed soils.
f. Stockpiles of soil or other materials that can be blown by wind shall be covered when not in active use.
g. All trucks hauling soil, sand, and other loose materials shall be covered.

Mitigation Measure 3: The following measures shall be implemented to minimize impacts to San Mateo tree lupine:

a. A temporary protective barrier or sheeting shall be placed on the ground in the location of the stockpiling area to minimize disturbance of the existing substrates and seedbank during temporary stockpiling efforts to avoid contamination from the stockpiled materials.
b. The extent of the stockpiling area and construction access routes in areas with known populations of San Mateo tree lupine should be delineated with orange construction flagging to avoid incidental, direct impacts from construction equipment access and stockpiling.
c. The size, limit, and duration of the stockpiling area shall be minimized to the extent possible to reduce temporary disturbance to San Mateo tree lupine individuals.
d. Post-construction monitoring of any project-related impacted habitat shall ensure that San Mateo tree lupine recolonizes into areas where it currently occurs. Monitoring shall occur for up to three years following the completion of project work or until the area demonstrates a trajectory of San Mateo tree lupine re-establishment of similar density to pre-construction conditions.
e. The applicant shall make an effort to relocate the one shrubby lupine (presumed to be Lupinus arboreus var. eximius) identified by Kramer Botanical (Kramer Botanical Assessment, May 15, 2015), located near the eastern edge of "Decision Unit-10," should there be a foreseen impact to the individual during project implementation.

Mitigation Measure 4: A pre-construction survey for woodrat houses shall be conducted by a qualified biologist within 30 days prior to the start of work. If woodrat houses are found to be present in the work area, the following additional measures shall be implemented:

a. Any woodrat houses present in the work area, shall be dismantled by and under the supervision of a qualified biologist.
b. If young are encountered during the dismantling process, the material shall be placed back on the house, and the house will remain undisturbed for 14 days. After 14 days has passed, nest dismantling shall begin again. Once fully deconstructed, any materials removed shall be moved to suitable adjacent areas that will not be impacted by project activities and the materials shall be scattered.

Mitigation Measure 5: In compliance with the Migratory Bird Treaty Act, a survey for active bird nests shall be conducted by a qualified biologist no more than 14 days prior to the start of project activities (vegetation removal, grading, or other ground-disturbing activities) during the nesting season (February 1 through August 31). The survey shall be conducted in a sufficient area around the work site to identify the location and status of any nests that could potentially be directly or indirectly affected by project activities. If active nests or protected species are found within the project area or close enough to these areas to affect nesting success, the following shall be implemented:

a. A work exclusion zone shall be established around each nest by a qualified biologist that will remain in place until all young in the nest have fledged or the nest otherwise becomes inactive. As exclusion zones vary in size depending on the species, the size will be determined by a

qualified biologist.

Mitigation Measure 6: In order to mitigate impacts to the CRLF, consultation with the USFWS shall be initiated in order to obtain coverage for harassment during remediation and road improvement work. The qualification of designated biologists shall be submitted to the USFWS for review and written approval at least 30 calendar days prior to the start of work. The following measures from the Programmatic Biological Opinion for CRLF shall be implemented, unless superceded by mitigation measures as a result of consultation, and then the superceding measures shall be implemented:

a. Within 24 hours prior to initial ground disturbance, a preconstruction survey for CRLF shall be conducted. If any life stage of the species is found, the approved biologist will capture and move any individuals to an appropriate relocation site.
b. The approved biologist shall conduct an education training for employees working on the project. Personnel will be required to attend the training that would cover topics such as identification and legal protection of the species, as well as project specific avoidance and minimization measures.
c. The approved biologist shall be onsite during all activities that may result in take of CRLF including vegetation removal, initial ground disturbance, and spoils hauling.
d. The number of access routes, construction areas, equipment staging, storage, parking, and stockpile areas will be minimized to the extent possible.
e. To minimize temporary habitat disturbances, project-related vehicle traffic shall be restricted to established roads, and construction areas. Project-related vehicles shall observe a 20-mile per hour speed limit within construction areas.
f. All construction equipment shall be maintained to prevent leaks of fuels, lubricants, or other toxic fluids.
g. In order to avoid attracting predators of the CRLF, all trash shall be deposited in covered or closed trash containers that are removed from the project site regularly.
h. Any restoration and re-vegetation work for temporary effects shall be implemented using native California plant species.
i. Plastic monofilament netting (erosion control matting, or wrapping around wattles) or similar materials shall not be used on the project in order to avoid entangling, strangling, or trapping CRLF.
j. Construction shall be limited to the dry season (April 30 to October 1) to avoid impacting CRLF when they are most likely to use the study area as a migration corridor.
k. No construction activities shall occur during rain events or within 24-hours following a rain event.
l. Construction activities shall cease no less than 30 minutes before sunset and shall not begin again prior to no less than 30 minutes after sunrise.

Source: Half Moon Bay Gun Club Soil Remediation Project Biological Resources Evaluation. April 2018. WRA Environmental Consultants; 2015 Mitigated Negative Declaration.

4.b.	Have a significant adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			X	

Discussion: The project area does not contain riparian habitat or sensitive natural communities other than the potentially jurisdictional wetlands, discussed in Section 4.c. below and San Mateo tree

lupine, discussed in Section 4.a. above. The project will result in the net gain of critical habitat through the creation of depressions that can be filled with water from a seep, creating small pools and more habitat suitability for CRLF as the depressions will increase water depth and allow for enhanced predator avoidance.

Source: Half Moon Bay Gun Club Soil Remediation Project Biological Resources Evaluation. April 2018. WRA Environmental Consultants.

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

Discussion: The project area contains federally protected wetlands and non-wetland waters subject to jurisdiction by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. Specifically, 0.06 acres of seasonal emergent wetland and 0.02 acres of arroyo willow thicket wetland are found in the project area. The proposed project involves excavation work that will result in a temporary impact to approximately 1,100 sq. ft. (0.03 acres) of the seasonal emergent wetland and approximately 50 sq. ft. (less than 0.01 acre) of the arroyo willow thicket wetland. Excavation work will not affect the hydrological sources (upslope seeps and natural runoff) of the wetlands, and the excavated areas will not be filled after the contaminated soil is removed. Therefore, the impacted wetland areas will be deeper and remain inundated for a greater duration after project completion than current conditions allow. Implementation of the following mitigation measure will ensure that all necessary federal and state permits are obtained for the work and any temporary adverse effects on the wetland areas are mitigated to a less than significant level. area does not contain any jurisdictional wetland areas or habitat. Therefore, the project would not have an impact on federally protected wetlands.

Mitigation Measure 7: Any discharges of dredged or fill material into jurisdictional waters of the United States shall be in conformance with a permit issued by the U.S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act and Water Quality Certification by the Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the Clean Water Act, prior to any grading or construction activities that may impact jurisdictional areas. Additionally, U.S. Fish and Wildlife Services Compliance with the federal and state "no net loss of wetlands" policy is required for the proposed project. The avoidance, minimization, and mitigation measures required by such permits shall be implemented.

Impacts to wetlands shall require the creation or restoration of wetlands at a minimum of a 1:1 ratio for the impacted area, creation and/or restoration of wetlands that would provide equivalent biological function, purchase of wetland credits at a mitigation bank, or some combination of these actions. Furthermore, during the application process, the Project proponent shall coordinate with the Corps and RWQCB to confirm that all proposed mitigation ratios and planned restoration activities are adequate to achieve a no net loss of wetland functions and services determination. Monitoring shall be required for impacted wetlands to ensure no weed infestations occur as a result of the project activities.

Source: Project Location;Half Moon Bay Gun Club Soil Remediation Project Biological Resources Evaluation. April 2018. WRA Environmental Consultants.

4.d.	Interfere significantly with the movement of any native resident or migratory fish or			x	

	wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?				
Discussion: As identified by WRA, the project area functions as a wildlife corridor as the project area is located above two small natural canyons on a hillslope and is a dispersal corridor by CRLF. Additionally, the downhill canyons may also serve to naturally funnel wildlife through the area when moving between surrounding habitats. No migratory obstructions are proposed under the project. **Source:** Project Location; Half Moon Bay Gun Club Soil Remediation Project Biological Resources Evaluation. April 2018. WRA Environmental Consultants.					
4.e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (including the County Heritage and Significant Tree Ordinances)?				x
Discussion: The project, as proposed and mitigated, would not conflict with any local policies or ordinances protecting biological resources. See staff's discussion in Section 4.a-d. Furthermore, no trees are proposed for removal. **Source:** Project Plans					
4.f.	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, other approved local, regional, or State habitat conservation plan?				x
Discussion: There are no known adopted Habitat Conservation Plans, Natural Conservation Community Plans, or other approved local, regional, or State habitat conservation plans for the project site. **Source:** California Department of Fish and Wildlife, Habitat Conservation Planning, California Regional Conservation Plans Map (October 2017).					
4.g.	Be located inside or within 200 feet of a marine or wildlife reserve?				x
Discussion: The project site is not located inside or within 200 ft. of a marine or wildlife reserve. **Source:** Project Location; U.S. Fish and Wildlife Services, National Wildlife Refuge System Locator.					
4.h.	Result in loss of oak woodlands or other non-timber woodlands?				x
Discussion: The project would not result in the loss of oak woodlands or other non-timber woodlands, as there are no such woodlands within the project area. **Source:** Site Visit, 2015.					

5. CULTURAL RESOURCES. Would the project:				
	Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
5.a. Cause a significant adverse change in the significance of a historical resource as defined in CEQA Section 15064.5?				x

Discussion: The project area does not contain any known historical resources. There is a single-story building in the project area that was used as a clubhouse for the former gun club which would remain as-is. The project does not propose to modify or remove this structure.

Source: Project Plans; California State Parks, Office of Historic Preservation, California Historical Resources List; County General Plan, Background, Historical and Archaeological Resources Appendices.

5.b. Cause a significant adverse change in the significance of an archaeological resource pursuant to CEQA Section 15064.5?		x		

Discussion: A records request search from the Northwest Information Center indicates no records were found on any research of resources in the project area and no reports that were available within the records search radius revealed any particular reason to believe that the proposed project would cause any significant adverse change in unknown archaeological resources. Additionally, the project is limited to shallow excavations of approximately 1-foot in depth in specific areas previously disturbed by human activity. Nonetheless, the following mitigation measures are recommended as best management practices in the event of the potential unearthing of unknown archaelogocail resources during proposed earthwork activities:

Mitigation Measure 8: In the event that archaeological resources are inadvertently discovered, work in the immediate vicinity (within 25 feet) of the find must stop until a qualified archaeologist can evaluate the significance of the find. Construction activities may continue in other areas beyond the 25-foot stop work area. A qualified archaeologist is defined as someone who meets the Secretary of the Interior's Professional Qualifications Standards in archaeology. The Current Planning Section shall be notified of such findings, and no additional work shall be done in the stop work area until the archaeologist has recommended appropriate measures, and those measures have been approved by the Current Planning Section and implemented.

Source: Project Plans; California Historical Resources Information System, Northwest Information Center, Records Search, May 16, 2018.

5.c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		x		

Discussion: The project would be conducted on previously disturbed and relatively flat land where excavations are limited to approximately 1-foot in depth. Therefore, the project is not expected to directly or indirectly destroy a unique paleontological resource or unique geologic feature. Nonetheless, the project may have the potential to impact unknown paleontological resources, therefore, the following mitigation measure is recommended:

Mitigation Measure 9: In the event that paleontological resources are inadvertently discovered, work in the immediate vicinity (within 25 feet) of the find must stop until a qualified paleontologist can evaluate the significant of the find. The Current Planning Section shall be notified of such findings, and no additional work shall be done in the stop work area until the paleontologist has recommended appropriate measures, and those measures have been approved by the Current Planning Section and implemented.

Source: Project Plans.

5.d. Disturb any human remains, including those interred outside of formal cemeteries?		x		

Discussion: The project is not expected to disturb any human remains, as the project site consists of disturbed land resulting from past human activity (i.e., former gun range) and proposed excavations are limited to approximately1-foot in depth. Nonetheless, in the event that human remains are inadvertenly discovered, the following mitigation measure shall apply:

Mitigation Measure 10: Should any human remains be discovered during construction, all ground disturbing work shall cease and the County Coroner be immediately notified, pursuant to Section 7050.5 of the State of California Health and Safety Code. Work must stop until the County Coroner can make a determination of origin and disposition of the remains pursuant to California Public Resources Code Section 5097.98. If the County Coroner determines the remains to be Native American, the Native American Heritage Commission shall be contacted within 24 hours. A qualified archaeologist, in consultation with the Native American Heritage Commission, shall recommend subsequent measures for disposition of the remains.

Source: Project Plans.

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

Discussion: While the project is located within a region of California characterized by active faulting, there are no known active faults that cross the project site per the Alquist-Priolo Earthquake Fault Zone Maps published by the State Department of Conservation. **Source:** State Department of Conservation, Alquist-Priolo Earthquake Fault Zone Maps, Montara Mountain Quadrangle, 1982; Project Plans.				
ii. Strong seismic ground shaking?				x
Discussion: The project would involve no more approximately 1 foot of excavation below grade and does not involve any new significant structural development or change in use. Therefore, the project would not be impacted by strong seismic ground shaking. **Source:** Project Plans.				
iii. Seismic-related ground failure, including liquefaction and differential settling?				x
Discussion: The project would involve the shallow excavation of relatively flat areas to remove contaminated soil from a former gun range. There is no significant structural development or change in rural open space land use proposed as part of this project. Excavation of a granite berm previously used for target practice is comprised of relatively hard material as evidenced by the observation of high-velocity bullets appearing to have penetrated no more than 8 inches into the vertical berm. Therefore, it is not expected that the proposed excavation work will be impacted by seismic-related ground failures, such as liquefaction or differential settling. **Source:** Project Plans.				
iv. Landslides?				x
Discussion: According to the County's Local Coastal Program (LCP), the entire El Granada hills area is within a known potential landslide area; however, the County's Geotechnical Hazards Synthesis Map characterizes the project area as composed of granitic rock that is generally non-expansive where landslides would be few. Furthermore, the project involves shallow excavation of relatively flat already-disturbed areas. Excavation of a granite berm previously used for target practice is a relatively hard material, and excavation of the berm would be approximately 1-foot in depth to remove bullets embedded up to eight inches into the berm wall. Therefore, the project is not expected to be impacted by, or cause, a landslide. **Source:** County Local Coastal Program, Hazards Map; County Geotechnical Hazards Synthesis Map.				
v. Coastal cliff/bluff instability or erosion? *Note to reader: This question is looking at instability under current conditions. Future, potential instability is looked at in Section 7 (Climate Change).*				x
Discussion: The project site is located over three miles from the coastline, in the upper hills of El Granada. Therefore, the project would not have an impact on coastal cliff or bluff instability or erosion.				

Source: Project Location.					
6.b.	Result in significant soil erosion or the loss of topsoil?		x		

Discussion: The project would include 300 cy of grading consisting of the removal of approximately 1 foot of soil in five separate areas of a former private gun range. The areas of remediation are relatively flat, previously disturbed areas located along an existing vehicle access road. Additionally, drainage improvements will be made along the existing access roadway. The applicant proposes to implement erosion control measures to ensure that soil erosion is minimized. Additionally, the vertical granite berm is inherently stable where excavation is not expected to result in significant soil erosion. The below mitigation measures will further ensure that grading work does not result in significant soil erosion impacts.

Mitigation Measure 11: The applicant shall adhere to the San Mateo County Stormwater Pollution Prevention Program "General Construction and Site Supervision Guidelines," including, but not limited to, the following:

a. Stabilizing all denuded areas and maintaining erosion control measures continuously between October 1 and April 30.

b. Storing, handling, and disposing of construction materials and wastes properly, so as to prevent their contact with stormwater.

c. Controlling and preventing the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, wash water or sediments, and non-stormwater discharges to storm drains and watercourses.

d. Using sediment controls or filtration to remove sediment when dewatering the site and obtaining all necessary permits.

e. Avoiding cleaning, fueling, or maintaining vehicles on-site, except in a designated area where wash water is contained and treated.

f. Delineating with field markers clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees and drainage courses within the vicinity of areas to be disturbed by grading.

g. Protecting adjacent properties and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching, or other measures as appropriate.

h. Performing clearing and earth-moving activities only during dry weather.

i. Limiting and timing application of pesticides and fertilizers to prevent polluted runoff.

j. Limiting construction access routes and stabilizing designated access points.

k. Avoiding tracking dirt or other materials off-site; cleaning off-site paved areas and sidewalks using dry sweeping methods.

l. Training and providing instruction to all employees and subcontractors regarding the Watershed Protection Maintenance Standards and construction Best Management Practices.

m. Additional Best Management Practices in addition to those shown on the plans may be required by the Building Inspector to maintain effective stormwater management during construction activities. Any water leaving the site shall be clear and running slowly at all times.

n. Failure to install or maintain these measures will result in stoppage of construction until the corrections have been made and fees paid for staff enforcement time.

Mitigation Measure 12: No grading shall be allowed during the winter season (October 1 to April 30) to avoid potential soil erosion, unless the applicant applies for an Exception to the Winter Grading Moratorium and the Community Development Director grants the exception. Exceptions will only be granted if dry weather is forecasted during scheduled grading operations, and the erosion control plan includes adequate winterization measures (amongst other determining factors).

An applicant-completed and County-issued grading permit "hard card" is required prior to the start of any land disturbance/grading operations. Along with the "hard card," the applicant shall submit a letter to the Current Planning Section, at least two (2) weeks prior to commencement of grading, stating the date when grading operations will begin, anticipated end date of grading operations, including dates of revegetation and estimated date of establishment of newly planted vegetation.

Mitigation Measure 13: It shall be the responsibility of the engineer of record to regularly inspect the erosion control measures for the duration of all grading activities, especially after major storm events, and determine that they are functioning as designed and that proper maintenance is being performed. Deficiencies shall be immediately corrected, as determined by and implemented under the observation of the engineer of record.

Mitigation Measure 14: The site is considered a Construction Stormwater Regulated Site (SWRS). Any grading activities conducted during the wet weather season (October 1 to April 30) will require monthly erosion and sediment control inspections by the Building Inspection Section, as well as prior authorization from the Community Development Director to conduct grading during the wet weather season.

Source: Project Plans.

6.c.	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, severe erosion, liquefaction or collapse?				X

Discussion: Given the limited excavation proposed, existing topographic conditions of the site, and short construction duration, the project is not expected to result in unstable land conditions. Furthermore, the occurrence for landslide, lateral spreading, subsidence, significant erosion, or liquefaction, as a result of the project, is expected to be low.

Source: Project Plans; Site Visit, 2015; County Geotechnical Hazards Synthesis Map.

6.d.	Be located on expansive soil, as noted in the 2010 California Building Code, creating significant risks to life or property?				X

Discussion: The County's Geotechnical Hazards Synthesis Map characterizes the project area as composed of granitic rock that is generally non-expansive. Therefore, risk of the project having an adverse impact on life or property due to expansive soils is not a concern.

Source: County Geotechnical Hazards Synthesis Map.

6.e.	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the				X

disposal of wastewater?				

Discussion: The project does not require the construction or use of septic tanks or alternative wastewater disposal systems.

Source: Project Plans.

7. **CLIMATE CHANGE.** Would the project:				
	Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
7.a. Generate greenhouse gas (GHG) emissions (including methane), either directly or indirectly, that may have a significant impact on the environment?			x	

Discussion: Implementation of the project would temporarily generate GHG emissions from construction vehicles and equipment. Given the minimal amount of grading proposed, excavation work is only expected to last 2 to 3 days. Stockpiled soils would be tested and would be contained and remain on-site until they are accepted and transported to an appropriate disposal facility (which would take one to two weeks). Therefore, it is expected that any potential temporary increase in GHG emission levels would be minimal and limited over a short duration of time.

Source: Project Plans.

7.b. Conflict with an applicable plan (including a local climate action plan), policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			x	

Discussion: The project would not conflict with the applicable San Mateo County Energy Efficiency Climate Action Plan (EECAP) pursuant to the applicable criteria of the EECAP Development Checklist for individual projects, specifically, criteria 15.1 for construction idling. Mitigation Measure 1 would ensure that the project complies with the EECAP for construction idling.

Source: San Mateo County Energy Efficiency Climate Action Plan.

7.c. Result in the loss of forestland or conversion of forestland to non-forest use, such that it would release significant amounts of GHG emissions, or significantly reduce GHG sequestering?				x

Discussion: The project would not result in the loss of forestland or the conversion of forestland to non-forestland use, as the project site does not contain any forestland and no tree removal is proposed.

Source: Project Plans; Site Visit, 2015.

7.d.	Expose new or existing structures and/or infrastructure (e.g., leach fields) to accelerated coastal cliff/bluff erosion due to rising sea levels?				x
Discussion: The project site is located over three miles inland from the Pacific Ocean and therefore would not contribute to accelerated coastal cliff/bluff erosion due to rising sea levels. **Source:** Project Location.					
7.e.	Expose people or structures to a significant risk of loss, injury or death involving sea level rise?				x
Discussion: The project is located in the upper hills of El Granada, over three miles away from the Pacific Ocean, where sea level rise does not pose a potential concern. **Source:** Project Location.					
7.f.	Place structures within an anticipated 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				x
Discussion: The project site is not located within a flood hazard zone that would be inundated by a 100-year flood according to the Flood Insurance Rate Maps (FIRM) produced by the Federal Emergency Management Agency (FEMA). The project site is located in Flood Zone X, an area of minimal flood hazard. **Source:** FEMA Community Panel 06081C0140E, effective October 16, 2012.					
7.g.	Place within an anticipated 100-year flood hazard area structures that would impede or redirect flood flows?				x
Discussion: See staff's discussion in Section 7.f. **Source:** FEMA Community Panel 06081C0140E, effective October 16, 2012.					

8.	**HAZARDS AND HAZARDOUS MATERIALS.** Would the project:				
		Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
8.a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (e.g., pesticides, herbicides, other toxic substances, or radioactive material)?			x	

Discussion: The project is designed to minimize public and environmental risks from potentially hazardous materials. The project would involve the excavation, transport, and disposal of approximately 300 cubic yards of soil contaminated with metals (including lead bullets), organo-chloride pesticides, and polyaromatic hydrocarbons (PAHs) from the site's former use as a private gun range. Contaminated soils would be disposed of off-site at a Class II landfill or an approved hazardous waste disposal site. Of the various contaminants found, lead and benzo(a)pyrene were identified at being above the Environmental Screening Levels (ESLs) established by the Regional Water Quality Control Board (RWQCB) for residential land use. The project is intended to remove the contaminated soils to achieve compliance with the ESLs associated with residential land use, although no residential development is proposed or intended to be developed in the future. The project contractor would be required to prepare and implement a health and safety plan to ensure that workers' exposure to hazardous material would not result in harmful health effects. These practices would also reduce the potential for an accidental release of contaminated soil throughout project implementation.

Source: Project Application/Plans; RWQCB Environmental Screening Levels, February 2016.

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

Discussion: Based on the proposed construction process, the project is not expected to have a high potential for any foreseeable upset or accident where hazardous materials would be released into the environment. Excavated soil would be transferred to a separate on-site staging area where stockpiles would be contained on, and covered by, plastic sheeting. Bullets would be separated from the soil and confirmation sampling would be conducted to confirm remedial goals, prior to being transported to approved off-site disposal facilities.

Source: Project Application/Plans.

8.c.	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			x	

Discussion: The project site is more than one mile from any existing schools. The County is not aware of any proposed schools in the area. While the transport of contaminated soil to off-site

disposal facilities may involve haul routes that past by schools, the period of proximity would be very minimal and limited to haul trucks driving pass a school in-route to a disposal facility. Furthermore, haul trucks would be required to be covered during the transport of soil, per Mitigation Measure 1. **Source:** Project Plans.					
8.d.	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			x	
Discussion: The project site is listed on the State Water Quality Control Board's (SWQCB) Hazardous Waste and Substance (Cortese) List as a cleanup program site; however, the project is designed to minimize public and environmental risks from potentially hazardous materials by remediating soil contamination (i.e., metals, pesticides, and PAHs) in areas of a former private gun club to cleanup levels applicable for residential land use, per the RWQCBs established Environmental Screening Levels, although residential land use is neither the current or intended future land use for the property. Thus, the project would improve site conditions with respect to soil contamination. See staff's discussion in Section 8.a. **Source:** Project Application/Plans; State Water Resources Control Board, Geotracker, Former Half Moon Bay Gun Club.					
8.e.	For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard for people residing or working in the project area?				x
Discussion: The project site is not located within an area regulated by an airport land use plan and is not located within two miles of a public airport or public use airport. **Source:** Half Moon Bay Airport Land Use Compatibility Plan; Project Location.					
8.f.	For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area?				x
Discussion: The project site is not located in the vicinity of any known private airstrip. **Source:** Project Location; Google Earth, 2018.					
8.g.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			x	
Discussion: The project is located in the upper rural unpopulated hills of El Granada and would not impair or interfere with any emergency response or evacuation plans. Additionally, Mitigation Measures 15 and 17 would limit off-hauling to non-commute hours during the week and require					

proper notification to the public in advance of any off-hauling activity. **Source:** Project Plans; Project Location.					
8.h.	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				x
Discussion: Although the project site is located in a very high fire hazard severity zone, as mapped by the California Department of Forestry and Fire Protection, the project would not involve any significant structural development and requires a short construction duration. Therefore, the project would not introduce people or structures to a significant risk of loss, injury or death involving wildland fires. **Source:** California Department of Fire and Forestry, Fire Hazard Severity Zone Maps; Project Plans.					
8.i.	Place housing within an existing 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				x
Discussion: The project does not involve structural development, such as housing, and is not located within a 100-year flood hazard area according to any known flood hazard maps. **Source:** Project Plans; FEMA Community Panel 06081C0140E, effective October 16, 2012.					
8.j.	Place within an existing 100-year flood hazard area structures that would impede or redirect flood flows?				x
Discussion: See staff's discussion in Section 7.f. **Source:** FEMA Community Panel 06081C0140E, effective October 16, 2012.					
8.k.	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				x
Discussion: See staff's discussion in Section 7.f. Furthermore, the project site is not located within an area that would be impacted by the failure of a levee or dam, as the project site is located in the upper hills of El Granada, at a higher elevation than any levee or dam in San Mateo County. **Source:** FEMA Community Panel 06081C0140E, effective October 16, 2012; Project Location.					
8.l.	Inundation by seiche, tsunami, or mudflow?				x
Discussion: The project site would not be inundated by a seiche, tsunami, or mudflow, as it is located over 3 miles inland from the Pacific Ocean, in the upper hills of El Granada. The project site					

is elevated approximately 1,450 ft. above sea level. **Source:** Project Location.

9. HYDROLOGY AND WATER QUALITY. Would the project:				
	Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
9.a. Violate any water quality standards or waste discharge requirements (consider water quality parameters such as temperature, dissolved oxygen, turbidity and other typical stormwater pollutants (e.g., heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash))?				x
Discussion: Implementation of the project would improve water quality, as the project proposes to remove contaminated soil in areas where testing has identified metals, pesticides, and PAHs from previous use of the area as a private gun range. Soil would be excavated to a depth of approximately 1-foot in five areas around the clubhouse building to remove lead bullets and contaminated soil. The excavated areas would be smooth-graded to restore the pre-excavated drainage patterns to the degree possible and to limit depressions. No import fill is proposed for soil excavation areas. Overall, removal of the identified soil contamination would improve water quality in the watershed. **Source:** Project Plans.				
9.b. Significantly deplete groundwater supplies or interfere significantly with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				x
Discussion: The project would not result in adverse impacts to groundwater supplies. Excavation work associated with the project is limited to approximately 1-foot in depth in any area and, therefore, not expected to encounter groundwater. **Source:** Project Plans.				

9.c. Significantly alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in significant erosion or siltation on- or off-site?			x	
Discussion: The project would result in minor alteration to existing drainage patterns of the area, as the project is limited to excavations of approximately 1-foot in depth over relatively flat areas of the site, with the exception of a vertical granite berm where excavation is necessary to remove lead bullets embedded in the berm to a depth of approximately eight inches. The excavated berm would be cut to a stable slope. All excavated areas would be covered with erosion control blankets and revegetated with local, native vegetation to improve habitat value on-site. Additionally, drainage improvements are proposed along the access road running through the project site area, to include replacement of a ditch relief culvert, adding three rolling dips and a gravel subdrain, installing two waterbars, and adding rock to approximately eighty (80) linear feet of the access roadway, to help reduce road-related ponding and erosion. **Source:** Project Plans.				
9.d. Significantly alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or significantly increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?			x	
Discussion: See staff's discussion in Section 9.c. **Source:** Project Plans.				
9.e. Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide significant additional sources of polluted runoff?				x
Discussion: The project does not involve the addition of impervious surface or structures that would increase runoff from natural pre-existing conditions. Furthermore, the project would be expected to improve water quality by eliminating soil contaminated with metals, including lead bullets, pesticides, and PAHs. **Source:** Project Plans.				
9.f. Significantly degrade surface or ground-water water quality?				x
Discussion: Implementation of the project would improve water quality in the watershed, as the project proposes to remove contaminated soil in areas where testing has identified metals, pesticides, and PAHs from previous use of the area as a private gun range. **Source:** Project Plans.				

9.g. Result in increased impervious surfaces and associated increased runoff?				x

Discussion: The project does not introduce any impervious surfaces to the area that would result in increased increased runoff.

Source: Project Plans

10. LAND USE AND PLANNING. Would the project:				
	Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
10.a. Physically divide an established community?				x

Discussion: The project is being implemented on a portion of a 357-acre parcel located in the upper rural hills of El Granada, and does not include a subdivision, change of land use, or new access roads that would result in the physical division of an established community.

Source: Project Location; Project Plans.

10.b. Conflict with any applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				x

Discussion: Chapter 16 (Man-Made Hazards) of the County General Plan and Chapter 36A.2 (Development Review Criteria) of the County Zoning Regulations include policies that seek to protect life, property, and the environment from hazardous material exposure, including pesticides and metals. The project would remove potential hazardous soil that contains lead bullets and other contaminants (metals, pesticides, and PAHs) resulting from the area's previous use as a private gun range.

Source: County General Plan, Chapter 16, Hazardous Materials Policies; County Zoning Regulations, Chapter 36A.2, Environmental Quality Criteria.

10.c. Conflict with any applicable habitat conservation plan or natural community conservation plan?				x

Discussion: See staff's discussion in Section 4.f.

Source: California Department of Fish and Wildlife, Habitat Conservation Planning, California Regional Conservation Plans Map (October 2017).

10.d. Result in the congregating of more than 50 people on a regular basis?				x
Discussion: The project is limited to remediating contaminated soil in open space areas of a former private gun range. No development or further land improvements or changes in use are proposed that would result in the congregation of people. **Source:** Project Plans.				
10.e. Result in the introduction of activities not currently found within the community?				x
Discussion: The project would not result in the introduction of activities not currently found within the area, as the project is limited to remediating contaminated soil in open space areas of a former private gun range and providing drainage improvements along a portion of an existing access road. No development or further land improvements or changes in use are proposed. **Source:** Project Plans.				
10.f. Serve to encourage off-site development of presently undeveloped areas or increase development intensity of already developed areas (examples include the introduction of new or expanded public utilities, new industry, commercial facilities or recreation activities)?				x
Discussion: The project is limited to remediating contaminated soil in open space areas of a former private gun range and providing drainage improvements along a portion of an existing access road. No development or further land improvements are proposed that would encourage off-site development of undeveloped areas or increase development intensities of already developed areas. **Source:** Project Plans.				
10.g. Create a significant new demand for housing?				x
Discussion: The project does not introduce any new land use to the area that would create a demand for housing. **Source:** Project Plans.				

11.	**MINERAL RESOURCES.** Would the project:				
		Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
11.a.	Result in the loss of availability of a known mineral resource that would be of value to the region or the residents of the State?				x
Discussion: There are no known mineral resources on the project site according to review of the San Mateo County General Plan Mineral Resources Map. **Source:** County General Plan, Mineral Resources Map.					
11.b.	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				x
Discussion: See staff's discussion in Section 11.a. **Source:** County General Plan, Mineral Resources Map.					

12.	**NOISE.** Would the project result in:				
		Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
12.a.	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				x
Discussion: The project does not involve any development or change in use that would result in the permanent exposure of persons to, or generation of, noise levels in excess of any established standards. The project would generate temporary noise associated with the proposed grading work; however, such temporary construction or grading noises are regulated by Section 4.88.360 (Exemptions) of the County Ordinance Code for Noise Control which restricts work between the hours of 6:00 p.m. to 7:00 a.m. on weekdays, 5:00 p.m. to 9:00 a.m. on Saturdays or anytime on Sundays, Thanksgiving and Christmas. **Source:** Project Plans; County Ordinance Code, Noise Controls.				
12.b.	Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?			x	

Discussion: The project would not expose persons to or generate excessive ground-borne vibration or ground-borne noise levels that would result in an adverse impact to people. The project would only generate a temporary increase in noise and vibration from excavation and hauling activities associated with the project; however, any such increases would be for a short period of time and would be generated in a rural, unpopulated area where impacts would be minimal and limited.

Source: Project Plans; Project Location.

12.c. A significant permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				x

Discussion: The project would not generate a significant permanent increase in ambient noise levels in the project vicinity, as the proposed scope of work is limited to the temporary excavation and off-site disposal of contaminated soil. No new development or change in use is otherwise proposed on this open space property.

Source: Project Plans.

12.d. A significant temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			x	

Discussion: The project would generate temporary increases in ambient noise levels in the project area from the proposed work. The overall project is expected to last approximately three weeks with excavation work to be two to three days and then one to two weeks for the stockpiled material to be tested and appropriate off-site disposal facilities identified before the excavated soils can be hauled off-site. Given the rural unpopulated project vicinity, any temporary increase in noise levels is not expected to generate a significant impact to the area. A total of 22 truck trips are anticipated to remove the 300 cubic yards of excavated soil off-site. While the transport of contaminated soil to off-site disposal facilities would involve haul routes that pass through the community of El Granada, the period in which truck vehicles would generate an increase in noise levels in the predominantly residential community would be minimal and limited to haul trucks in-route to a disposal facility.

Source: Project Plans.

12.e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, exposure to people residing or working in the project area to excessive noise levels?				x

Discussion: The project site is not located within an area regulated by an airport land use plan and is not located within two miles of a public airport or public use airport.

Source: Half Moon Bay Airport Land Use Compatibility Plan; Project Location.

12.f. For a project within the vicinity of a private airstrip, exposure to people residing or working in the project area to excessive noise levels?				X
Discussion: The project site is not located in the vicinity of any known private airstrip. **Source:** Project Location; Google Earth, 2018.				

13. POPULATION AND HOUSING. Would the project:				
	Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
13.a. Induce significant population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
Discussion: The project does not involve any new development or change in rural open space land use that would induce population growth in the area. **Source:** Project Plans.				
13.b. Displace existing housing **(including low- or moderate-income housing)**, in an area that is substantially deficient in housing, necessitating the construction of replacement housing elsewhere?				X
Discussion: The project does not involve any new development or change in rural open space land use that would cause a displacement of existing housing. **Source:** Project Plans.				

14. PUBLIC SERVICES. Would the project result in significant adverse physical impacts associated with the provision of new or physically altered government facilities, the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
14.a. Fire protection?				X

14.b. Police protection?				x
14.c. Schools?				x
14.d. Parks?				x
14.e. Other public facilities or utilities (e.g., hospitals, or electrical/natural gas supply systems)?				x

Discussion: The project does not involve any new development or change in land use that would result in an adverse impact to any public services, public facilities, or public utilities.

Source: Project Plans.

15. RECREATION. Would the project:

	Potentially Significant Impacts	*Significant Unless Mitigated*	*Less Than Significant Impact*	*No Impact*
15.a. Increase the use of existing neighborhood or regional parks or other recreational facilities such that significant physical deterioration of the facility would occur or be accelerated?			x	

Discussion: The parcel is currently managed as open space by POST. The project would increase the recreational value of the property by eliminating recreational users' potential exposure to lead and other contaminants; however, it is not expected that the project would generate a significant increase in recreational use of the property to a level that would result in a significant physical deterioration of the area.

Source: Project Plans.

15.b. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				x

Discussion: While the project would increase the recreational value of the property by eliminating lead and other soil contaminants, it does not involve the construction or expansion of any facilities in the area that could have an adverse effect on the environment. Furthermore, the project does not propose any new development or change in use.

Source: Project Plans.

16. TRANSPORTATION/TRAFFIC. Would the project:				
	Potentially Significant Impacts	*Significant Unless Mitigated*	*Less Than Significant Impact*	*No Impact*
16.a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?		x		

Discussion: The project would not conflict with any transportation plans, as the project would only result in a temporary increase in traffic levels to the area from construction workers and haul trucks. There would be no permanent increase in traffic levels expected, as the project does not involve any new development or change in use. The following mitigation measures are proposed to ensure the off-site hauling of excavated soil does not significantly impact any roadways.

Mitigation Measure 15: Off-site hauling of excavated soil shall be limited to the hours of 9:00 a.m. to 3:00 p.m. on weekdays. Trucks or vehicles associated with the project shall not be parked on residential streets.

Mitigation Measure 16: The applicant shall obtain an encroachment permit for hauling of heavy loads on a public roadway. The applicant will be directed to submit traffic control plans which will notify the public of potential delays, and will have restricted hours for hauling operations. Any damage caused by the hauling operations or contractors equipment shall be repaired as directed by the County inspector.

Mitigation Measure 17: The applicant shall notify the public of hauling activities 10 days in advance of such work.

Source: Project Application/Plans.

16.b. Conflict with an applicable congestion management program, including, but not limited to, level of service standards and travel demand measures, or other standards established by the County congestion management agency for designated roads or highways?			x	

Discussion: The project does not involve any development or change in use that would impact any congestion management program. Nonetheless, Mitigation Measures 15 through 17 would ensure that temporary increases in traffic levels from off-site hauling associated with the project would be limited to a less than significant impact to the area.

Source: Project Application/Plans.

16.c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in significant safety risks?				x
Discussion: The project does not involve any development or change in use that would impact any air traffic patterns. **Source:** Project Application/Plans.				
16.d. Significantly increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				x
Discussion: The project does not involve any development or change in use that would result in hazards to a design feature or incompatible use. **Source:** Project Application/Plans.				
16.e. Result in inadequate emergency access?			x	
Discussion: The project does not involve any development or change in use that would impact emergency access. Mitigation Measures 15 through 17 would ensure that traffic-related impacts that could affect emergency access from off-hauling activity is limited to a less than significant impact. **Source:** Project Application/Plans.				
16.f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				x
Discussion: The project would not generate a conflict with any adopted policies or plans related to public transit or non-vehicle modes of transportation. **Source:** Project Application/Plans.				
16.g. Cause noticeable increase in pedestrian traffic or a change in pedestrian patterns?				x
Discussion: The project does not involve any development or change in use that would generate a permanent increase or change in pedestrian traffic or patterns. **Source:** Project Application/Plans.				
16.h. Result in inadequate parking capacity?				x
Discussion: The project does not involve any development or change in use that could impact any parking capacities in the project area.				

Source: Project Application/Plans.

17. TRIBAL CULTURAL RESOURCES. Would the project:				
	Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
17.a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)				x
Discussion: The project site is not listed or eligible for listing in the California Register of Historical Resources. Furthermore, the project is not listed in a local register of historical resources, pursuant to any local ordinance or resolution as defined in Public Resources Code Section 5020.1(k). **Source:** Project Location; State Parks, Office of Historic Preservation, Listed California Historical Resources; County General Plan, Background, Historical and Archaeological Resources Appendices				
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Subdivision (c) of Public Resources Code Section 5024.1. (In applying the criteria set forth in Subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.)		x		
Discussion: The project will result in no change to the use of the project area as open space. Proposed grading and drainage improvement work will be confined to the immediate project area and includes shallow excavations to remove contaiminated soils and at-grade drainage improvements along an existing access road. A Sacred Lands file search of the project vicinity,				

conducted by the Native American Heritage Council (NAHC), resulted in no found records. Therefore, the project is not expected to cause a substantial adverse change to any potential tribal cultural resources.

The project is not subject to Assembly Bill 52 for California Native American tribal consultation requirements, as no traditionally or culturally affiliated tribe has requested, in writing, to the County to be informed of proposed projects in the geographic project area. However, in following the NAHC's recommended best practices, the County has sent tribal consultation request to five (5) tribes within San Mateo County that the NAHC identifies has traditional or cultural affiliation within the boundaries of the County of San Mateo. No responses were received from the tribes. Furthermore, the following mitigation measures are recommended to minimize any potential significant impacts to unknown tribal cultural resources:

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

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

Source: Project Plans; Native American Heritage Commission, Tribal Consultation List Response Letter, dated June 12, 2018; Assembly Bill 52.

18. UTILITIES AND SERVICE SYSTEMS. Would the project:				
	Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
18.a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				x
Discussion: The project does not involve any development or change in use that would generate an impact or exceed wastewater treatment requirements. **Source:** Project Application/Plans.				
18.b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				x
Discussion: The project does not involve any development or change in use that would require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. **Source:** Project Application/Plans.				

18.c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				x
Discussion: The project includes installing drainage improvements along a portion of the existing access road in the immediate project area to reduce the potential for ponding and erosion in the project area. The proposed drainage improvements will be limited to existing disturbed areas and not cause a significant environmental effect on the area. **Source:** Project Application/Plans.				
18.d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				x
Discussion: The project does not involve any development or change in rural open land use that would generate a demand for water supply. Any grading and remediation work associated with the project will use trucked-in water supply. **Source:** Project Application/Plans.				
18.e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				x
Discussion: The project does not involve any development or change in rural open land use that would generate a demand for wastewater treatment. **Source:** Project Application/Plans.				
18.f. Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?				x
Discussion: On-site confirmation samplings of the excavated soil would be completed in order to determine the appropriate off-site disposal facilities (e.g., Class II Facility, California Hazardous Waste Facility, or Resource Conservation and Recovery Act Facility). **Source:** Project Application/Plans.				
18.g. Comply with Federal, State, and local statutes and regulations related to solid waste?				x
Discussion: The project has been reviewed and approved by the San Mateo County Environmental Health Division's Groundwater Protection Program as a Voluntary Cleanup Site. A Remedial Action Agreement has been executed between the County and POST which identifies County Environmental Health assuming the role as the regulatory oversight agency for				

characterization and potential remediation of the waste, including adherence to the County's Groundwater Protection Program Guidelines. **Source:** County Environmental Health Division, Remedial Action Agreement, dated August 4, 2015.				
18.h. Be sited, oriented, and/or designed to minimize energy consumption, including transportation energy; incorporate water conservation and solid waste reduction measures; and incorporate solar or other alternative energy sources?				x
Discussion: The project does not involve any development or change in land use that would consume energy, water, or generate waste on a long-term permanent basis. The project would be implemented over a short period of time and includes the minimal excavation necessary to meet the project goals. No tree removal is proposed. **Source:** Project Application/Plans.				
18.i. Generate any demands that will cause a public facility or utility to reach or exceed its capacity?				x
Discussion: The project does not involve any development or change in land use that would consume energy, water, or generate waste on a long-term permanent basis. The project would be implemented over a short period of time and includes the minimal excavation necessary to meet the project goals. No tree removal is proposed. **Source:** Project Application/Plans.				

19. MANDATORY FINDINGS OF SIGNIFICANCE.				
	Potentially Significant Impacts	***Significant Unless Mitigated***	***Less Than Significant Impact***	***No Impact***
19.a. Does the project have the potential to degrade the quality of the environment, significantly reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		x		
Discussion: As discussed throughout this document, particularly Section 3 (Air Quality), Section 4 (Biological Resources), Section 6 (Geology and Soils), and Section 16 (Transportation/Traffic), the project has the potential to significantly degrade the quality of the environment and/or significantly impact the habitat of a fish or wildlife species. However, such potential impacts, as discussed				

throughout this document, can be reduced to a less than significant level with the implementation of all recommended mitigation measures. **Source:** Subject Document.				
19.b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)			x	
Discussion: The project is intended to remediate past environmental impacts generated by the project site's former use as a private gun club. Proposed project impacts would be reduced to less than significant with the recommended mitigation measures identified throughout this document. No other projects are proposed at this time on the project parcel or in the near vicinity of the project site. **Source:** Subject Document.				
19.c. Does the project have environmental effects which will cause significant adverse effects on human beings, either directly or indirectly?		x		
Discussion: The project could result in environmental impacts that could both directly and indirectly cause impacts on human beings, including the temporary generation of construction-related emissions that exceed air quality standards, increased soil erosion, and temporary increases in traffic levels during off-hauling activity. However, the implementation of the recommended mitigation measures included in this document, and mitigation measures proposed in the project plans, would adequately reduce any potential impacts to a less than significant level. **Source:** Subject Document.				

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

AGENCY	YES	NO	TYPE OF APPROVAL
U.S. Army Corps of Engineers (CE)	X		Section 404 Nationwide Permit
State Water Resources Control Board		X	
Regional Water Quality Control Board	X		Section 401 Certification
State Department of Public Health		X	
San Francisco Bay Conservation and Development Commission (BCDC)		X	
U.S. Environmental Protection Agency (EPA)		X	

AGENCY	YES	NO	TYPE OF APPROVAL
County Airport Land Use Commission (ALUC)		X	
Caltrans		X	
Bay Area Air Quality Management District		X	
U.S. Fish and Wildlife Service		X	
Coastal Commission		X	
City		X	
Sewer/Water District:		X	
Other:		X	

MITIGATION MEASURES

	Yes	No
Mitigation measures have been proposed in project application.	x	
Other mitigation measures are needed.	x	

The following measures are included in the project plans or proposals pursuant to Section 15070(b)(1) of the State CEQA Guidelines:

Mitigation Measure 1: The applicant shall submit a plan to the Planning and Building Department prior to the issuance of any grading "hard card" that, at a minimum, includes the "Basic Construction Mitigation Measures" as listed in Table 8-2 of the BAAQMD CEQA Guidelines (May 2017). These measures shall be implemented prior to beginning any ground disturbance and shall be maintained for the duration of the project activities:

a. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access road) shall be watered two times per day.

b. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

c. All visible mud or dirt track-out onto adjacent paved roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

d. All vehicle speeds on unpaved roads shall be limited to 15 mph.

e. Idling times shall be minimized either by shutting equipment or vehicles off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

f. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

g. Post a publicly visible sign with the telephone number and person to contact at the County regarding dust complaints. This person shall respond and take corrective action within 48

hours. The Bay Area Air Quality Management District's phone number shall also be visible to ensure compliance with applicable regulations.

Mitigation Measure 2: To reduce the potential for impacts to sensitive communities and special-status species, the following general best management practices (BMPs) are recommended for implementation:

Appropriate perimeter erosion and sediment control measures (i.e. silt fencing, straw waddles) shall be installed around any stockpiles of soil or other materials which could be transported by rainfall or other flows in order to reduce the possibility of soil erosion and sediments flowing into natural habitats.

a. All access, staging, and work areas shall be delineated with orange construction fencing, or similar, and all work activities shall be limited to these areas.

b. All access, staging, and work areas shall be the minimum size necessary to conduct the work.

c. All staging, maintenance, and storage of construction equipment shall be performed in a manner to preclude any direct or indirect discharge of fuel, oil, or other petroleum products into the Study Area. No other debris, rubbish, soil, silt, sand, or other construction-related materials or wastes shall be allowed to enter into or be placed where they may be washed by rainfall or runoff into wetland areas. All such debris and waste shall be picked-up daily and shall be properly disposed of at an appropriate facility. If a spill of fluid materials occurs, the area shall be cleaned and contaminated materials disposed of properly. The affected spill area shall be restored to its natural condition.

d. Disturbance or removal of vegetation shall not exceed the minimum necessary to conduct the work.

e. Given that the Project proposes to allow excavated areas to revegetate naturally, certified weed-free erosion control natural fiber blankets shall be used to stabilize disturbed soils.

f. Stockpiles of soil or other materials that can be blown by wind shall be covered when not in active use.

g. All trucks hauling soil, sand, and other loose materials shall be covered.

Mitigation Measure 3: The following measures shall be implemented to minimize impacts to San Mateo tree lupine:

a. A temporary protective barrier or sheeting shall be placed on the ground in the location of the stockpiling area to minimize disturbance of the existing substrates and seedbank during temporary stockpiling efforts to avoid contamination from the stockpiled materials.

b. The extent of the stockpiling area and construction access routes in areas with known populations of San Mateo tree lupine should be delineated with orange construction flagging to avoid incidental, direct impacts from construction equipment access and stockpiling.

c. The size, limit, and duration of the stockpiling area shall be minimized to the extent possible to reduce temporary disturbance to San Mateo tree lupine individuals.

d. Post-construction monitoring of any project-related impacted habitat shall ensure that San Mateo tree lupine recolonizes into areas where it currently occurs. Monitoring shall occur for up to three years following the completion of project work or until the area demonstrates a trajectory of San Mateo tree lupine re-establishment of similar density to pre-construction conditions.

e. The applicant shall make an effort to relocate the one shrubby lupine (presumed to be Lupinus arboreus var. eximius) identified by Kramer Botanical (Kramer Botanical Assessment, May 15, 2015), located near the eastern edge of "Decision Unit-10," should there be a

foreseen impact to the individual during project implementation.

Mitigation Measure 4: A pre-construction survey for woodrat houses shall be conducted by a qualified biologist within 30 days prior to the start of work. If woodrat houses are found to be present in the work area, the following additional measures shall be implemented:

a. Any woodrat houses present in the work area, shall be dismantled by and under the supervision of a qualified biologist.

b. If young are encountered during the dismantling process, the material shall be placed back on the house, and the house will remain undisturbed for 14 days. After 14 days has passed, nest dismantling shall begin again. Once fully deconstructed, any materials removed shall be moved to suitable adjacent areas that will not be impacted by project activities and the materials shall be scattered.

Mitigation Measure 5: In compliance with the Migratory Bird Treaty Act, a survey for active bird nests shall be conducted by a qualified biologist no more than 14 days prior to the start of project activities (vegetation removal, grading, or other ground-disturbing activities) during the nesting season (February 1 through August 31). The survey shall be conducted in a sufficient area around the work site to identify the location and status of any nests that could potentially be directly or indirectly affected by project activities. If active nests or protected species are found within the project area or close enough to these areas to affect nesting success, the following shall be implemented:

a. A work exclusion zone shall be established around each nest by a qualified biologist that will remain in place until all young in the nest have fledged or the nest otherwise becomes inactive. As exclusion zones vary in size depending on the species, the size will be determined by a qualified biologist.

Mitigation Measure 6: In order to mitigate impacts to the CRLF, consultation with the USFWS shall be initiated in order to obtain coverage for harassment during remediation and road improvement work. The qualification of designated biologists shall be submitted to the USFWS for review and written approval at least 30 calendar days prior to the start of work. The following measures from the Programmatic Biological Opinion for CRLF shall be implemented, unless superceded by mitigation measures as a result of consultation, and then the superceding measures shall be implemented:

a. Within 24 hours prior to initial ground disturbance, a preconstruction survey for CRLF shall be conducted. If any life stage of the species is found, the approved biologist will capture and move any individuals to an appropriate relocation site.

b. The approved biologist shall conduct an education training for employees working on the project. Personnel will be required to attend the training that would cover topics such as identification and legal protection of the species, as well as project specific avoidance and minimization measures.

c. The approved biologist shall be onsite during all activities that may result in take of CRLF including vegetation removal, initial ground disturbance, and spoils hauling.

d. The number of access routes, construction areas, equipment staging, storage, parking, and stockpile areas will be minimized to the extent possible.

e. To minimize temporary habitat disturbances, project-related vehicle traffic shall be restricted to established roads, and construction areas. Project-related vehicles shall observe a 20-mile per hour speed limit within construction areas.

f. All construction equipment shall be maintained to prevent leaks of fuels, lubricants, or other toxic fluids.

g. In order to avoid attracting predators of the CRLF, all trash shall be deposited in covered or closed trash containers that are removed from the project site regularly.

h. Any restoration and re-vegetation work for temporary effects shall be implemented using native California plant species.

i. Plastic monofilament netting (erosion control matting, or wrapping around wattles) or similar materials shall not be used on the project in order to avoid entangling, strangling, or trapping CRLF.

j. Construction shall be limited to the dry season (April 30 to October 1) to avoid impacting CRLF when they are most likely to use the study area as a migration corridor.

k. No construction activities shall occur during rain events or within 24-hours following a rain event.

l. Construction activities shall cease no less than 30 minutes before sunset and shall not begin again prior to no less than 30 minutes after sunrise.

Mitigation Measure 7: Any discharges of dredged or fill material into jurisdictional waters of the United States shall be in conformance with a permit issued by the U.S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act and Water Quality Certification by the Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the Clean Water Act, prior to any grading or construction activities that may impact jurisdictional areas. Additionally, U.S. Fish and Wildlife Services Compliance with the federal and state "no net loss of wetlands" policy is required for the proposed project. The avoidance, minimization, and mitigation measures required by such permits shall be implemented.

Impacts to wetlands shall require the creation or restoration of wetlands at a minimum of a 1:1 ratio for the impacted area, creation and/or restoration of wetlands that would provide equivalent biological function, purchase of wetland credits at a mitigation bank, or some combination of these actions. Furthermore, during the application process, the Project proponent shall coordinate with the Corps and RWQCB to confirm that all proposed mitigation ratios and planned restoration activities are adequate to achieve a no net loss of wetland functions and services determination. Monitoring shall be required for impacted wetlands to ensure no weed infestations occur as a result of the project activities.

Mitigation Measure 8: In the event that archaeological resources are inadvertently discovered, work in the immediate vicinity (within 25 feet) of the find must stop until a qualified archaeologist can evaluate the significance of the find. Construction activities may continue in other areas beyond the 25-foot stop work area. A qualified archaeologist is defined as someone who meets the Secretary of the Interior's Professional Qualifications Standards in archaeology. The Current Planning Section shall be notified of such findings, and no additional work shall be done in the stop work area until the archaeologist has recommended appropriate measures, and those measures have been approved by the Current Planning Section and implemented.

Mitigation Measure 9: In the event that paleontological resources are inadvertently discovered, work in the immediate vicinity (within 25 feet) of the find must stop until a qualified paleontologist can evaluate the significant of the find. The Current Planning Section shall be notified of such findings, and no additional work shall be done in the stop work area until the paleontologist has recommended appropriate measures, and those measures have been approved by the Current Planning Section and implemented.

Mitigation Measure 10: Should any human remains be discovered during construction, all ground disturbing work shall cease and the County Coroner be immediately notified, pursuant to Section 7050.5 of the State of California Health and Safety Code. Work must stop until the County Coroner can make a determination of origin and disposition of the remains pursuant to California Public

Resources Code Section 5097.98. If the County Coroner determines the remains to be Native American, the Native American Heritage Commission shall be contacted within 24 hours. A qualified archaeologist, in consultation with the Native American Heritage Commission, shall recommend subsequent measures for disposition of the remains.

Mitigation Measure 11: The applicant shall adhere to the San Mateo County Stormwater Pollution Prevention Program "General Construction and Site Supervision Guidelines," including, but not limited to, the following:

a. Stabilizing all denuded areas and maintaining erosion control measures continuously between October 1 and April 30.

b. Storing, handling, and disposing of construction materials and wastes properly, so as to prevent their contact with stormwater.

c. Controlling and preventing the discharge of all potential pollutants, including pavement cutting wastes, paints, concrete, petroleum products, chemicals, wash water or sediments, and non-stormwater discharges to storm drains and watercourses.

d. Using sediment controls or filtration to remove sediment when dewatering the site and obtaining all necessary permits.

e. Avoiding cleaning, fueling, or maintaining vehicles on-site, except in a designated area where wash water is contained and treated.

f. Delineating with field markers clearing limits, easements, setbacks, sensitive or critical areas, buffer zones, trees and drainage courses within the vicinity of areas to be disturbed by grading.

g. Protecting adjacent properties and undisturbed areas from construction impacts using vegetative buffer strips, sediment barriers or filters, dikes, mulching, or other measures as appropriate.

h. Performing clearing and earth-moving activities only during dry weather.

i. Limiting and timing application of pesticides and fertilizers to prevent polluted runoff.

j. Limiting construction access routes and stabilizing designated access points.

k. Avoiding tracking dirt or other materials off-site; cleaning off-site paved areas and sidewalks using dry sweeping methods.

l. Training and providing instruction to all employees and subcontractors regarding the Watershed Protection Maintenance Standards and construction Best Management Practices.

m. Additional Best Management Practices in addition to those shown on the plans may be required by the Building Inspector to maintain effective stormwater management during construction activities. Any water leaving the site shall be clear and running slowly at all times.

n. Failure to install or maintain these measures will result in stoppage of construction until the corrections have been made and fees paid for staff enforcement time.

Mitigation Measure 12: No grading shall be allowed during the winter season (October 1 to April 30) to avoid potential soil erosion, unless the applicant applies for an Exception to the Winter Grading Moratorium and the Community Development Director grants the exception. Exceptions will only be granted if dry weather is forecasted during scheduled grading operations, and the erosion control plan includes adequate winterization measures (amongst other determining factors).

An applicant-completed and County-issued grading permit "hard card" is required prior to the start of any land disturbance/grading operations. Along with the "hard card," the applicant shall submit a

letter to the Current Planning Section, at least two (2) weeks prior to commencement of grading, stating the date when grading operations will begin, anticipated end date of grading operations, including dates of revegetation and estimated date of establishment of newly planted vegetation.

Mitigation Measure 13: It shall be the responsibility of the engineer of record to regularly inspect the erosion control measures for the duration of all grading activities, especially after major storm events, and determine that they are functioning as designed and that proper maintenance is being performed. Deficiencies shall be immediately corrected, as determined by and implemented under the observation of the engineer of record.

Mitigation Measure 14: The site is considered a Construction Stormwater Regulated Site (SWRS). Any grading activities conducted during the wet weather season (October 1 to April 30) will require monthly erosion and sediment control inspections by the Building Inspection Section, as well as prior authorization from the Community Development Director to conduct grading during the wet weather season.

Mitigation Measure 15: Off-site hauling of excavated soil shall be limited to the hours of 9:00 a.m. to 3:00 p.m. on weekdays. Trucks or vehicles associated with the project shall not be parked on residential streets.

Mitigation Measure 16: The applicant shall obtain an encroachment permit for hauling of heavy loads on a public roadway. The applicant will be directed to submit traffic control plans which will notify the public of potential delays, and will have restricted hours for hauling operations. Any damage caused by the hauling operations or contractors equipment shall be repaired as directed by the County inspector.

Mitigation Measure 17: The applicant shall notify the public of hauling activities 10 days in advance of such work.

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

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

DETERMINATION (to be completed by the Lead Agency).

On the basis of this initial evaluation:

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

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

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

(Signature)

12/11/18 — Date

Planner III — (Title)

ATTACHMENTS:

A. Vicinity Map

B. Project Plans (2018)

C. Certified Initial Study and Mitigated Negative Declaration (2015)

D. Biological Resouces Evaluation, WRA Environmental Consultants, April 2018 (Available upon request at the County of San Mateo Planning Department)

SSB:MDB: ann – MDBCC0519_WNH.DOCX

County of San Mateo - Planning and Building Department

ATTACHMENT F

April 13, 2018

Summer Burlison, Project Planner
County Government Center
455 County Center, 2nd Floor
Redwood City, CA 94063

Re: CDP County File No. PLN 2015-00245; Half Moon Bay Gun Club Remediation Project in Unincorporated San Mateo County

Dear Ms. Burlison:

This letter requests to update the existing Coastal Development Permit (CDP) County File No. PLN 2015-00245 for the Half Moon Bay Gun Club Remediation Project (Project) in unincorporated San Mateo County. Below is a summary of the updates requested to the existing CDP, which are discussed in detail in the attached Biological Resource Evaluation (BRE) (Attachment 1). Please notify us of the required fee amount for amending our CDP.

Permit Update Requests:

1. The Biological Resource Evaluation has found sensitive biological resources within the project area.

    A. These sensitive resources include:
        - Approximately 0.06 acre of seasonal emergent wetlands
        - Approximately 0.02 acre of arroyo willow thicket wetland
        - Approximately 1,376 individuals of San Mateo tree lupine (*Lupinus arboreus* var. *eximius*, Rank 3.2)
        - San Francisco dusky-footed woodrat (*Neotama fuscipes annectens*, CDFW Species of Special Concern)
        - California red-legged frog (*Rana draytonii*, CRLF, Federal Threatened Species, CDFW Species of Special Concern)
        - CRLF critical habitat (Unit SNM-1)

    B. The temporary impacts to these resources during Project activities include:
        - Temporary impact to approximately 0.03 acre of seasonal emergent wetland
        - Temporary impact to less than 0.01 acre of arroyo willow thicket wetland
        - Temporary impact to approximately one San Mateo tree lupine individual
        - Potential impact to San Francisco Dusky-footed woodrat individuals
        - Potential impact to CRLF if project activities occur in the rainy season
        - Temporary impact to CRLF dispersal habitat

    C. With the avoidance, minimization, and mitigation measures proposed in Section 6.0 of the BRE, impacts to the above sensitive resources are anticipated to be less than significant under the California Environmental Quality Act.

2. The Project plans have been updated with the following updates:

    A. The footprint for the stockpile area has been reduced from 1.35 acres to 0.35 acre.

    B. Drainage improvements will be installed along the existing access road including replacement of an existing culvert and installation of a French drain to reduce the potential for road-related ponding and erosion. Please refer to Attachment 1, Appendix A for detailed project plans and information.

Please feel free to contact me should you have any questions or comments during your review of our request to update our CDP.

Sincerely,

Stephanie Freed
Associate Biologist

Enclosures: Attachment 1: Half Moon Bay Gun Club Remediation Project – Biological Resource Evaluation

Half Moon Bay Gun Club Remediation Project
Biological Resources Evaluation

HALF MOON BAY, SAN MATEO COUNTY, CALIFORNIA

Prepared for:

Peninsula Open Space Trust

222 High Street

Palo Alto, California 94301

WRA Contact:

Geoff Smick

smick@wra-ca.com

Date:

April 2018

WRA Project No. 26162

ENVIRONMENTAL CONSULTANTS

2169-G East Francisco Blvd., San Rafael, CA 94702 (415) 454-8868 tel info@wra-ca.com www.wra-ca.com

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LIST OF ACRONYMS AND ABBREVIATIONS

BRE	Biological Resources Evaluation
CCC	California Coastal Commission
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
CRLF	California red-legged frog
EPA	Environmental Protection Agency
ESHA	Environmentally Sensitive Habitat Area
FAC	Facultative plant species
FACU	Facultative upland plant species
FACW	Facultative wetland plant species
FESA	Federal Endangered Species Act
Inventory	California Native Plant Society Inventory of Rare and Endangered Plants
LCP	San Mateo County Local Coastal Program
NL/UPL	Not listed/upland plant species
NMFS	National Marine Fisheries Service
NWPL	National Wetland Plant List
OBL	Obligate wetland plant species
OHWM	Ordinary High Water Mark
POST	Peninsula Open Space Trust
RPW	Relatively permanent water
RWQCB	Regional Water Quality Control Board
SFGS	San Francisco garter snake
SWRCB	State Water Resources Control Board
TNW	Traditionally navigable waters
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WBWG	Western Bat Working Group
WRA	WRA, Inc.

1.0 INTRODUCTION

On December 20 and 22, 2016, WRA, Inc. (WRA) conducted a biological resource evaluation (BRE) at the site of the proposed Half Moon Bay Gun Club soil remediation project (Project) located in Half Moon Bay, San Mateo County (Figure 1). The Project will include soil remediation and land restoration at the former Half Moon Bay Gun Club through the excavation on land currently owned by Peninsula Open Space Trust (POST). The BRE assessed the proposed soil remediation excavation locations, the proposed stockpile area, an approximately 300-foot buffer around these areas, as well as access roads (Study Area, Figure 2). This report describes the results of the site visit, which assessed the Study Area for the (1) potential to support special-status plant or wildlife species and (2) presence of other sensitive biological resources protected by local, state, or federal laws and regulations. The regulatory framework of this BRE is provided in Section 2.0 of this report. The methods used in the assessment are described in Section 3.0, and the results of the site visit are presented in Section 4.0. A summary of the sensitive biological resources observed or with potential to occur at the site is provided in Section 5.0. Section 5.0 also includes a summary of the permits that may be necessary for the Project. A description of the proposed Project and an evaluation of potential impacts to special-status species and sensitive biological resources that could occur as a result of the proposed Project, including potential avoidance and minimization measures and recommended mitigation measures, are provided in Section 6.0.

A BRE provides general information on the potential presence of sensitive species and habitats. Focused special-status species were completed on April 10 and May 26, 2017. Specific findings on the habitat suitability or presence of special-status species or sensitive habitats may require that protocol-level surveys be conducted for Project approval by local, state, or federal agencies. This assessment is based on information available at the time of the study and on site conditions that were observed on the date of the site visit.

1.1 Project Description

The Project will include soil remediation and land restoration at the former Half Moon Bay Gun Club through the excavation of approximately 300 cubic yards at depths of approximately 1-foot, over approximately 9,300 square feet of relatively flat land on a 357.13-acre parcel currently owned by POST. Former use in the Study Area was as a private gun club/range. Remedial action will include the removal of lead bullets and soil containing metals and polyaromatic hydrocarbons at concentrations above Environmental Screening Levels established by the Regional Water Quality Control Board (RWQCB). The only constructed feature of the Project will be a drainage improvement to an existing road that allows access by land managers beyond the Study Area. A French drain will be installed, made of large cobbles that will allow water to freely flow beneath the road surface to avoid ponding on the road. No fill, including import fill, is proposed and no trees will be removed. Disturbed areas will be stabilized with erosion control blankets and seed-free wattles and will be allowed to naturally revegetate with adjacent native species, as this has proven successful with past disturbances at the site. The only constructed feature of the Project will be the drainage improvement to the existing access road, through replacing a culvert and installation of French drain to allow water to freely flow beneath the road surface without ponding on the road surface. Project plans are included as Appendix A.

Figure 1. Study Area Location Map

Half Moon Bay Gun Club
San Mateo, California

0 0.25 0.5 1
Miles

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Map Prepared Date: 3/8/2018
Map Prepared By: mrochelle
Base Source: Esri Streaming - National Geographic
Data Source(s): WRA

Path: L:\Acad 2000 Files\26000\26162\GIS\ArcMap\Location.mxd

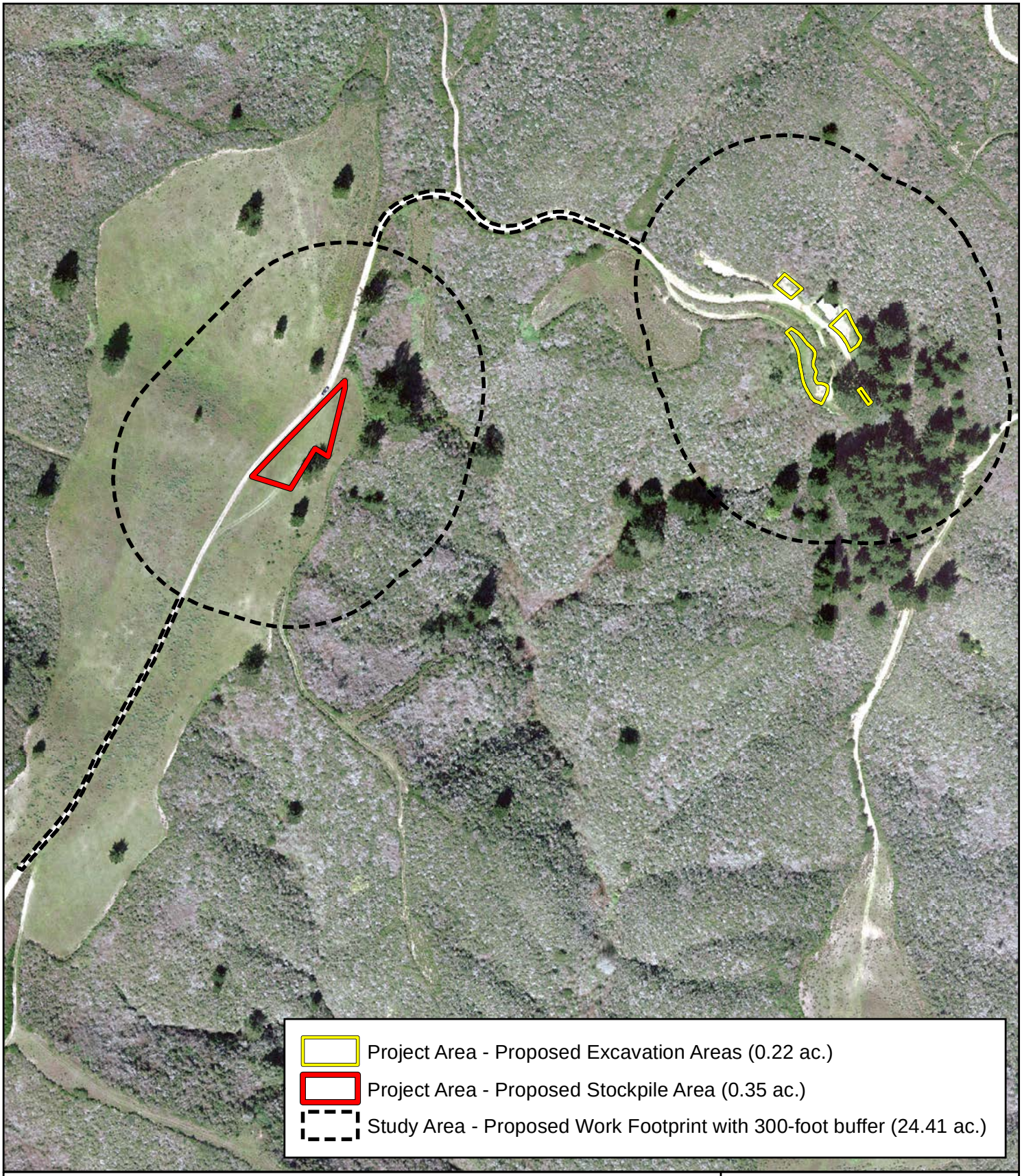

Figure 2. Overview of the Study Area

N
W E
S

0 100 200 400
Feet

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Half Moon Bay Gun Club
San Mateo, California

Map Prepared Date: 3/8/2018
Map Prepared By: mrochelle
Base Source: Feb 2015 Aerial
Data Source(s): WRA

Path: L:\Acad 2000 Files\26000\26162\GIS\ArcMap\Site.mxd

1.2 Description of the Study Area

The Study Area is located on Montara Mountain within a large, mostly undeveloped area comprised of contiguous parcels owned and managed by several different entities including the National Park Service, the County of San Mateo, the San Francisco Public Utilities District, and private landowners. In closer proximity, the Study Area is located in a landscape comprised of steep south- and west-facing slopes dominated by coastal scrub and located approximately 0.25 mile downslope of the Montara Mountain crest. Although much of the Study Area is relatively undisturbed, some areas have undergone extensive anthropogenic disturbance, primarily as excavation and grading related to the development of roads and terraces to build structures on.

The eastern portion of the Study Area, which contains lead-contaminated soils and is located within the vicinity of the Gun Club building, consists of anthropogenic flat areas (roads and a terraces) excavated into the steep hillside. The Study Area is a mix of similar disturbed areas and intact coastal scrub. The western portion of the Study Area, the stockpile area, is located on a relatively flat ridge where, based on historical aerial imagery, the vegetation has been periodically cleared since at least 1948 (Google Earth 2017, NETR 2017). Within the Study Area, the 300-foot buffer surrounding the proposed stockpile area is mostly part of the vegetation-clearing area, but portions are intact coastal scrub. A regularly used dirt road, as well as some historical, overgrown dirt roads, are present in this portion of the Study Area.

2.0 REGULATORY BACKGROUND

The following sections explain the regulatory context of the BRE, including applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts.

2.1 Sensitive Biological Communities

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, and riparian habitat. These habitats are regulated under federal regulations (such as the Clean Water Act), state regulations (such as the Porter-Cologne Act, Section 1600 of the California Fish and Game Code, and local ordinances or policies (such as City or County Tree Ordinances, Special Habitat Management Areas, applicable Local Coastal Programs, and General Plan Elements). Mitigation measures for impacts to these communities are discussed in Section 6 of this report.

Other Sensitive Biological Communities

Other sensitive biological communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, and regulations or by the CDFW. The CDFW ranks sensitive communities as “threatened” or “very threatened” and keeps records of their occurrences in its Natural Diversity Database (CNDDB). Sensitive plant communities are also identified by CDFW (CDFG 2010) and CNPS (CNPS 2017b). Vegetation alliances are ranked 1 through 5 by the California Department of Fish and Wildlife (CDFW) based on NatureServe's (2017) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, regulations or by the CDFW or USFWS must be considered and evaluated under the CEQA (CCR: Title 14,

Div. 6, Chap. 3, Appendix G). Specific habitats may also be identified as sensitive in City or County General Plans or ordinances.

2.2 Federal Jurisdiction over Wetlands and "Other Waters"

Section 404 of the Clean Water Act

Section 404 of the Clean Water Act gives the U.S. Environmental Protection Agency ("EPA") and the U.S. Army Corps of Engineers (Corps) regulatory and permitting authority regarding discharge of dredged or fill material into "navigable waters of the United States". Section 502(7) of the Clean Water Act defines waters as "waters of the United States, including territorial seas." Section 328 of Chapter 33 in the Code of Federal Regulations (CFR) defines the term "waters of the United States" as it applies to the jurisdictional limits of the authority of the Corps under the Clean Water Act. A summary of this definition of "waters of the U.S." in 33 CFR 328.3 includes (1) waters used for commerce; (2) interstate waters and wetlands; (3) "other waters" such as intrastate lakes, rivers, streams, and wetlands; (4) impoundments of waters; (5) tributaries to the above waters; (6) territorial seas; and (7) wetlands adjacent to waters.

In the Corps Rivers and Harbors regulations (33 CFR Part 329.4), the term "navigable waters of the U.S." is defined to include all those waters that are subject to the ebb and flow of the tide, and/or presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

The limits of Corps jurisdiction under Section 404 as given in 33 CFR Section 328.4 are as follows: (a) *Territorial seas:* 3 nautical miles in a seaward direction from the baseline; (b) *Tidal waters of the U.S.:* high tide line; or to the limit of adjacent non-tidal waters; (c) *Non-tidal waters of the U.S.:* ordinary high water mark (OHWM) or to the limit of adjacent wetlands; (d) *Wetlands:* to the limit of the wetland.

The Corps has developed standard methods and data reporting forms contained in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* ("Corps Manual"; Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* ("Arid West Supplement"; Corps 2008a) to determine the presence or absence of wetlands and Waters of the U.S. The procedures described in the Corps Manual were used to identify wetlands and waters in the Study Area that are potentially subject to regulation under Section 404 of the Clean Water Act.

Rapanos Guidance

The Corps and EPA issued joint guidance on implementing the June 19, 2006 U.S. Supreme Court opinions resulting from *Rapanos v. United States* and *Carabell v. United States* ("Rapanos") cases. Under this guidance, the Corps will maintain jurisdiction over traditionally navigable waters ("TNW"), relatively permanent water ("RPW"), and non-relatively permanent waters that have a significant nexus to the biological, chemical, and physical characteristics of a RPW or TNW.

The first standard of the guidance evaluates jurisdiction over a water body that is a RPW (i.e. it flows year-round, or at least "seasonally") and over wetlands adjacent to such water bodies if the wetlands directly "abut" the water body (i.e. if the wetlands are not separated from the water body by an upland feature such as a berm, dike, or road). In order for the Corps to make a jurisdictional

determination of Section 404 wetlands and waters, field staff must determine whether there is a significant hydrologic connection between a non-perennial RPW and a TNW. The second standard, for tributaries that are not RPWs, requires a case-by-case "significant nexus" evaluation to determine the extent of Section 404 jurisdiction.

2.3 State Jurisdiction over Wetlands and "Other Waters"

2.3.1 State Water Resources Control Board and Regional Water Quality Control Board

The Dickey Water Pollution Act of 1949 and Porter Cologne Act of 1969 established the State Water Resources Control Board ("SWRCB") and nine RWQCB districts in the State of California. The SWRCB and each RWQCB district regulates activities in Waters of the State, which include Waters of the U.S. Waters of the State are defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state."

The RWQCB regulates discharges of fill and dredged material under Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act through the State Water Quality Certification Program. State Water Quality Certification is necessary for all projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact waters of the State. In order for a Section 404 permit to be valid, Section 401 of the Clean Water Act requires a Water Quality Certification or waiver to be obtained. The Water Quality Certification (or waiver) determines that the permitted activities will not violate water quality standards individually or cumulatively over the term of the action. Water quality certification must be consistent with the requirements of the Federal Clean Water Act, the CEQA, the California Endangered Species Act, and Porter-Cologne Act.

If a proposed project or portion of a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to Waters of the State, the RWQCB has the option to regulate the dredge and fill activity under its state authority in the form of Waste Discharge Requirements or Certification of Waste Discharge Requirements. In these cases, a Water Quality Certification is not necessary under Section 401 of the Clean Water Act because federal jurisdiction does not apply.

2.3.2 California Department of Fish and Wildlife

<u>Streams, Lakes, and Riparian Habitat</u>

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFW under Sections 1600-1616 of the State Fish and Game Code. Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term stream, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream dependent terrestrial wildlife (CDFG 1994). Riparian is defined as, "on, or pertaining to, the banks of a stream;" therefore, riparian vegetation is defined as, "vegetation which occurs in and/or adjacent

to a stream and is dependent on, and occurs because of, the stream itself" (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

2.3.3 California Coastal Commission and San Mateo County Local Coastal Program

The California Coastal Commission (CCC) regulates the diking, filling, or dredging of wetlands within the Coastal Zone. In addition, within the Coastal Zone of San Mateo County, any development must comply with the San Mateo County Local Coastal Program (LCP) policies (County of San Mateo 2013). Section 30121 of the Coastal Act defines "wetlands" as land "which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens." In addition, the LCP defines a "wetland" as "an area where the water table is at, near, or above the land surface long enough to bring about the formation of hydric soils or to support the growth of plants that normally are found to grow in water or wet ground. The CCC Statewide Interpretive Guidelines (CCC 1981) state that hydric soils and hydrophytic vegetation "are useful indicators of wetland conditions," but the presence or absence of hydric soils and/or hydrophytes alone are not necessarily determinative when the CCC identifies wetlands under the Coastal Act.

The boundaries of areas regulated by the Corps and CCC are often not the same due to the differing goals of the respective regulatory programs and also because these agencies use different definitions for determining the extent of wetland areas. For example, the Corps requires that positive indicators for the presence of wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation be present for an area to meet the Corps' wetland definition. The CCC does not necessarily require that all three wetland indicators (wetland hydrology, hydric soils, and a predominance of hydrophytic vegetation) be present for an area to be determined to be a "wetland"; rather, the presence of hydric soils in the absence of a predominance of hydrophytes (or vice versa) could be sufficient for a positive wetland determination.

<u>Environmentally Sensitive Habitat Areas</u>

The California Coastal Commission defines an environmentally sensitive habitat area (ESHA) as follows:

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

The LCP further defines sensitive habitats as:

> "*any area in which plant or animal life or their habitats are either rare or especially valuable and any area which meets one of the following criteria: (1) habitats containing or supporting "rare and endangered" species as defined by the State Fish and Game Commission, (2) all perennial and intermittent streams and their tributaries, (3) coastal tide lands and marshes, (4) coastal and offshore areas containing breeding or nesting sites and coastal areas used by migratory and resident water-associated birds for resting areas and feeding, (5) areas used for scientific study and research concerning fish and wildlife, (6) lakes and ponds and*

adjacent shore habitat, (7) existing game and wildlife refuges and reserves, and (8) sand dunes.

Sensitive habitat areas include, but are not limited to, riparian corridors, wetlands, marine habitats, sand dunes, sea cliffs, and habitats supporting rare, endangered, and unique species."

The CCC Guidelines (CCC 1981) and LCP contain definitions for specific types of ESHAs, including wetlands, estuaries, streams and rivers, lakes, open coastal waters and coastal waters, riparian habitats, other resource areas, and special-status species and their habitats.

For the purposes of this report, WRA has taken into consideration any areas that may meet the definition of any ESHA defined by the CCC and LCP guidelines.

2.4 Special-Status Species

Special-status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (FESA) or California Endangered Species Act (CESA). These Acts afford protection to both listed and proposed species. In addition, California Department of Fish and Wildlife (CDFW) Species of Special Concern and the National Marine Fisheries Service (NMFS) Species of Concern, which are species that face extirpation if current population and habitat trends continue, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, sensitive species included in USFWS Recovery Plans, and CDFW special-status invertebrates are all considered special-status species. Although CDFW Species of Special Concern generally have no special legal status, they are given special consideration under the California Environmental Quality Act (CEQA). In addition to regulations for special-status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act of 1918. Under this legislation, destroying active nests, eggs, and young is illegal. Bat species designated as "High Priority" by the Western Bat Working Group (WBWG) qualify for legal protection under Section 15380(d) of the CEQA Guidelines. Species designated "High Priority" are defined as "imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats".

Plant species included within the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (Inventory; CNPS 2017a) with California Rare Plant Rank (Rank) of 1, 2, and 3 are also considered special-status plant species and must be considered under the CEQA. Some Rank 4 plant species meet the definitions of Section 1901 Chapter 10 of the Native Plant Protection Act or Sections 2062 and 2067 of the California Fish and Game Code that outlines CESA. However, the CNPS and the CDFW strongly recommend that these species be fully considered during the preparation of environmental documentation related to the CEQA. This may be particularly appropriate for the type locality of a Rank 4 plant species, for populations at the periphery of a species range, or in areas where the taxon is especially uncommon or has sustained heavy losses, or from populations exhibiting unusual morphology or occurring on unusual substrates.

Critical Habitat

Critical habitat is a term defined and used in the FESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The FESA requires federal agencies to consult with the USFWS and/or NMFS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the FESA "jeopardy standard." However, areas that are currently unoccupied by the species but which are needed for the species' recovery, are protected by the prohibition against adverse modification of critical habitat.

Wildlife Corridors

Wildlife movement between suitable habitat areas typically occurs via wildlife movement corridors. The primary function of wildlife corridors is to connect two larger habitat blocks, also referred to as core habitat areas (Beier 1992, Soulé and Terbough. 1999). Prior to the site visit on December 20, 2016 aerial imagery of the Study Arear and surrounding lands were examined for the potential presence of wildlife movement corridors (Google 2017).

3.0 METHODS

On December 20 and 22, 2016, the Study Area was traversed on foot to determine (1) plant communities present within the Study Area, (2) if existing conditions provide suitable habitat for any special-status plant or wildlife species, and (3) if sensitive habitats including ESHAs are present. All plant and wildlife species encountered were recorded and are summarized in Appendix B. Prior to the site visit, aerial imagery (Google Earth 2017), the National Wetlands Inventory (USFWS 2017a), and the Soil Survey of San Mateo Area (USDA 1961) and an online soil survey (CSRL 2017) were reviewed to assess the potential for sensitive biological communities to occur in the Study Area. Plant nomenclature follows the Jepson eFlora (Jepson Flora Project 2017), except where noted. For cases in which regulatory agencies, CNPS, or other entities base rarity on older taxonomic treatments, precedence was given to the treatment used by those entities.

3.1 Biological Communities

Biological communities present in the Study Area were classified based on existing plant community descriptions described in *A Manual of California Vegetation, Online Edition* (CNPS 2016a; CDFW 2016b). However, in some cases, it was necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. Biological communities were classified as sensitive or non-sensitive as defined by the CEQA and other applicable laws and regulations (see Section 2.2, above).

3.1.1 Non-sensitive Biological Communities

Non-sensitive biological communities are those communities that are not afforded special protection under the CEQA or other state, federal, and local laws, regulations and ordinances. These communities may, however, provide suitable habitat for some special-status plant or wildlife species and are identified or described in Section 4.1 below.

3.1.2 Sensitive Biological Communities

Sensitive biological communities are defined as those communities that are given special protection under the CEQA or other applicable federal, state, and local laws, regulations and ordinances. Applicable laws and ordinances are discussed above in Section 2.0. Special methods used to identify sensitive biological communities are discussed below.

The Study Area was also evaluated for the presence of other sensitive biological communities, including riparian areas, and sensitive plant communities recognized by CDFW. If observed, these sensitive biological communities were mapped and are described in Section 4.1.2 below.

3.2 Federal Jurisdiction over Wetlands and "Other Waters"

The methods used in this study to delineate federal jurisdictional wetlands and waters are based on the Corps Manual and Arid West Supplement. Prior to conducting field studies, available reference materials were reviewed, including the following:

- Soil Survey of San Mateo Area (USDA 1961),
- An online soil survey (CSRL 2017),
- The U.S. Geological Survey (USGS) 7.5-minute quadrangle map for Montara Mountain (USGS 2015),
- National Wetland Inventory data (USFWS 2017),
- Rainfall data (NOAA 2016),
- WETS precipitation data (USDA 2016), and
- Aerial images of the site (Google Earth 2017, NETR 2017).

The delineation portion of the BRE was performed on December 22, 2016. The methods for evaluating the presence of wetlands and "other waters" employed during the site visit are described in detail below.

3.2.1 Potential Section 404 Jurisdictional Wetlands

The Corps has defined the term "wetlands" as follows:

> *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. Wetlands generally include swamps, marshes, bogs, and similar areas.*
>
> 33 CFR 328.3

The three parameters listed in the Corps Manual that are used to determine the presence of wetlands are: (1) hydrophytic vegetation, (2) wetland hydrology, and (3) hydric soils. According to the Corps Manual:

> *"...[E]vidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil, and vegetation) must be found in order to make a positive wetland delineation."*

Data on vegetation, hydrology, and soils collected at sample points during the delineation site visits are reported on standard Corps data forms included in Appendix C. Once an area was determined to be a potential jurisdictional wetland, its boundaries were delineated using Global Positioning System equipment with sub-meter accuracy and mapped on a geo-referenced aerial photograph. The total acreage of potential jurisdictional wetlands was measured digitally using ArcGIS software. Indicators described in the Corps Manual that were used to make wetland determinations at each sample point in the Study Area are summarized below. A map of potentially jurisdictional features within the Study Area is included as Appendix D.

Vegetation

Plant species observed in the Study Area were identified using the Jepson eFlora (Jepson Flora Project 2016). Plants were assigned a wetland indicator status according to the National Wetland Plant List (NWPL; Lichvar et al. 2016). The NWPL classification system is based on the expected frequency of occurrence in wetlands as follows:

Classification (Abbreviation)	**Definition***	**Hydrophytic Species? (Y/N)**
Obligate (OBL)	Almost always is a hydrophyte, rarely in uplands	Y
Facultative Wetland (FACW)	Usually is a hydrophyte but occasionally found in uplands	Y
Facultative (FAC)	Commonly occurs as either a hydrophyte or non-hydrophyte	Y
Facultative Upland (FACU)	Occasionally is a hydrophyte but usually occurs in uplands	N
Upland/Not Listed (UPL/NL)	Rarely is a hydrophyte, almost always in uplands	N

*See Lichvar et al. (2016).

The Arid West Supplement requires that a three-step process be conducted to determine if hydrophytic vegetation is present. The procedure first requires the delineator to apply the “50/20 rule” (Indicator 1) described in the manual. To apply the “50/20 rule”, dominant species are chosen independently from each stratum of the community. In general, dominant species are determined for each vegetation stratum from a sampling plot of an appropriate size surrounding the sample point. In general, dominants are the most abundant species that individually or collectively account for more than 50 percent of the total vegetative cover in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total cover. If greater than 50 percent of the dominant species has an OBL, FACW, or FAC status, the sample point meets the hydrophytic vegetation criterion.

If the sample point fails Indicator 1 and both hydric soils and wetland hydrology are not present, then the sample point does not meet the hydrophytic vegetation criterion, unless the site is a problematic wetland situation. However, if the sample point fails Indicator 1 but hydric soils and wetland hydrology are both present, the delineator must apply Indicator 2.

Indicator 2 is known as the Prevalence Index. The Prevalence Index is a weighted average of the wetland indicator status for all plant species within the sampling plot. Each indicator status is given a numeric code (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5). Indicator 2 requires the delineator to estimate the percent cover of each species in every stratum of the community and sum the cover estimates for any species that is present in more than one stratum. The delineator must then organize all species into groups according to their wetland indicator status and calculate the Prevalence Index using the following formula, where A equals total percent cover:

$$PI = \frac{A_{OBL} + 2A_{FACW} + 3A_{FAC} + 4A_{FACU} + 5A_{UPL}}{A_{OBL} + A_{FACW} + A_{FAC} + A_{FACU} + A_{UPL}}$$

The Prevalence Index will yield a number between 1 and 5. If the Prevalence Index is equal to or less than 3, the sample point meets the hydrophytic vegetation criterion. However, if the community fails Indicator 2, the delineator must proceed to Indicator 3.

Indicator 3 is known as Morphological Adaptations. If more than 50 percent of the individuals of a FACU species have morphological adaptations for life in wetlands, that species is considered to be a hydrophyte, and its indicator status should be reassigned to FAC. If such observations are made, the delineator must recalculate Indicators 1 and 2 using a FAC indicator status for this species. The sample point meets the hydrophytic vegetation criterion if either test is satisfied.

Soils

The Natural Resource Conservation Service defines a hydric soil as follows:

> *"A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part."*
>
> Federal Register July 13, 1994,
> U.S. Department of Agriculture, NRCS

Soils formed over long periods of time under wetland (anaerobic) conditions often possess characteristics that indicate they meet the definition of hydric soils. Hydric soils can have a hydrogen sulfide (rotten egg) odor, low chroma matrix color, generally designated 0, 1, or 2, used to identify them as hydric, presence of redox concentrations, gleyed or depleted matrix, or high organic matter content.

Specific indicators that can be used to determine whether a soil is hydric for the purposes of wetland delineation are provided in *Field Indicators of Hydric Soils in the U.S.* (USDA 2010). The Arid West Supplement provides a list of 23 of these hydric soil indicators that are known to occur in the Arid West region. Soil samples were collected and described according to the methodology provided in the Arid West Supplement. Soil chroma and values were determined by utilizing a standard Munsell soil color chart (Munsell Color 2009).

Hydric soils were determined to be present if any of the soil samples met one or more of the 23 hydric soil indicators described in the Arid West Supplement.

Hydrology

The Corps jurisdictional wetland hydrology criterion is satisfied if an area is inundated or saturated for a period sufficient to create anoxic soil conditions during the growing season (a minimum of 14 consecutive days in the Arid West region). Evidence of wetland hydrology can include primary indicators, such as visible inundation or saturation, drift deposits, oxidized root channels, and salt crusts, or secondary indicators such as the FAC-neutral test, presence of a shallow aquitard, or crayfish burrows. The Arid West Supplement contains 16 primary hydrology indicators and 10 secondary hydrology indicators. Only one primary indicator is required to meet the wetland hydrology criterion; however, if secondary indicators are used, at least two secondary indicators must be present to conclude that an area has wetland hydrology.

The presence or absence of the primary or secondary indicators described in the Arid West Supplement was utilized to determine if sample points within the Study Area met the wetland hydrology criterion.

3.2.2 Potential Section 404 Jurisdictional "Other Waters"

The Study Area was also evaluated for the presence of "other waters". "Other waters" subject to Corps jurisdiction include lakes, rivers, and perennial or intermittent streams. Corps jurisdiction of "other waters" in non-tidal areas extends to the OHWM, defined as:

> *The term "ordinary high water mark" means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the characteristics 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.*
>
> Federal Register Vol. 51, No. 219,
> Part 328.3 (d). November 13, 1986.

"Other waters" are identified in the field by the presence of a defined river or streambed, a bank, and evidence of the flow of water, or by the absence of emergent vegetation in ponds or lakes. Assessment of the OHWM followed *A Field Guide to Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the United States* (Corps 2008b) and the Corps Regulatory Guidance Letter No. 05-05, *Ordinary High Water Mark Identification* (Corps 2005).

3.3 State Jurisdiction over Wetlands and "Other Waters"

The SWRCB and RWQCB have not established a formal wetland definition nor have they developed a wetland delineation protocol; however, these agencies generally adhere to the same delineation protocol set forth by the Corps (Environmental Laboratory 1987). Therefore, the methods used to determine potential Waters of the State were the same as those described above for potential Section 404 jurisdiction.

3.3.1 CCC Jurisdiction

The Study Area is within San Mateo County LCP area of the Coastal Zone; potential wetlands within the Study Area were analyzed in accordance with the CCC and LCP definitions.

Wetlands

The Coastal Act defines wetlands as:

> *Wetland means lands within the Coastal Zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.*
>
> Public Resources Code Section 30121

Similarly, the LCP defines a wetland as:

> *[A]n area where the water table is at, near, or above the land surface long enough to bring about the formation of hydric soils or to support the growth of plants which normally are found to grow in water or wet ground. Such wetlands can include mudflats (barren of vegetation), marshes, and swamps. Such wetlands can be either fresh or saltwater, along streams (riparian), in tidally influenced areas (near the ocean and usually below extreme high water of spring tides), marginal to lakes, ponds, and man-made impoundments. Wetlands do not include areas which in normal rainfall years are permanently submerged (streams, lakes, ponds and impoundments), nor marine or estuarine areas below extreme low water of spring tides, nor vernally wet areas where the soils are not hydric.*

CCC Administrative Regulations (Section 13577 (b)) provides a more explicit definition:

> *Wetlands are lands where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent or drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salt or other substance in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deepwater habitats.*

The Coastal Commission has considered this definition as requiring the observation of one

diagnostic feature of a wetland such as wetland hydrology, dominance by wetland vegetation (hydrophytes), or presence of hydric soils as a basis for asserting jurisdiction under the Coastal Act.

In addition to the above definition, the *Statewide Interpretive Guidelines for Identifying and Mapping Wetlands and Other Wet Environmentally Sensitive Habitat Areas* (CCC 1981) provides technical criteria for use in identifying and delineating wetlands and other ESHAs within the Coastal Zone. The technical criteria presented in the guidelines are based on the Coastal Act definition and indicate that wetland hydrology is the most important parameter for determining a wetland, recognizing that:

> *…the single feature that most wetlands share is soil or substrata that is at least periodically saturated with or covered by water, and this is the feature used to describe wetlands in the Coastal Act. The water creates severe physiological problems for all plants and animals except those that are adapted for life in water or in saturated soil, and therefore only plants adapted to these wet conditions (hydrophytes) could thrive in these wet (hydric) soils. Thus, the presence or absence of hydrophytes and hydric soils make excellent physical parameters upon which to judge the existence of wetland habitat areas for the purposes of the Coastal Act, but they are not the sole criteria.*

The technical criteria require that saturation of soil in a wetland must be at or near the surface continuously for a period of time. The meaning of "at or near the surface" generally is considered to be approximately 1 foot from the surface or less (the root zone), and the saturation must be continuously present for a period of time (generally greater than 2 weeks) in order to create the necessary soil reduction (anaerobic) processes that create wetland conditions. For example, water from rain during a storm that causes saturation near the surface but then evaporates or infiltrates to 18 inches or deeper below the surface shortly after the storm does not meet the generally accepted criteria for wetland hydrology.

The presence of wetland-classified plants or the presence of hydric soils (generally referred to as the "one-parameter approach") can be used to identify an area as being a wetland in the Coastal Zone. There is correlation between the presence of wetland-classified plants, wetland hydrology, and/or hydric soils occurring together, especially in natural, undisturbed areas. In many cases where one of these parameters is found, the other parameters will also occur. However, there are situations that can result in the presence of wetland-classified without wetland conditions, and these areas should not be considered wetlands. Where these situations occur, the delineation effort must carefully scrutinize whether the wetland-classified plants that are present are functioning as hydrophytes. Examples may include wetland-classified plants which are also salt-tolerant (e.g. alkali heath [*Frankenia salina*; FACW]) and may be responding to either wetland conditions or saline soil conditions, but not necessarily both, and deep-rooted trees (e.g., willows [*Salix* spp.]) which are able to tap into deep groundwater sources and can grow in dry surface soils but are also found in wetland conditions where surface water is present.

Hydric soils can also occur in upland areas, especially in areas where historic disturbances may have exposed substratum or in densely vegetated grasslands (mollisols). Similarly, the delineation effort must determine if the hydric soil indicators occur as a result of active wetland conditions.

The Coastal Act uses a broad wetland definition in which the presence of any one of the wetland

parameters may indicate presence of a wetland, and in general, the CCC presumes that the area is a wetland if one of the wetland parameters is present. However, there may be exceptions to this presumption if there is strong positive evidence of upland conditions. Positive evidence of upland hydrology might be the observation that a given area saturates only ephemerally following significant rainfall, that the soil is very permeable with no confining layer, or that the land is steep and drains rapidly. Positive evidence of upland conditions should be obtained during the wet season.

Soils, hydrology, and vegetation were examined on December 22, 2016, at locations within the Study Area that had the potential to meet the CCC wetland definition. Sample points were taken in representative areas throughout the Study Area. Once an area was determined to be a potential jurisdictional wetland, its boundaries were delineated using sub-meter accuracy Global Positional System equipment and overlain on a topographic map. Jurisdictional wetland acreage was measured digitally using ArcGIS software.

Streams

A stream is a natural watercourse as designated by a solid line or dash and three dots symbol shown on the USGS map most recently published, or any well-defined channel with distinguishable bed and bank that shows evidence of having contained flowing water as indicated by scour or deposit of rock, sand, gravel, soil, or debris (CCC 1981). Prior to visiting the site, WRA reviewed the most recent USGS map for the Study Area (USGS 2015) for mapped streams present within or near the Study Area.

3.4 Special-Status Species

3.4.1 Literature Review

Potential occurrence of special-status species in the Study Area was evaluated by first determining which special-status species occur in the vicinity of the Study Area through a literature and database search. Database searches for known occurrences of special-status species focused on the Half Moon Bay, Hunters Point, Montara Mountain, San Francisco South, San Mateo, and Woodside USGS 7.5-minute quadrangle maps. The following sources were reviewed to determine which special-status plant and wildlife species have been documented to occur in the vicinity of the Study Area:

- CNDDB records (CDFW 2017)
- USFWS Information for Planning and Conservation Species (USFWS 2017b)
- CNPS Inventory records (CNPS 2017a)
- Consortium of California Herbaria (CCH 2017)
- California Department of Fish and Game publication “California’s Wildlife, Volumes I-III” (Zeiner et al. 1990)
- A Field Guide to Western Reptiles and Amphibians (Stebbins and McGinnis 2012)
- California Amphibian and Reptile Species of Special Concern (Thomson et al 2016)
- California Bird Species of Special Concern (Shuford and Gardali 2008)
- USFWS Critical Habitat Mapper (USFWS 2017d)
- San Mateo County Local Coastal Program (County of San Mateo 2013)
- Western Bat Working Group, species accounts (WBWG 2017)

3.4.2 BRE Site Assessment

The BRE was conducted to determine if existing conditions provide suitable habitat for any special-status plant or wildlife species. The potential for each special-status species to occur in the Study Area was evaluated according to the following criteria:

- No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

- Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

- Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

- High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

- Present. Species is observed on the site or has been recorded (e.g. CNDDB, other reports) on the site recently.

The site assessment was intended to identify the presence or absence of suitable habitat for each special-status species known to occur in the vicinity in order to determine its potential to occur in the Study Area. The December 20 and 22, 2016 site visits did not constitute a protocol-level surveys and were not intended to determine the actual presence or absence of a species; however, if special-status species was observed during these site visits, its presence was recorded. Focused special-status plant surveys and Mission blue butterfly (*Plebejus icarioides missionensis*) larval food plant surveys were conducted on April 10 and May 26, 2017 by WRA, and the findings of those surveys are incorporated into this report. Appendix E presents the evaluation of potential for occurrence of each special-status plant and wildlife species known to occur in the vicinity of the Study Area with their habitat requirements, potential for occurrence, and rationale for the classification based on criteria listed above.

3.4.3 Special-Status Plant Species and Mission Blue Butterfly Larval Food Plant Species Survey

WRA conducted special-status plant species and Mission blue butterfly larval food plant species surveys within the Study Area on April 10 and May 26, 2017. The surveys focused on the following:

- The special-status plant species determined to have a moderate or high potential to occur within the Study Area;
- Larval food plant species for the Mission blue butterfly, including silver lupine (*Lupinus albifrons*), summer lupine (*L. formosus*), and manycolored lupine (*L. variicolor*).

The Project Area, the 100-foot area surrounding the Project Area, as well as the connecting roadways were surveyed on foot using meandering transects. These surveys were floristic in nature, and all species observed were identified to a level sufficient to determine rarity or larval food plant status. The findings of these surveys are incorporated into this report.

4.0 RESULTS

The following sections present the results and discussion of the BRE as well as focused special-status plant and Mission blue butterfly larval food plant surveys within the Study Area. The BRE site visits were conducted on December 20 and 22, 2016, and a delineation was conducted concurrently during the December 22 site visit. Focused special-status plant and Mission blue butterfly larval food plant surveys were conducted on April 10 and May 26, 2017. A list of observed plant and wildlife species is included as Appendix B. A list of special-status plant and wildlife species known to occur in the vicinity and an assessment of their potential to occur within the Study Area is included as Appendix E. Photographs of the Study Area are included as Appendix F.

4.1 Biological Communities

Biological communities identified in the Study Area are depicted in Figure 3. Descriptions for each biological community are contained in the following sections. Acreage summations for biological communities are detailed in Table 1. Non-sensitive biological communities in the Study Area include the following: arroyo willow thicket upland, coyote brush scrub, disturbed coastal scrub, Douglas fir forest, and ruderal/developed land. Two sensitive biological communities that are considered ESHAs are found in the Study Area: arroyo willow thicket wetland and seasonal emergent wetland.

4.1.1 Non-sensitive Biological Communities

Coyote brush scrub (*Baccharis pilularis* Shrubland Alliance). G5 S5. Coyote brush scrub is known from the outer Coast Ranges and Sierra Nevada Foothills from Del Norte County south to San Diego County. This plant community is typically located on river mouths, riparian areas, terraces, stabilized dunes, coastal bluffs, open hillsides, and ridgelines on all aspects underlain by variable substrate of sand to clay (CNPS 2017b). Within the Study Area, coyote brush scrub is present on all slopes and aspects in upland positions.

The tree layer is minimal, consisting of scattered Douglas fir individuals. The shrub layer is generally dense, and while coyote brush (*Baccharis pilularis* ssp. *consanguinea*; NL) is typically the dominant species, other species were abundant and occasionally co-dominant, including coffeeberry (*Frangula californica*; NL), poison oak (*Toxicodendron diversilobum*; FACU, California blackberry (*Rubus ursinus*; FAC), and sticky monkeyflower (*Mimulus aurantiacus*; FACU).

Given the density of the shrub layer, herbaceous species are sparsely present, primarily along the edges of the community, and include western sword fern (*Polystichum munitum*; FACU), bracken fern (*Pteridium aquilinum* ssp. *pubescens*; FACU), and pampas grass (*Cortaderia jubata*; FACU). Coyote brush scrub is considered secure both globally and statewide and is therefore not considered sensitive under the CEQA.

ENVIRONMENTAL CONSULTANTS

Half Moon Bay Gun Club

San Mateo County, California

Figure 3.

Biological Communities within the Study Area

Study Area (24.41 ac.)

Sensitive Communities

Arroyo Willow Thicket Wetland (0.02 ac.)

Seasonal Emergent Wetland (0.06 ac.)

Non-Sensitive Communities

Arroyo Willow Thickets (0.46 ac.)

Coyote Brush Scrub (12.67 ac.)

Disturbed Coastal Scrub (6.68 ac.)

Douglas Fir Forest (3.17 ac.)

Ruderal/ Developed (1.35 ac.)

N
W E
S

0 100 200

Feet

Map Prepared Date: 4/5/2018
Map Prepared By: mrochelle
Base Source: Feb 2015 Aerial
Data Source(s): WRA

Path: L:\Acad 2000 Files\26000\26162\GIS\ArcMap\BioComm.mxd

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Table 1. Biological Community Acreages

Biological Community	Area (acres)
Non-Sensitive Biological Communities	
Arroyo willow thicket uplands	0.46
Coyote brush scrub	12.67
Disturbed coastal scrub	6.68
Douglas fir forest	3.17
Ruderal/developed	1.35
SUBTOTAL	24.33
Sensitive Biological Communities	
Arroyo willow thicket wetland	0.02
Seasonal emergent wetland	0.06
SUBTOTAL	0.08
STUDY AREA TOTAL	**24.41**

Disturbed coastal scrub. No Rank. Disturbed coastal scrub is not described in the literature. In the Study Area, this community occurs on the ridge where stockpile area and part of its 300-foot buffer are located. Based on field observations and historical aerial imagery (Google Earth 2017), this area was historically dominated by coastal scrub, but it has been periodically cleared of vegetation since at least 2002. At the time of the December 2016 and April and May 2017 site visits, shrubby vegetation was open and generally short. However, based on historical aerial imagery (Google Earth 2017, NETR 2017), the observed density and composition of the adjacent coyote brush scrub, and the regenerating shrub species observed, it is expected that this cleared area would eventually develop into a dense coastal scrub stand comprised of non-sensitive vegetation alliances.

In the disturbed coastal scrub community, the tree layer is minimal, consisting of scattered Douglas fir (*Pseudotsuga menziesii* var. *menziesii*; FACU) and Monterey pine (*Pinus radiata*; NL) individuals. Common shrub species include coyote brush, poison oak, California blackberry, and San Mateo tree lupine (*Lupinus arboreus* var. *eximius*; NL; CNPS Rank 3.2). The herbaceous layer is dense and dominated by non-native annual grasses such as ripgut brome (*Bromus diandrus;* NL), Italian ryegrass (*Festuca perennis*; FAC), and dogtail grass (*Cynosurus echinatus;* NL), though occasional native species are present, including bracken fern. Because disturbed coastal scrub is periodically cleared and because it is dominated by non-sensitive species, this community is therefore not considered sensitive under the CEQA. However, San Mateo tree lupine plant individuals observed within this biological community are considered sensitive under CEQA, and this species is discussed in Sections 4.3.1 and 5.3.

Douglas fir forest (*Pseudotsuga menziesii* Forest Alliance). G5 S4. Douglas fir forests occur in a broad range of topographic positions and aspects and on a variety of substrates extending from the Pacific northwest south to southern California. The community typically occurs from 2,250 to 5,000 feet in elevation (CNPS 2017b). Due to the wide distribution of this community, co-dominant and non-dominant understory species vary widely. This community occurs on steep, generally west-facing slopes in the southeast portion of the Study Area near the Gun Club area.

The tree canopy is dense and composed almost entirely of Douglas fir, though occasional madrone (*Arbutus menziesii*; NL) and golden chinquapin (*Chrysolepis chrysophylla*; NL) are present. The understory is generally open and dominated by California blackberry, English ivy (*Hedera helix*; FACU), and poison oak.

The herbaceous layer is sparse and includes California bee plant (*Scrophularia californica*; FAC) and western sword fern. The Douglas fir forest vegetation alliance is secure both globally and statewide and is not considered sensitive under the CEQA.

Ruderal/developed. No Rank. The ruderal/developed biological community consists of areas that have experienced major disturbance from human activity, primarily land surface alteration such as grading or excavation. This biological community consists of roads, built structures, landscaping, and excavated terraces, such as the one where the Gun Club building is located. Because of the level of disturbance, vegetation is often sparse or non-existent, but in some areas, species tolerant of ruderal conditions are present. No trees are present, and the shrub layer consists of occasional California blackberry, coyote brush, and French broom (*Genista monspessulana*; NL) at low cover. Common herbaceous species include dogtail grass, bristly ox-tongue (*Helminthotheca echioides*; FAC), Jersey cudweed (*Pseudognaphalium luteoalbum*; FAC), wide-leaved forget me not (*Myosotis latifolia*; NL), and mustard (*Hirschfeldia incana*; NL). Ruderal/developed differs from disturbed coastal scrub because although the latter community experiences periodic disturbance in the form of vegetation clearing, the ground surface is not significantly disturbed, the natural topography is still intact, and the natural successional trend toward native coastal scrub is still apparent. Because ruderal/developed areas have experienced substantial disturbance and are characterized by weedy vegetation, this community is therefore not considered sensitive under the CEQA.

Arroyo willow thicket (*Salix lasiolepis* Shrubland Alliance) upland. G4 S4. Arroyo willow thickets are widespread throughout most of California. This plant community is typically located in intermittently flooded sites, including stream banks and benches and slope seeps (CNPS 2017b). Although arroyo willows (*Salix lasiolepis*; FACW) often occur in wetlands, the species can have deep taproots and access subsurface water that is below the depth required for wetland delineation (as described in Section 3.2) purposes. In such situations, arroyo willows function as non-hydrophytes. In the Study Area, stands of arroyo willow occur on steep, west- and south-facing slopes in well-drained sandy loam soils, and the willows appear to function as hydrophytes and non-hydrophytes, depending on the location. In areas where arroyo willows occurred in conjunction with observations of hydric soil and wetland indicators, the arroyo willows were functioning as hydrophytes. Such areas were mapped as wetlands, and for the purposes of this report, are classified as arroyo willow thicket wetlands. See section 4.1.2 for a more detailed description of arroyo willow thicket wetlands. In areas where arroyo willows occurred without observations of hydric soil and wetland hydrology indicators, the willows were functioning as non-hydrophytes. Such areas were mapped as uplands, and for the purposes of this report, are

classified as arroyo willow thicket uplands. In some locations in the Study Area, arroyo willow thicket uplands occur adjacent to arroyo willow thicket wetlands. In such cases, the arroyo willow thicket uplands were not considered riparian because they did not occur in conjunction with a watercourse or open body of water and are therefore not considered and ESHA.

A tree canopy was generally not present, though a single coast live oak (*Quercus agrifolia* var. *agrifolia*; NL) was present in one location. The shrub canopy was dense, with the overstory dominated by arroyo willow, but also contained occasional red elderberry (*Sambucus racemosa* ssp. *racemosa*; FACU) and twinberry (*Lonicera involucrata* var. *ledebourii*; FAC) individuals. The understory was a mix of shrubs, including poison oak and California blackberry, and herbs, including California bee plant, poison hemlock (*Conium maculatum*; FACW), and hedge nettle (*Stachys cf. rigida*; FACW). The arroyo willow thicket upland biological community is apparently secure globally and statewide and is not a wetland or riparian area and is therefore not considered sensitive under the CEQA.

4.1.2 Sensitive Biological Communities

Arroyo willow thicket wetland. ESHA, G4 S4. As described in Section 4.1.1, the arroyo willow thicket vegetation alliance occurs in both upland and wetland conditions in the Study Area. For the purposes of this report, stands of arroyo willow occurring without observations of hydric soils and wetland hydrology indicators are classified as arroyo willow uplands. Stands of arroyo willow occurring with observations of hydric soils and hydrophytic vegetation indicators are classified as arroyo willow thicket wetlands.

In the Study Area, two small arroyo willow thicket wetlands are mapped on steep slopes in areas with dense arroyo willow cover that are associated with seep hydrology. For a more detailed description of arroyo willow thicket wetlands, see Section 4.4.1.

The vegetation in arroyo willow thicket wetlands is characterized by a dense shrub canopy consisting of arroyo willow. The understory is primarily a mix of California blackberry and facultative wetland species, such as common bog rush (*Juncus effusus*; FACW) and a species of rush that has the vegetative appearance of brown-headed rush (*J. phaeocephalus*; FACW) but lacked floral characters needed for identification. No tree species were present in arroyo willow thicket wetlands. Given that arroyo willow thicket wetland is not associated with a watercourse, it is not considered riparian habitat.

Seasonal Emergent Wetland. ESHA, No Rank. Seasonal wetlands occur throughout California in a wide range of topographic settings. As such, vegetation associated with seasonal wetlands varies greatly across the state. In the Study Area, three seasonal emergent wetlands occur as a result of seep hydrology and form in anthropogenic flat areas, such as road beds and the area adjacent to the Gun Club building. The vegetation in the seasonal emergent wetlands within the Study Area varies greatly and has no clear dominant species, though in all cases, it meets the Dominance Test hydrophytic vegetation indicator. Although California blackberry is present in some areas, the vegetation is predominantly herbaceous, and includes species such as watercress (*Nasturtium officinale*; OBL), rush (*Juncus patens*; FACW), common bog rush, slender willowherb (*Epilobium ciliatum*; FACW), and water speedwell (*Veronica anagallis-aquatica*; OBL). No tree species were present in seasonal emergent wetlands. For a more detailed description of seasonal emergent wetlands, see Section 4.4.1.

4.1.3 General Site Conditions

Vegetation

Vegetation within the Study Area is discussed above in Section 4.1 and includes arroyo willow thicket upland, arroyo willow thicket wetland, coyote brush scrub, disturbed coastal scrub, Douglas fir forest, and ruderal/developed land, and seasonal emergent wetland. Vegetation within these biological communities is discussed in Section 4.1.

Soils

Mapped soils in the Study Area are depicted in Figure 4. The Study Area has steep, south-trending macro-topography, though it is comprised of several smaller ridges with east, south, and west aspects. Although the site exhibits human disturbance along roads and around the Gun Club building, the soil appears to be generally native and intact.

Based on the Soil Survey of San Mateo Area (USDA 1961) and an online soil survey of the Study Area (CSRL 2017), it was determined that the Study Area is underlain by four soil-mapping units: Miramar coarse sandy loam, moderately steep, eroded; Miramar coarse sandy loam, steep, eroded; Miramar coarse sandy loam, steep, severely eroded; rough broken land. However, field observations indicate that while loamy soils are present in the Study Area, no rocky areas matching the description of rough broken land were observed. Mapped soil types are described below.

Miramar Series

The Miramar soil series consists of moderately deep, well drained soils formed in material weathered from quartz diorite. These soils are located on coastal hills and mountains and have slopes ranging from 9 to 75 percent. A typical profile includes five soil horizons: A1, A2, Bt, BC, and CR.

The A1 horizon is a very dark gray (10YR 3/1), neutral (pH 7.0) loam from 0 to 7 inches. The A2 horizon is a very dark gray, slightly acidic (pH 6.5) loam from 7 to 15 inches. This is underlain by a Bt horizon, which is a dark brown (10YR 3/3) slightly acidic clay loam, from 15 to 24 inches. This is underlain by a BC horizon, which is a dark brown (10YR 4/3), slightly acidic loam, from 24 to 29 inches. This is underlain by a Cr horizon, which is weathered quartz diorite that can easily be broken with a tile spade (CSRL 2017).

Rough broken land

This miscellaneous land type consists of very steep rocky uplands that, in most places, have a slope steeper than 41 percent. Rock outcrops occupy approximately half the surface, and the rocks are composed of granite, Monterey shale, sandstone, or basalt. There is seldom more than a 10-inch thickness of soil material (USDA 1961).

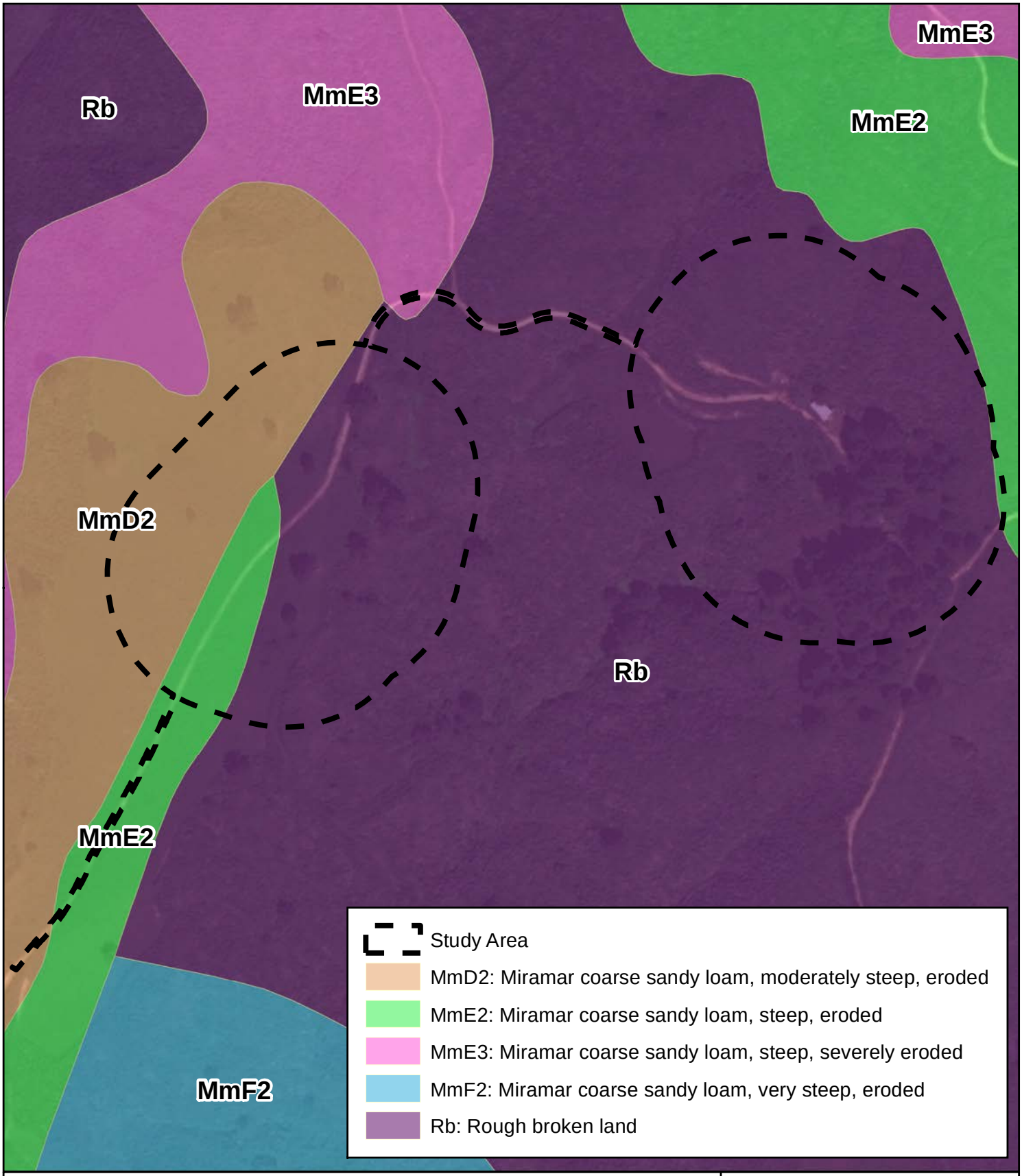


Figure 4. Soil Types in the Study Area

N
W E
S

0 100 200 400
Feet

wra
ENVIRONMENTAL CONSULTANTS

Half Moon Bay Gun Club
San Mateo, California

Map Prepared Date: 3/8/2018
Map Prepared By: mrochelle
Base Source: Esri Streaming Imagery
Data Source(s): WRA, NRCS SSURGO Soils

Path: L:\Acad 2000 Files\26000\26162\GIS\ArcMap\Soils.mxd

Hydrology

The primary hydrological source of the Study Area appears to be subsurface seepage, which continues to provide water after precipitation and surface runoff have ceased. Based on field observations, wetlands in the Study Area do not appear to have a direct surface connection to Locks Creek, an intermittent "blue line stream" mapped downslope from the Study Area (USGS 2015) and instead infiltrate into the well-drained loamy (CSRL 2017) soil.

Precipitation falls entirely as rainfall within the Study Area. The average annual rainfall for the Half Moon Bay (CA3714) climate station, approximately 4.75 miles south of the Study Area, is 27.96 inches (USDA 2016). A comparison of rainfall data from the closest weather station with suitable data (Half Moon Bay 0.7 NW [GHCND:US1CASM0016]; NOAA 2016) to long-term WETS data at the Half Moon Bay (CA3714) climate station (USDA 2016) showed that in the 3 months prior to the December 22, 2016, site visit, a total of 6.04 inches of precipitation occurred, which is normal for this period of time. In November, 2.26 inches of precipitation occurred (normal); in October, 3.78 inches of precipitation occurred (above normal); and in September, 0.00 inches of precipitation occurred (below normal). At the time of the December 22, 2016, site visit, 4.40 inches of precipitation had occurred in the month of December, which is normal, including a 3-day precipitation event totaling 2.06 inches, which occurred 6 days prior to the site visit.

4.2 Potentially Federal and State Jurisdictional Wetlands and "Other Waters"

A delineation of the Study Area was conducted concurrently with the BRE site visit on December 22, 2016. Areas mapped as potential jurisdictional features include seasonal emergent wetland and arroyo willow thicket wetlands, which are regulated by the Corps, RWQCB, and CCC. Potentially jurisdictional resources observed within the Study Area are shown in Appendix D and acreages are summarized in Table 2 below. Delineation data sheets are included as Appendix C.

Seasonal Emergent Wetland (PEM2)

Seasonal emergent wetlands can be classified as palustrine, emergent, non-persistent (PEM2) (Cowardin et al. 1979). Seasonal emergent wetlands within the Study Area were characterized by herbaceous vegetation that met the vegetative percent cover and Dominance Test hydrophytic vegetation wetland indicator requirements to be considered potentially jurisdictional wetland features. As discussed in Section 4.1.2, vegetation in seasonal emergent wetlands within the Study Area is predominantly herbaceous, and includes species such as watercress (OBL), rush (FACW), common bog rush (FACW), slender willowherb (FACW), and water speedwell (OBL).

Soils in seasonal wetlands were dark (10YR 2/1) loams with 3 to 20 percent redoximorphic matrix concentrations (2.5YR 3/4) that met the Redox Dark Surface hydric soil indicator. Seasonal wetlands in the Study Area met one or more wetland hydrology indicators, including Saturation, Surface Water, and High Water Table.

In the Study Area, seasonal emergent wetlands occur as a result of seep hydrology and form in anthropogenic flat areas, such as road beds and the area adjacent to the Gun Club building. Two seasonal emergent wetlands occur northwest ("SW-1" in Appendix D) and southeast (SW-2) of the Gun Club building, where water collects in the anthropogenic flat areas and results in seasonal saturation and shallow inundation. When hydrologic input is sufficient, both of these wetlands drain to the adjacent road via small, linear, manmade excavations, and then infiltrate into the soil

as sheet flow. A third seasonal emergent wetland (SW-3) forms where a seep located in a road cut drains into the roadbed as well as into a small, manmade ditch adjacent to the roadbed. When the hydrological input is sufficient, this wetland drains downslope to an adjacent arroyo willow thicket wetland.

Table 2. Jurisdictional Features within the Study Area

POTENTIALLY JURISDICTIONAL FEATURES		FEATURE SIZE (acres)
Corps (Section 404)/RWQCB (Section 401)/CCC	Seasonal Emergent Wetland	0.06
	Arroyo Willow Thicket Wetland	0.02
CORPS/RWQCB/CCC TOTAL		**0.08**

Arroyo Willow Thicket Wetland (PSS1)

Arroyo willow thicket wetland can be classified as palustrine, scrub-shrub, broadleaved deciduous (PSS1) (Cowardin et al. 1979). As discussed in Section 4.1.2, arroyo willow thicket wetlands within the Study Area were characterized by a shrubby overstory including arroyo willow (FACW) and shrubby-to-herbaceous understory including California blackberry (FAC), common bog rush (FACW), and brown-headed-rush (FACW); which met the vegetative percent cover and Dominance Test hydrophytic vegetation wetland indicator requirements to be considered potentially jurisdictional wetland features.

Soil in the arroyo willow thicket wetlands were a dark (10YR 2/1 and 10YR 3/2) sandy loam with 10 percent redoximorphic matrix concentrations (5YR 3/4) that met the Redox Dark Surface hydric soil indicator.

Where sampled, arroyo willow thicket wetlands in the Study Area met the Saturation wetland hydrology indicator; although an area outside of the sample point would also have met the Surface Water indicator. One arroyo willow thicket wetland AW-1 (Appendix D) is located on the slope north of the Gun Club Building. In this feature, a seep emerges from the hillside and flows downhill, draining onto the manmade terrace into a seasonal wetland. The other arroyo willow thicket wetland AW-2 is also located south of the Gun Club Building, between two dirt roads. The primary hydrological input for this feature appears to be a runoff from an adjacent seasonal emergent wetland located upslope that drains into this feature, although there may also be groundwater seepage into it. Water drains downslope in a narrow band and collects adjacent to a dirt road. Although a culvert is present on the downslope side of this feature, it appears that the culvert only rarely receives flow because there were no indicators of flow, hydric soil, or wetland hydrology below the outfall.

Although areas mapped as arroyo willow thicket uplands (Section 4.1.1) met the Dominance Test hydrophytic vegetation indicator, these areas were not mapped as wetlands because the willows were not functioning as hydrophytes. In the Study Area, arroyo willow thicket uplands occur on

steep, west- and south-facing slopes in well-drained sandy loam soils. Hydric soil indicators and wetland hydrology were not observed, despite the fact that a period of normal precipitation occurred in the 3 months prior to the December 2016 site visit and a precipitation event totaling 2.06 inches occurred 6 days prior to the site visit. Additionally, species composition of arroyo willow thicket uplands included upland species such as poison oak, coast live oak, and red elderberry. Willows can have deep taproots, and they may be accessing subsurface water at depth lower than that needed to meet wetland conditions.

Upland Areas

Upland areas were typically dominated by coastal scrub species, Douglas fir, or non-native annual grasses. Soils within uplands were comprised of dark (10YR 2/1, 10YR 2/2, 10YR 3/2) loam or sandy loam. No upland sample point locations met any hydric soil indicators or any wetland hydrology indicators.

4.3 Special-Status Species

4.3.1 Special-Status Plant Species

Based upon a review of the resources and databases given in Section 3.4.1, 79 special-status plant species have been documented in the vicinity of the Study Area. Appendix E summarizes the potential for occurrence for each of these special-status plant species to occur in the Study Area. All plant species observed in the Study Area are included in Appendix B. Plant species documented in the CNDDB within 5 miles of the Study Area are show in Figure 5.

One special-status plant species, San Mateo tree lupine, was observed within the Study Area. Three special-status plant species; Brewer's calandrinia (*Calandrinia breweri*; Rank 4.2), western leatherwood (*Dirca occidentalis*; Rank 1B.2), and California bottle-brush grass (*Elymus californicus*; Rank 4.3); were determined to have a moderate potential to occur within the Study Area; however, these species were not observed during focused surveys during the appropriate blooming periods and are consequently assumed to not be present within the Study Area. The remaining 75 special-status plant species are unlikely or have no potential to occur in the Study Area for one or more of the following reasons:

- Hydrologic conditions (e.g. marsh habitat, vernal pool habitat) necessary to support the special-status plants do not exist on site;
- Edaphic (soil) conditions (e.g. serpentine, rocky, rhyolitic) necessary to support the special-status plants do not exist on site;
- Topographic conditions (e.g. valley flats, marine terrace) necessary to support the special-status plants do not exist on site;
- Unique pH conditions (e.g. alkali soil) necessary to support the special-status plant species are not present in the Study Area;
- Associated vegetation communities (e.g. chaparral, closed-cone coniferous forest) necessary to support the special-status plants do not exist on site

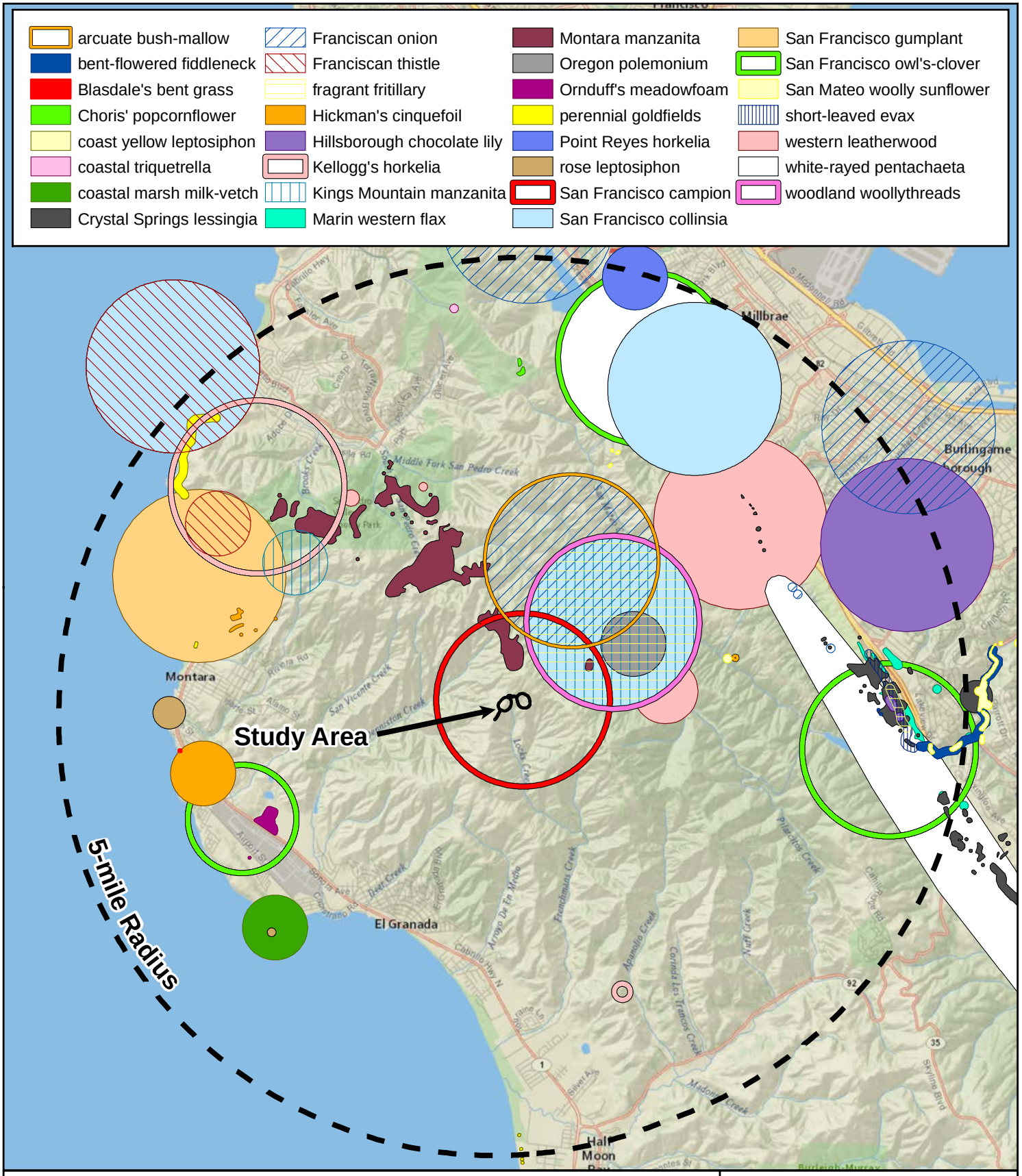


Figure 4. Special-Status Plant Species withn 5-miles of the Study Area

Half Moon Bay Gun Club
San Mateo, California

0 1 2 4
Miles

ENVIRONMENTAL CONSULTANTS

Map Prepared Date: 3/8/2018
Map Prepared By: mrochelle
Base Source: Esri Streaming - National Geographic
Data Source(s): CDFW CNDDB (January 2017)

Path: L:\Acad 2000 Files\26000\26162\GIS\ArcMap\CNDDB Plants.mxd

In addition to San Mateo tree lupine, three special-status plant species were initially determined to have moderate or high potential to occur in the Study Area and were surveyed for on April 10 and May 26, 2017: Brewer's calandrinia (*Calandrinia breweri*; Rank 4.2), western leatherwood (*Dirca occidentalis*; 1B.2), and California bottle-brush grass (*Elymus californicus*; Rank 4.3). However, despite what appeared to be the presence of potentially suitable habitat within the Study Area, these species were not observed during special-status plant surveys; as such, these species are assumed to be not present. These special-status plant species are discussed below.

Present

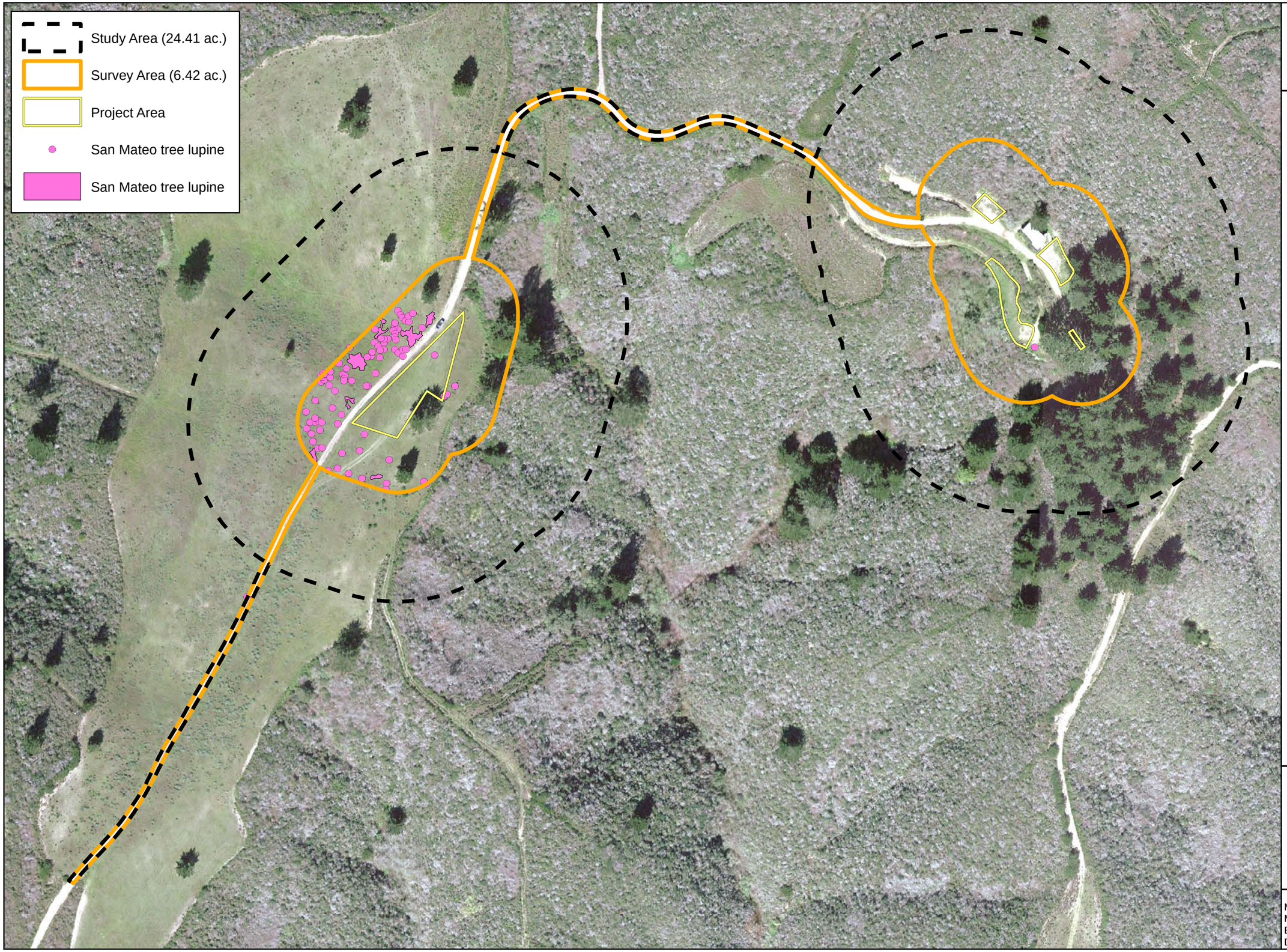
San Mateo tree lupine (*Lupinus arboreus* var. *eximius*), Rank 3.2. San Mateo tree lupine is a shrub in the pea family (Fabaceae). This species typically occurs in chaparral and coastal scrub habitats at elevations ranging from 300 to 1,800 feet (90 to 550 meters). It typically blooms between April and July and has been recorded in San Mateo and Sonoma counties. Observed associated species include California coffeeberry (*Frangula californica*), poison oak, and elderberry (*Sambucus* sp.; CCH 2017).

A single San Mateo tree lupine individual was observed near the proposed soil excavation areas (adjacent to the southwestern excavation area). Approximately 328 individuals were observed in the disturbed coastal scrub community surrounding the proposed stockpile area within the survey area and an extensive population was generally observed outside of the survey area. Observed associated species include poison oak, California blackberry, coyote brush, bracken fern, rattlesnake grass (*Briza maxima*), slim oat (*Avena barbata*), rattail fescue (*Festuca myuros*), pale flax (*Linum bienne*), narrow-leaved clover (*Trifolium angustifolium*), and sheep sorrel (*Rumex acetosella*). Figure 6 depicts the locations of San Mateo tree lupine individuals observed within the Study Area.

Assumed absent

California bottle-brush grass (*Elymus californicus*), Rank 4.3. California bottle-brush grass is a perennial graminoid in the grass family (Poaceae) that blooms from May to November. It typically occurs along stream banks or other mesic sites within broadleaf upland forest, cismontane woodland, North Coast coniferous forest, and riparian woodland habitat at elevations ranging from 45 to 1530 feet (CNPS 2017a). Observed associated species include Douglas fir, red elderberry, leather fern (*Polypodium scouleri*), coast redwood (*Sequoia sempervirens*), and coast live oak (CCH 2017).

The nearest documented occurrence is in San Mateo County from 2000, approximately 1.5 miles southeast of the Study Area near the Scarper Ridge summit. Observed associated species at that occurrence (CCH 2017) are present in the Study Area. California bottle-brush grass was initially determined to have high potential to occur in Douglas fir forest in the Study Area due to the close proximity and similar habitat of the nearest documented occurrence. However, this species was not observed during focused special-status plant surveys on April 10 or May 26, 2017, and is therefore assumed to be not present within the Study Area.



wra
ENVIRONMENTAL CONSULTANTS

Half Moon Bay Gun Club

San Mateo County, California

Figure 6.

Special-Status Plant Survey Results

N
W E
S

0 100 200

Feet

Map Prepared Date: 3/8/2018
Map Prepared By: mrochelle
Base Source: Feb 2015 Aerial
Data Source(s): WRA

Path: L:\Acad 2000 Files\26000\26162\GIS\ArcMap\RarePlantSurvey.mxd

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Brewer's calandrinia (*Calandrinia breweri*), Rank 4.2. Brewer's calandrinia is an annual herb in the miner's lettuce family (Montiaceae) that occurs in disturbed sites and burns in chaparral and coastal scrub on sandy or loamy substrate at elevations ranging from 30 to 4,000 feet (10 to 1,220 meters). Observed associated species include blue oak, chamise (*Adenostoma fasciculatum*), calf lotus, sticky monkeyflower, coyote brush, and whispering bells (*Emmenanthe penduliflora*; CCH 2017).

The nearest documented occurrence is from 2008 and is located approximately 2 miles east of the Study Area on San Francisco Public Utilities District property. Brewer's calandrinia was initially determined to have moderate potential to occur in the disturbed coastal scrub community because of the close proximity and the presence of loamy soils that are disturbed periodically by vegetation clearing. However, this species was not observed during special-status plant surveys on April 10 or May 26, 2017, and is therefore assumed to be not present within the Study Area.

Western leatherwood (*Dirca occidentalis*), Rank 1B.2. Western leatherwood is a deciduous shrub in the mezereum family (Thymelaeaceae) that blooms from January to April, but is typically identifiable via vegetative structures into late spring and/or early summer. It typically occurs on brushy, mesic slopes in partial shade in broadleaf upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, North Coast coniferous forest, riparian forest, and riparian woodland habitat at elevations range from 165 to 1285 feet (CDFW 2017, CNPS 2017a, Jepson Flora Project 2017). Observed associated species include coast live oak, California bay, Pacific madrone, California coffeeberry, poison oak, toyon (*Heteromeles arbutifolia*), California buckeye (*Aesculus californicus*), California hazelnut (*Corylus cornuta*), coyote brush, yerba buena (*Clinopodium douglasii*), sword fern, Pacific sanicle (*Sanicula crassicaulis*), and Douglas iris (*Iris douglasiana*) (CDFW 2017).

The nearest occurrence is from 1976, in Douglas fir forest on San Francisco Public Utilities District property, approximately 1.5 miles east of the Study Area (CDFW 2017). Western leatherwood was initially determined to have moderate potential to occur in the coyote brush scrub and Douglas fir forest communities in the Study Area due to the presence of relatively undisturbed brushy and shaded slopes and associated species. However, this species was not observed during special-status plant surveys on April 10 or May 26, 2017, and is therefore assumed to not be present within the Study Area.

4.3.2 Special-Status Wildlife Species

Based upon a review of the resources and databases given in Section 3.4.1, 60 special-status wildlife species have been documented in the vicinity of the Study Area. Appendix E summarizes the potential for each of these species to occur in the Study Area. Any wildlife species documented in the CNDDB within 5 miles of the Study Area are shown in Figure 7. Of the 60 special-status wildlife species documented in the vicinity of the Study Area, two are present in the Study Area and three have a moderate or high potential to occur within the Study Area. The majority of species have no potential or are unlikely to occur due to a lack of suitable habitat components such as:

- tidal marsh,
- ponds or other large waterbodies,
- streams, caves, or other suitable roost sites,
- marine environments, or

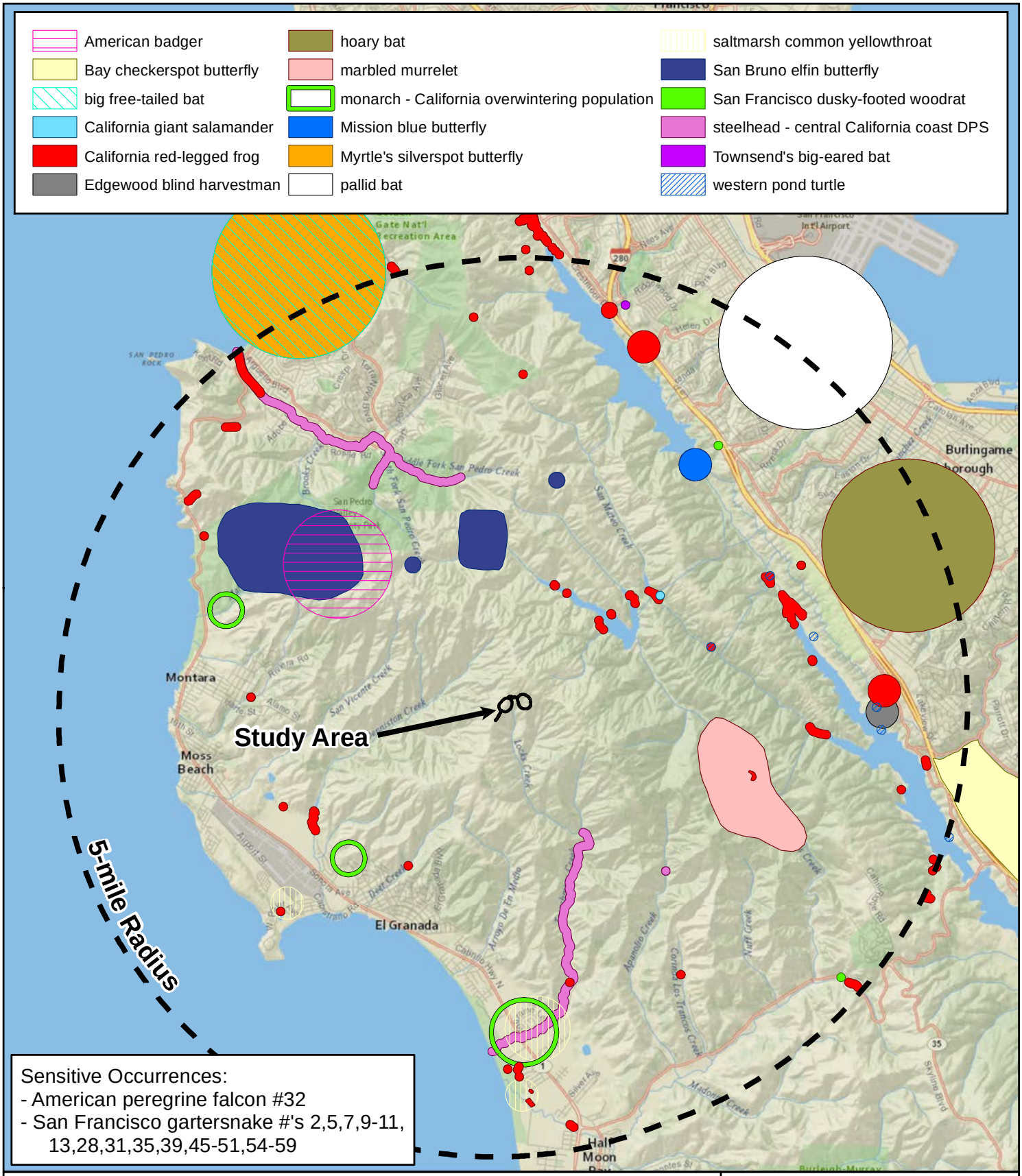

Figure 5. Special-Status Wildlife Species withn 5-miles of the Study Area

Half Moon Bay Gun Club
San Mateo, California

0 1 2 4
Miles

ENVIRONMENTAL CONSULTANTS

Map Prepared Date: 3/8/2018
Map Prepared By: mrochelle
Base Source: Esri Streaming - National Geographic
Data Source(s): CDFW CNDDB (January 2017)

Path: L:\Acad 2000 Files\26000\26162\GIS\ArcMap\CNDDB Wildlife.mxd

- suitable cavity bearing trees.

Special-status wildlife species that are documented to be present or have a moderate or high potential to occur in the Study Area are discussed below.

Present

San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*). CDFW Species of Special Concern. This subspecies of the dusky-footed woodrat occurs in the Coast Ranges between San Francisco Bay and the Salinas River (Matocq 2003). Occupied habitats are variable and include forest, woodland, riparian areas, and chaparral. Woodrats feed on woody plants, but will also consume fungi, grasses, flowers, and acorns. Foraging occurs on the ground and in bushes and trees. This species constructs robust stick houses/nests in areas with moderate cover and a well-developed understory containing woody debris. Breeding takes place from December to September. Individuals are active year-round and generally nocturnal.

During the site assessment of December 20, 2016 several woodrat stick houses were observed within and surrounding the Study Area. Based on the observed presence of stick houses within the Study Area, the species is considered present.

California red-legged frog (*Rana draytonii; CRLF*), Federal Threatened Species, CDFW Species of Special Concern. CRLF is dependent on suitable aquatic, estivation, and upland habitat. During periods of wet weather, starting with the first rainfall in late fall, red-legged frogs disperse away from their estivation sites to seek suitable breeding habitat. Aquatic and breeding habitat is characterized by dense, shrubby, riparian vegetation and deep, still or slow-moving water. Breeding occurs between late November and late April. California red-legged frogs estivate (period of inactivity) during the dry months in small mammal burrows, moist leaf litter, incised stream channels, and large cracks in the bottom of dried ponds.

There are four physical and biological features that are considered to be essential for the conservation or survival of a species. The features for the CRLF include: aquatic breeding habitat; non-breeding aquatic habitat; upland habitat; and dispersal habitat (USFWS 2010a).

Aquatic breeding habitat consists of low-gradient fresh water bodies, including natural and manmade (e.g. stock) ponds, backwaters within streams and creeks, marshes, lagoons, and dune ponds. It does not include deep water habitat, such as lakes and reservoirs. Aquatic breeding habitat must hold water for a minimum of 20 weeks in most years. This is the average amount of time needed for egg, larvae, and tadpole development and metamorphosis so that juveniles can become capable of surviving in upland habitats (USFWS 2010a).

Aquatic non-breeding habitat may or may not hold water long enough for this species to hatch and complete its aquatic life cycle, but it provides shelter, foraging, predator avoidance, and aquatic dispersal for juvenile and adult CRLF. These waterbodies include plunge pools within intermittent creeks; seeps; quiet water refugia during high water flows; and springs of sufficient flow to withstand the summer dry period. The CRLF can use large cracks in the bottom of dried ponds as refugia to maintain moisture and avoid heat and solar exposure (Alvarez 2004). Non-breeding aquatic features enable CRLF to survive drought periods, and disperse to other aquatic breeding habitat (USFWS 2010a).

Upland habitats include areas within 300 feet of aquatic and riparian habitat and are comprised of grasslands, woodlands, and/or vegetation that provide shelter, forage, and predator avoidance. These upland features provide breeding, non-breeding, feeding, and sheltering habitat for juvenile and adult frogs (e.g., shelter, shade, moisture, cooler temperatures, a prey base, foraging opportunities, and areas for predator avoidance). Upland habitat can include structural features such as boulders, rocks and organic debris (e.g. downed trees, logs), as well as small mammal burrows and moist leaf litter (USFWS 2010a).

Dispersal Habitat includes accessible upland or riparian habitats between occupied locations within 0.7 mile of each other that allow for movement between these sites. Dispersal habitat includes various natural and altered habitats such as agricultural fields, which do not contain barriers to dispersal. Moderate- to high-density urban or industrial developments, large reservoirs, and heavily traveled roads without bridges or culverts are considered barriers to dispersal (USFWS 2010a). Although CRLF is highly aquatic, this species has been documented to make overland movements of several hundred meters and up to one mile during a winter-spring wet season in Northern California (Bulger et al. 2003, Fellers and Kleeman 2007) and 2,860 meters (1.8 miles) in the central California coast (Rathbun and Schneider 2001). Frogs traveling along water courses can exceeded these distances.

During a site visit conducted by WRA and POST personnel on May 25, 2016, a CRLF young-of-year was observed within the wetted roadway. The observation was made prior to conducting the site visits on December 20 and 22, and no additional CRLF were observed during those site visits.

Water depth within the seep is less than 1-inch deep, and no natural depressions exist to allow deeper pools to form. Because deep pools or ponds are not present, aquatic breeding habitat is absent from the Study Area. The lack of depth also prevents frogs from using water depth to evade predation, which is a requirement of aquatic non-breeding habitat. Therefore, the Study Area does not contain aquatic non-breeding habitat. No suitable small mammal burrows or other such structural features are present, therefore the Study Area is unsuitable for long-term upland occupancy for CRLF. The Study Area is therefore only used by CRLF as temporary stopover habitat during migration or dispersal events. The wetland portions of the Study Areas are consequently only suitable as dispersal habitat for CRLF. CRLF are therefore unable to frequent the wetted portions of the Study Area for any period of time and likely opportunistically occur as conditions within the site and surrounding habitats change during the year.

High Potential

Costa's hummingbird (*Calypte costae*). USFWS Bird of Conservation Concern. Costa's hummingbird is a year round resident along the coastal slope of California from Santa Barbara County south, and is also a summer resident in much of the interior desert region. This species occurs in arid habitats throughout its range. In coastal California, primary habitats include coastal scrub, chaparral and oak savannah. Nests are built in a variety of shrubs and cacti, usually three to six feet above the ground (Baltosser and Scott 1996). Like other hummingbirds, this species consumes flower nectar and forages for insects and spiders.

Coastal scrub communities dominate the hillslopes within and surrounding the Study Area. Additionally, the habitat mosaic of coastal scrub, forests, grasslands and wetland vegetation in the Study Area, suggests Costa’s hummingbird has a high potential to forage and nest within or immediately adjacent to the Study Area.

Allen's hummingbird (*Selasphorus sasin*). USFWS Bird of Conservation Concern. Allen's hummingbird, common in many portions of its range, is a summer resident along the majority of California's coast and a year-round resident in portions of coastal southern California and the Channel Islands. Breeding occurs in association with the coastal fog belt, and typical habitats used include coastal scrub, riparian, woodland and forest edges, and eucalyptus and cypress groves (Mitchell 2000). This species feeds on nectar, as well as insects and spiders.

There are a variety of suitable habitats for this species within the Study Area including coastal scrub and conifer forests. Additionally, the Study Area is in close proximity to a variety of rich foraging habitat. Allen's hummingbird, therefore has a high potential to occur within the Study Area.

Moderate Potential

Olive-sided flycatcher (*Contopus cooperi).* CDFW Species of Special Concern. USFWS Bird of Conservation Concern. This species if found within the coniferous forest biome, most often associated with forest openings, forest edges near natural openings (e.g. meadows, canyons, rivers) or human-made openings (e.g., harvest units), or open to semi-open forest stands (Altman 2000).

Although this species typically nests in more protected areas from the coastline, large conifer trees to the southeast of the Study Area may provide suitable nesting habitat. The habitat mosaic of coastal scrub, forests, grasslands and wetland vegetation in the Study Area is also suitable foraging habitat. Because of the presence of suitable nesting and foraging habitat, this species has a moderate potential to occur within the Study Area.

The following FESA and CESA-listed species are known to occur in the greater vicinity of the Study Area but have been determined to be unlikely to occur. Species that are discussed have been documented within 5-miles of the Study Area, though current habitat conditions are such that their presence is not supported. Despite the determination that these species are unlikely to be found within the Study Area, they are discussed for completeness.

Unlikely Potential

Mission blue butterfly (*Plebejus icarioides missionensis*), Federal Endangered. Mission blue butterfly persists in small populations in San Francisco, San Mateo, and Marin Counties. The majority of the remaining mission blues are found on San Bruno Mountain in San Mateo County. This species inhabits coastal chaparral and coastal grasslands in the fog belt of the coastal range from 690 to 1,180 feet in elevation. Three species of lupine serve as larval food plants: silver lupine (*Lupinus albifrons*), summer lupine (*L. formosus*), and manycolored lupine (*L. variicolor*). Adults feed on hairy false goldenaster (*Heterotheca villosa*), bluedicks (*Dichelostemma capitatum*), and seaside buckwheat (*Eriogonum latifolium*) (Black and Vaughan 2005a).

This species is known to occur on the ridges to the east of the Study Area in the adjacent San Francisco Peninsular Watershed (USFWS 2010b). To determine if the species had potential to occur within the Study Area, WRA conducted a plant survey during the blooming period for the three host species. No host plants were observed within the Study Area. Because no host plants are present, the species is unlikely to occur.

San Francisco Garter Snake (*Thamnophis sirtalis tetrataenia*), Federal Endangered, State Endangered, CDFW Fully Protected. Historically, San Francisco garter snake (SFGS) occurred in scattered wetland areas on the San Francisco Peninsula. This species was historically documented from approximately the San Francisco County line south along the eastern and western bases of the Santa Cruz Mountains, at least to the Upper Crystal Springs Reservoir, and along the coast south to Año Nuevo Point, San Mateo County, and Waddell Creek, Santa Cruz County. The preferred habitat of SFGS is a densely vegetated pond near an open hillside where they can sun themselves, feed, and find cover in rodent burrows; however, considerably less ideal habitats can be successfully occupied (USFWS 2006).

There are two significant components to SFGS habitat: 1) ponds that support CRLF, American bullfrog (*Lithobates catesbeiana*), or the Pacific chorusfrog (*Pseudacris regilla*) and 2) surrounding upland that supports Botta's pocket gopher *(Thomomys bottae)* and the California meadow vole *(Microtus californicus)* (USFWS 2006). Ranid frogs are an obligate component of the SFGS's diet (USFWS 2006).

The Study Area is more than 1 mile from any ponds or reservoirs that are potentially capable of supporting SFGS. SFGS requires a robust population of CRLF for forage, and the nearest waterbody that offers potentially suitable habitat and foraging resources is Pilarcitos Lake, approximately 1.25 miles from the Study Area. No riparian corridors or hydrologic connectivity exists between the Study Area and this potential habitat. The Study Area does not support a sufficient or reliable prey base, and the distance between the Study Area from suitable SFGS habitat is far greater than the maximum overland dispersal distance, the species is unlikely to occur within the Study Area.

San Bruno Elfin Butterfly (*Callophrys mossii bayensis*), Federal Endangered. San Bruno elfin butterfly inhabits coastal mountains near San Francisco Bay, in the fog belt of steep north-facing slopes that receive little direct sunlight. It lives near prolific growths of the larval food plant, broadleaf stonecrop (*Sedum spathulifolium*), which is a low-growing succulent associated with rocky outcrops (often in the shade) that occur on steep, mainly north-facing slopes in coastal scrub from 200 to 5,000 feet elevation (Black and Vaughan 2005b). The San Bruno elfin is restricted to a few small populations, the largest of which occurs on San Bruno Mountain. Its habitat has been diminished by quarrying, off-road recreation, and urban development (Black and Vaughan 2005b).

While several occurrences of this species have been recorded approximately 2 miles north of the Project location (CDFW 2017); the aspect of the Study Area, and the absence of the host plant make it unlikely to occur. This butterfly occurs only on north facing slopes that receive little direct sunlight, which moderates weather conditions (USFWS 2010b). All of the occurrences for this species in the area have been recorded on similar aspect slopes (CDFW 2017). Slope aspects within the Study Area face almost entirely westward and southward, with full exposure to offshore winds and higher levels of sunlight than the specie can tolerate. Additionally, the only known host plant for this species is stonecrop (*Sedum spathulifolium*), which was not identified within the Study Area during the site assessment. Because the host plant for this species does not occur and north-facing slopes are absent from the Study Area, this species is unlikely to occur.

4.3.3 Critical Habitat

A review of the background literature showed that the Study Area is located within unit SNM-1 of CRLF critical habitat (USFWS 2010a). Projects which affect critical habitat are required to address impacts to that habitat to prevent loss of functionality or value for the species. During consultation, effects to critical habitat will require prescribed minimization measures and/or mitigation to maintain or enhance habitat suitability for the species.

4.3.4 Wildlife Corridors

The Study Area is surrounded by contiguous habitat composed of coyote brush scrub, coastal scrub, interspersed by small patches of grassland and forest. Topographically, the Study Area is located above two small natural canyons on the hillslope. The Study Area is currently used as a dispersal corridor by CRLF as evidenced by the presence of a young-of-year within the mapped wetland portions of the Study Area. The canyons just downhill of the Study Area may also serve to naturally funnel wildlife through the area when moving between surrounding habitats. Therefore, the Study Area serves as a wildlife corridor for dispersing CRLF, and may be used by other species as they travel between habitats, using cover provided by the small canyons.

5.0 SUMMARY

Two sensitive biological communities were identified within the Study Area. One special-status plant species was found to occur within the Study Area. Two special-status wildlife species are present in the Study Area and three special-status wildlife species were determined to have a moderate to high potential to occur within the Study Area. The following sections discuss potential agency consultation requirements to implement the proposed Project work.

5.1 Biological Communities

The Study Area contains two sensitive biological communities associated with potentially federal and state jurisdictional wetlands: arroyo willow thicket wetland and seasonal emergent wetland, which are summarized in Section 5.2 below. All remaining biological communities within the Study Area are not considered sensitive under CEQA.

5.2 Potentially Federal and State Jurisdictional Wetlands and "Other Waters"

The Study Area contains 0.02 acre of arroyo willow thicket wetland and 0.06 acre of seasonal emergent wetland. Wetlands are potentially within the jurisdiction of the Corps under Section 404 of the Clean Water Act, the RWQCB under the Porter Cologne Act and Section 401 of the Clean Water Act, and the CCC under the Coastal Act. Permits from these agencies may be required for work within or affecting wetlands and open water habitats. Recommendations to avoid or minimize impacts to sensitive biological communities are provided in Section 6.0 of this report.

5.3 Special-Status Species

5.3.1 Special-Status Plant Species

Approximately 328 individuals of San Mateo tree lupine were observed within the survey area. Following the initial December 2017 site visits, the Study Area was determined to have moderate or high potential to support 12 special-status plant species, including bent-flowered fiddleneck, Brewer's calandrinia, Oakland star-tulip, western leatherwood, California bottle-brush grass, Marin checker lily, Point Reyes horkelia, coast iris, white-rayed pentachaeta, Oregon polemonium, two-fork clover, and San Francisco owl's-clover; however, none of these species were observed during focused special-status plant surveys on April 10 and May 26, 2017 and are therefore assumed not present within the Study Area. Recommendations to avoid or minimize impacts to San Mateo tree lupine are included in Section 6.4 of this report.

5.3.2 Special-Status Wildlife Species

Two special-status wildlife species have been observed in the Study Area including: San Francisco dusky-footed woodrat and CRLF. The Study Area has moderate or high potential to support three additional special-status wildlife species including: Costa's hummingbird, Allen's hummingbird, and olive-sided flycatcher. In addition, the Study Area has potential to support common nesting birds protected by the Migratory Bird Treaty Act. Activities that result in the direct removal of active nests or disturbance to nesting birds sufficient to result in the abandonment of active nests would be considered a significant impact under the CEQA and a violation of the Migratory Bird Treaty Act and the California Fish and Game Code. Recommendations to avoid or minimize impacts to special-status wildlife species are included in Section 6.4 of this report.

5.3.3 Critical Habitat

The Study Area is located within CRLF critical habitat. Recommendations to avoid or minimize impacts to special-status wildlife species are included in Section 6.4 of this report.

5.3.4 Wildlife Corridors

The Study Area functions as a wildlife corridor. Recommendations to avoid or minimize impacts to wildlife corridors are included in Section 6.4 of this report.

6.0 POTENTIAL IMPACTS, RECOMMENDED AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

The Study Area contains two biological communities considered sensitive under the CEQA, including 0.02 acre of arroyo willow thicket wetland and 0.06 acre of seasonal emergent wetland.

One special-status plant species was observed within the Study Area: San Mateo tree lupine.

Two special-status wildlife species were determined to be present in the Study Area: San Francisco dusky-footed woodrat and CRLF. The Study Area may also provide potential habitat for three special-status wildlife species: Costa's hummingbird, Allen's hummingbird, and olive-sided flycatcher. In addition, the Study Area has potential to host common birds protected by the Migratory Bird Treaty Act.

Potential impacts to these communities and species (BIO IMPACT; Figure 8), as well as proposed avoidance, minimization, and mitigation measures (BIO MM), are provided in detail to follow. Potential impacts were analyzed using the framework provided in Appendix G of the CEQA Guidelines. Based on this framework, the Project is determined to have a potentially significant impact to biological resources if it may:

- 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 CDFG or USFWS

- 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 CDFG or USFWS

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

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

The following sections provide an analysis of potential impacts using the framework outlined above, as well as recommended avoidance and minimization measures to reduce potential impacts and mitigation measures for unavoidable impacts.

6.1 General Avoidance and Minimization Measures

To reduce the potential for impacts to sensitive communities and special-status species, the following general best management practices (BMPs) are recommended for implementation. Implementation of these general BMPs, in combination with the species- and habitat-specific measures provided in the subsequent sections, will minimize adverse impacts:

- Appropriate perimeter erosion and sediment control measures (i.e. silt fencing, straw waddles) shall be installed around any stockpiles of soil or other materials which could be transported by rainfall or other flows in order to reduce the possibility of soil erosion and sediments flowing into natural habitats.

- All access, staging, and work areas shall be delineated with orange construction fencing, or similar, and all work activities shall be limited to these areas.

- All access, staging, and work areas shall be the minimum size necessary to conduct the work.

- All staging, maintenance, and storage of construction equipment shall be performed in a manner to preclude any direct or indirect discharge of fuel, oil, or other petroleum products into the Study Area. No other debris, rubbish, soil, silt, sand, or other construction-related materials or wastes shall be allowed to enter into or be placed where they may be washed by rainfall or runoff into wetland areas. All such debris and waste shall be picked-up daily and shall be properly disposed of at an appropriate facility. If a spill of fluid materials occurs, the area shall be cleaned and contaminated materials disposed of properly. The affected spill area shall be restored to its natural condition.

- Disturbance or removal of vegetation shall not exceed the minimum necessary to conduct the work.

- Given that the Project proposes to allow excavated areas to revegetate naturally, certified weed-free erosion control natural fiber blankets shall be used to stabilize disturbed soils.

- Stockpiles of soil or other materials that can be blown by wind shall be covered when not in active use.

- All trucks hauling soil, sand, and other loose materials shall be covered.

Impacts within Proposed Excavation Areas:
Sensitive Communities:
- <0.01 ac. of Arroyo Willow Thicket Wetland
- 0.03 ac. of Seasonal Emergent Wetland

Study Area (24.41 ac.)

Proposed Excavation Areas (0.22 ac.)

Proposed Stockpile Area (0.35 ac.)

Sensitive Communities

Arroyo Willow Thicket Wetland (0.02 ac.)

Seasonal Emergent Wetland (0.06 ac.)

Non-Sensitive Communities

Arroyo Willow Thickets (0.46 ac.)

Coyote Brush Scrub (12.67 ac.)

Disturbed Coastal Scrub (6.68 ac.)

Douglas Fir Forest (3.17 ac.)

Ruderal/ Developed (1.35 ac.)

wra
ENVIRONMENTAL CONSULTANTS

Half Moon Bay Gun Club

San Mateo County, California

Figure 8.

Impacts to Biological Communities within the Study Area

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Map Prepared Date: 4/5/2018
Map Prepared By: mrochelle
Base Source: Feb 2015 Aerial
Data Source(s): WRA

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6.2 Biological Communities

The Study Area does not contain riparian habitat or sensitive natural communities other than the potentially jurisdictional wetlands discussed in Section 6.3, below, and areas that contain San Mateo tree lupine are discussed in Section 6.4.1, below. As such, no impacts to riparian habitat or sensitive natural communities are expected to occur as a result of the project. Therefore, no mitigation for riparian habitat or sensitive natural communities is proposed.

6.3 Potentially Federal and State Jurisdictional Wetlands

Federally protected wetlands and non-wetland waters subject to jurisdiction by the Corps under Section 404 of the Clean Water Act within the Study Area are limited to 0.02 acre of arroyo willow thicket wetland and 0.06 acre of seasonal emergent wetland. A jurisdictional wetland delineation has been performed as part of this BRE and should be submitted to the Corps and CCC for verification. The proposed Project has the potential to temporarily impact wetlands potentially subject to jurisdiction by the Corps, the RWQCB, and the CCC.

6.3.1 Wetlands

The Project has been designed to the maximum extent feasible to avoid impacts wetlands. However, the purpose of the Project is to remediate lead-contaminated soil, and given that the contaminated soil occurs in portions of these wetland features, impacts to these features will be unavoidable. Consequently, the Project will result in approximately 1,100 square feet (0.03 acre) of temporary impact to seasonal emergent wetlands and approximately 50 square feet (less than 0.01 acre) of arroyo willow thicket wetlands as a result of the excavation of approximately 300 cubic yards of contaminated soils. However, excavation will not affect the hydrological sources (upslope seeps) of the wetlands, and the excavated areas will not be filled after the contaminated soil is removed. As a result, the existing wetlands will be deeper and remain inundated for a greater duration than what currently occurs.

In some areas, the excavation of contaminated soils will also occur outside of but adjacent to both arroyo willow thicket wetlands present in the Study Area; however, the adjacent excavation will be downslope of these features and will not affect their hydrology. In addition, arroyo willow, the dominant species in these wetlands, can have a deep taproot, and the shallow adjacent excavation is unlikely to have a substantial effect on them. Where excavation occurs in non-adjacent areas upslope of arroyo willow thicket wetland (“AW-2” in Appendix D), it will not impact the hydrological source of this feature.

BIO IMPACT 1

The Project will temporarily impact approximately 1,100 square feet (0.03 acre) of seasonal emergent wetlands and approximately 50 square feet (less than 0.01 acre) of arroyo willow thicket wetlands as a result of the excavation of approximately 300 cubic yards of contaminated soils. The wetlands will refill naturally during the rainy season from existing hydrological sources (runoff and natural seepage).

BIO MM 1

Any discharges of dredged or fill material into jurisdictional waters of the United States shall be in conformance with a permit issued by the Corps pursuant to Section 404 of the Clean Water Act, a water quality certification issued by the RWQCB pursuant to Section 401 of the Clean Water Act, and Coastal Development Permit (CPD) by the CCC pursuant to the Coastal Act prior to any grading or construction activities that may impact jurisdictional areas. Therefore, securing a Section 404 permit, Section 401 water quality certification, and CPD including compliance with the federal and state "no net loss of wetlands" policy shall be required for the proposed project. The avoidance, minimization, and mitigation measures required by those permits shall be implemented. Mitigation for impacts to wetlands shall require creation or restoration of wetlands at a minimum of a 1:1 ratio for the impacted area, creation and/or restoration of wetlands that would provide equivalent biological function, purchase of wetland credits at a mitigation bank, or some combination of these actions. Furthermore, during the application process, the Project proponent shall coordinate with the Corps, RWQCB, and CCC to confirm that all proposed mitigation ratios and planned restoration activities are adequate to achieve a no net loss of wetland functions and services determination. Per the terms of the project permits, monitoring shall be required for impacted wetlands to ensure no weed infestations occur as a result of the project activities.

With the implementation of the mitigation measures associated with BIO IMPACT 1, including the general BMPs listed in Section 6.1, adverse effects to sensitive biological communities will be mitigated to less than significant.

6.4 Special-Status Species

6.4.1 Special-Status Plant Species

Of the 79 special-status plant species known to occur in the vicinity of the Study Area, one was observed within the Study Area: San Mateo tree lupine. San Mateo tree lupine is a disturbance-adapted species, as evidenced by the fact that it was only observed in disturbed areas such as roadsides, old roadbeds, and where periodic, long-term vegetation clearing has occurred. Nearly all San Mateo tree lupine individuals occur in the disturbed coastal scrub community. No individuals occur within the excavation area footprints; although one individual occurs near the southwestern excavation area. San Mateo tree lupine occurs in abundance in the disturbed coastal scrub surrounding the stockpile area and in the northern portion of the stockpile footprint and the stockpile footprint has been relocated and reduced in size to avoid the maximum amount of San Mateo tree lupine individuals. Potential impacts to this species and recommended avoidance, minimization, and mitigation measures are provided in the following section.

BIO IMPACT 2

The Project has the potential to impact San Mateo tree lupine during vegetation removal, excavation, and general ground-disturbing activities. The soil stockpile footprint was shifted from the original project design to the north within the portion of disturbed coastal scrub biological community that contains less individuals of San Mateo tree lupine to avoid the greatest extent of San Mateo tree lupine individuals that would be temporarily, directly impacted. The Project has potential to temporarily, directly impact approximately less than one percent of the San Mateo tree lupine individuals observed within the survey area (1 individual within the stockpiling area out of the 328 individuals observed total) from the temporary stockpiling of excavated materials. However, an abundance of additional San Mateo tree lupine individuals exist within the greater vicinity of the Study Area. Project activities may potentially damage or kill San Mateo tree lupine individuals.

BIO MM 2

The disturbance associated with the stockpile is expected to be temporary and low-intensity. Given the disturbance-adapted nature of this species and the adjacent, abundant seed source, San Mateo tree lupine is expected to recolonize the area after Project activity is completed. The following avoidance and minimization measures are recommended to reduce environmental impacts to less than significant under CEQA:

- A temporary protective barrier or sheeting shall be placed on the ground in the location of the stockpiling area to minimize disturbance the existing substrates and seedbank during temporary stockpiling efforts to avoid contamination from the stockpiled materials.

- The extent of the stockpiling area and construction access routes in areas with known populations of San Mateo tree lupine should be delineated with orange construction flagging to avoid incidental, direct impacts from construction equipment access and stockpiling.

- The size, limit, and duration of the stockpiling area shall be minimized to the extent possible to reduce temporary disturbance to San Mateo tree lupine individuals.

- Post-construction monitoring of any project-related impacted habitat shall ensure that San Mateo tree lupine recolonizes into areas where it currently occurs. Monitoring shall occur for up to three years following the completion of project work or until the area demonstrates a trajectory of San Mateo tree lupine re-establishment of similar density to pre-construction conditions.

With the implementation of the mitigation measures associated with BIO IMPACT 2, including the general BMPs listed in Section 6.1, adverse effects to special-status plant species will be mitigated to less than significant.

6.4.2 Special-Status Wildlife Species

Sixty special-status wildlife species are known to occur within the vicinity of the Study Area. Two special-status wildlife species were determined to be present in the Study Area: San Francisco

dusky-footed woodrat and CRLF. Three special-status wildlife species were determined to have a moderate or high potential to occur within the Study Area: Costa's hummingbird, Allen's hummingbird, and olive-sided flycatcher. In addition, the Study Area has potential to host common birds protected by the Migratory Bird Treaty Act and California Fish and Game Code. Potential impacts to these species and recommended avoidance, minimization, and mitigation measures are provided in the following sections.

BIO IMPACT 3

The Project has the potential to impact San Francisco dusky-footed woodrats during vegetation removal, excavation, or general ground disturbing activities by the removal of stick houses. These activities may potentially cause injury to or the death of San Francisco dusky-footed woodrat individuals.

BIO MM 3

A pre-construction survey for woodrat houses shall be conducted by a qualified biologist within 30 days prior to the start of work.

Based on the results of the pre-construction survey, if woodrat houses are present in the work area, a qualified biologist shall implement the following measures:

- Any woodrat houses identified in the work area shall be dismantled by hand under the supervision of a qualified biologist.

- If young are encountered during the dismantling process, the material shall be placed back on the house, and the house will remain undisturbed for 14 days to give the young time to mature and leave the nest. After 14 days, nest dismantling shall begin again. Once fully deconstructed, any material removed shall be moved to suitable adjacent areas that will not be impacted by project activities and the materials shall be scattered.

With the implementation of the mitigation measures associated with BIO IMPACT 3, including the general BMPs listed in Section 6.1, adverse effects to San Francisco dusky-footed woodrats will be mitigated to less than significant.

BIO IMPACT 4

The Project may affect special-status and non-special-status native birds that are protected by the Migratory Bird Treaty Act and California Fish and Game Code. Potential impacts to these species and their habitats could occur during the removal of vegetation or during ground-disturbing activities. These activities could result in the direct removal or destruction of active nests or may create audible, vibratory, and/or visual disturbances that cause birds to abandon active nests.

BIO MM 4

In compliance with the Migratory Bird Treaty Act a survey for active bird nests shall be conducted by a qualified biologist no more than 14 days prior to the start of Project activities (vegetation

removal, grading, or other ground-disturbing activities) during the nesting season (February 1 through August 31). The survey shall be conducted in a sufficient area around the work site to identify the location and status of any nests that could potentially be directly or indirectly affected by Project activities. Based on the results of the pre-construction breeding bird survey, a qualified biologist shall include the following measures:

- If active nests of protected species are found within Project impact areas or close enough to these areas to affect nesting success, a work exclusion zone shall be established around each nest by a qualified biologist. Established exclusion zones shall remain in place until all young in the nest have fledged or the nest otherwise becomes inactive (e.g. due to predation). Appropriate exclusion zone sizes vary dependent upon bird species, nest location, existing visual buffers, ambient sound levels, and other factors; an exclusion zone radius may be as small as 25 feet (for common, disturbance-adapted species) or as large as 250 feet or more for raptors. Exclusion zone size may also be reduced from established levels if supported with nest monitoring by a qualified biologist indicating that work activities are not adversely impacting the nest.

With the implementation of the mitigation measures listed under BIO AMM 4, including the measures listed in Section 6.1, adverse effects to special-status and nesting birds will be mitigated to less than significant.

BIO IMPACT 5

The Project has the potential to impact CRLF, which is listed as threatened under the ESA. The only type of habitat for this species within the Study Area is dispersal habitat. Dispersal habitat would only be occupied during certain times of the year (i.e. during the end of the wet season) therefore; the species is likely only occasionally present. However, if Project activities occur during that season, the Project may have the potential to kill or injure CRLF during vegetation removal, soil excavation, or by collisions with Project vehicles. If Project activities occur outside of dispersal events, the likelihood of CRLF being present goes down significantly, however animals may still be harassed by Project activities. Therefore, the Project has the potential to result in injury or death of CRLF if work occurs during dispersal events, but is only likely to cause harassment if work occurs outside of the rainy season.

The Project will result in temporary impacts to CRLF dispersal habitat, but will result in the permanent removal of toxic contaminated soils, will expand the availability of aquatic habitat and increase the area, depth, and inundation duration of the existing wetland habitats within the Study Area. The only constructed feature of the Project will be a drainage improvement to an existing road that allows access by land managers beyond the Study Area. A French drain will be installed, made of large cobbles that will allow water to freely flow beneath the road surface to avoid ponding on the road. This feature will minimize habitat suitability within the road, thereby minimizing opportunities for vehicle strikes in areas where CRLF have been observed. This feature would increase habitat quality by minimizing habitat on the roadway, while still maintaining water levels within adjacent wetlands. No barriers to dispersal (e.g. walls or paved areas) will be constructed. Given these parameters, the Project is expected to result in a net benefit to CRLF, and would not be considered an adverse effect to CRLF Critical Habitat.

BIO MM 5

Consultation with the USFWS shall be initiated in order to obtain coverage for harassment during remediation and road improvement work. Injury or death of individuals is not expected during construction, as the species is only present during the rainy season. Following consultation, mitigation measures will be outlined in the resulting biological opinion. The mitigation measures listed below have been obtained from the Programmatic Biological Opinion for CRLF and are similar to those that will be required during the Project.

- The qualifications of any designated biologist(s) shall be submitted to the USFWS for review and written approval at least thirty (30) calendar days prior to the start of work.

- Within 24 hours prior to initial ground disturbance, a preconstruction survey for CRLF shall be conducted. If any life stage of the species is found, the approved biologist will capture and move any individuals to an appropriate relocation site.

- The approved biologist shall conduct an education training for employees working on the Project. Personnel will be required to attend the training that would cover topics such as identification and legal protection of the species, as well as project specific avoidance and minimization measures.

- The approved biologist(s) shall be onsite during all activities that may result in take of CRLF including vegetation removal, initial ground disturbance, and spoils hauling.

- The number of access routes, construction areas, equipment staging, storage, parking, and stockpile areas will be minimized to the extent possible.

- To minimize temporary habitat disturbances, project-related vehicle traffic shall be restricted to established roads, and construction areas. Project-related vehicles shall observe a 20-mile per hour speed limit within construction areas.

- All construction equipment shall be maintained to prevent leaks of fuels, lubricants, or other toxic fluids.

- In order to avoid attracting predators of CRLF, all trash shall be deposited in covered or closed trash containers that are removed from the Project site regularly.

- Any restoration and re-vegetation work for temporary effects shall be implemented using native California plant species.

- Plastic monofilament netting (erosion control matting, or wrapping around wattles), or similar material in any form shall not be used on the Project in order to avoid entangling, strangling, or trapping CRLF.

- Construction shall be limited to the dry season (April 15 to October 15) to avoid impacting CRLF when they are most likely to use the Study Area as a migration corridor.

- No construction activities shall occur during rain events or within 24-hours following a rain event.

- Construction activities shall cease no less than 30 minutes before sunset and shall not begin again prior to no less than 30 minutes after sunrise.

Impacts to CRLF habitat will be temporary and are expected to result in permanent enhancements to CRLF Critical Habitat. The Project is considered self-mitigating and therefore no compensatory mitigation is proposed.

With the implementation of the mitigation measures associated with BIO IMPACT 5, including the general BMPs listed in Section 6.1, adverse effects to CRLF and CRLF Critical Habitat will be minimized to less than significant.

6.4.3 Critical Habitat

The Project will excavate toxic soils from the Study Area, leaving behind depressions within the Project footprint. These depressions will naturally fill with water from a seep, creating small pools. Such pools are likely to increase habitat suitability and functionality for dispersing CRLF by increasing water depth and thereby allowing for enhanced predator avoidance (Ford et al 2013). No structures such as walls, fences, buildings, paved roads or other migratory barriers are going to be constructed as part of the Project. In addition, the Project will conduct formal consultation with the USFWS to obtain species and project specific avoidance measures. After remediation is completed, control of the property will pass to the Golden Gate National Recreation Area.

Given the net positive effect by the Project on CRLF critical habitat, and after incorporating measures prescribed during formal consultation with the USFWS as well as general BMPs listed in Section 6.1, any potential impacts would be mitigated to less than significant.

6.4.4 Wildlife Corridors

The Project is expected to increase suitability of the area as migratory habitat for CRLF. No migratory barriers to other species such as walls, fences, buildings, paved roads etc. are to be constructed as part of the Project. Additionally, ultimate control of the property will pass to the Golden Gate National Recreation Area. Therefore, the enhancement of habitat and preservation of the land will have a net positive effect on use of the area as a wildlife corridor.

It is expected that with the inclusion of general BMPs listed in Section 6.1, no adverse effects to wildlife corridors are expected and any potential impacts would be mitigated to less than significant.

6.5 Local and Regional Conservation Plans

The Project is not located in an area that is covered by any Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, the Project does not pose any impacts on a local or regional level. No additional mitigation related to local or regional conservation plans is necessary.

7.0 CONCLUSION

Based on the Project description, the following permits are anticipated to be necessary:

- Corps Section 404 Nationwide Permit
- Consultation with the USFWS
- RWQCB Section 401 Certification
- CCC Coastal Development Permit

The Study Area contains sensitive biological communities including 0.02 acre of arroyo willow thicket wetland and 0.06 acre of seasonal emergent wetland. The proposed Project has been designed to minimize both temporary and permanent impacts to biological resources. Temporary impacts are anticipated for less than 0.01 acre of arroyo willow thicket wetland and 0.03 acre of seasonal wetland. Temporary impacts will be mitigated by applying for the regulatory permits listed above and implementing the required measures included in those permits.

One special-status plant species was observed within the Study Area: San Mateo tree lupine. Two special-status wildlife species were determined to be present within the Study Area: San Francisco dusky-footed woodrat and CRLF. Three special-status wildlife species were determined to have the potential to occur within the Study Area: olive-sided flycatcher, Costa's hummingbird, and Allen's hummingbird. In addition, the Study Area has potential to host common birds protected by the Migratory Bird Treaty Act and California Fish and Game Code. With the implementation of the general BMPs listed in Section 6.1 and the habitat- or species-specific avoidance and minimization measures described in Sections 6.2 through 6.4, the Project is expected to minimize adverse impacts to sensitive biological communities and special-status species.

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APPENDIX A

PROJECT PLANS

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REMEDIAL SOIL EXCAVATION FOR THE FORMER HALF MOON BAY GUN CLUB

EL GRANADA, SAN MATEO COUNTY, CALIFORNIA

PREPARED FOR

PENINSULA OPEN SPACE TRUST

PREPARED BY

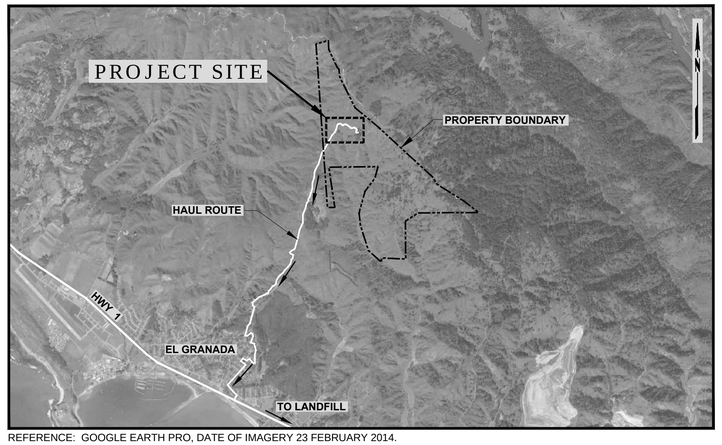
EKI Environment & Water, Inc.

REFERENCE: TRACED FROM THE THOMAS GUIDE BAY AREA METRO STREET GUIDE, 2014.

VICINITY MAP

7.5 5 2.5 0 7.5 15

(APPROXIMATE SCALE IN MILES)

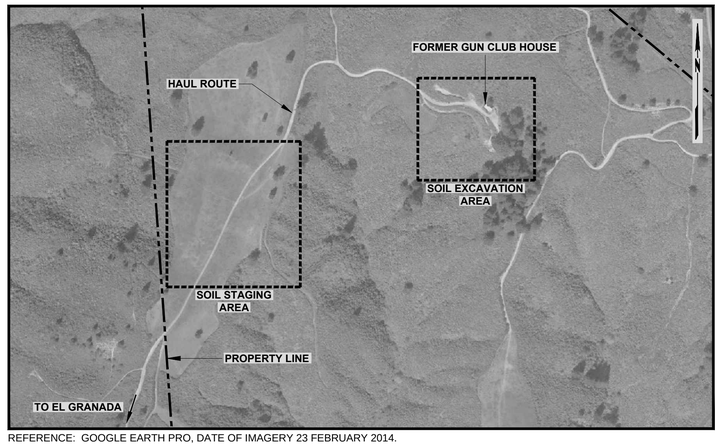


REFERENCE: GOOGLE EARTH PRO, DATE OF IMAGERY 23 FEBRUARY 2014.

SITE LOCATION MAP/HAUL ROUTE

4,000 0 4,000 8,000

(APPROXIMATE SCALE IN FEET)



REFERENCE: GOOGLE EARTH PRO, DATE OF IMAGERY 23 FEBRUARY 2014.

SITE ACCESS MAP

400 0 400 800

(APPROXIMATE SCALE IN FEET)

NOT FOR CONSTRUCTION

LIST OF DRAWINGS

GENERAL NOTES

1. VERTICAL ELEVATIONS ARE IN FEET, LOCAL ARBITRARY DATUM SURVEYED BY MCCLEOD, MARCH 2015.
2. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICES ALERT AT 1-800-227-2000 OR 811 A MINIMUM OF 2 WORKING DAYS PRIOR TO DIGGING. KEEP NOTIFICATION TICKET CURRENT.
3. WORK ON THIS PROJECT MAY BE HAZARDOUS. ALL ON-SITE PERSONNEL SHALL HAVE RECEIVED HEALTH AND SAFETY MONITORING AND TRAINING AS REQUIRED UNDER LAWS AND REGULATIONS, INCLUDING OSHA AND CAL OSHA STANDARDS.

LEGEND AND REFERENCE SYMBOLS

	INITIAL EXCAVATION AREA
	DENSE VEGETATION
	PROPERTY BOUNDARY
DU-10 (0.5)	DEPTH OF INITIAL EXCAVATION IN FEET OF DU-10
	TREE WITH DIAMETER GREATER THAN 12 INCHES
130	EXISTING GROUND CONTOUR
	TEMPORARY SURVEYOR BENCHMARK
	TOP OR TOE OF SLOPE
SS	SANITARY SEWER LINE
SD	STORM DRAIN LINE
?	SUSPECTED UNDERGROUND LINE
	EROSION CONTROL WATTLE
A A'	CROSS SECTION MARKER

ABBREVIATIONS

CONC	CONCRETE
CY	CUBIC YARD
DOT	DEPARTMENT OF TRANSPORTATION
DU	DECISION UNIT
DWG	DRAWING
(E)	EXISTING
ELEV	ELEVATION
ER	EDGE OF ROAD
FF	FINISH FLOOR
FT MSL	FEET ABOVE MEAN SEA LEVEL
GB	GRADE BREAK
IN	INCHES
INV	INVERT
(N)	NEW
NO.	NUMBER
PM	PAINT MARK
PVC	POLYVINYL CHLORIDE
SD	STORM DRAIN
SF	SQUARE FOOT
SHT	SHEET
TEMP	TEMPORARY
TYP	TYPICAL

REGISTERED PROFESSIONAL ENGINEER — JOHN THOMAS DE WITT — C 55468 — EXP. 12-31-18 — CIVIL — STATE OF CALIFORNIA

ekI environment & water
577 AIRPORT BOULEVARD, SUITE 500
BURLINGAME, CALIFORNIA 94010-5306
(650) 292-9100 • FAX (650) 552-9012

REMEDIAL SOIL EXCAVATION FOR THE FORMER HALF MOON BAY GUN CLUB
EL GRANADA, SAN MATEO COUNTY, CALIFORNIA

TITLE SHEET, VICINITY MAP, SITE LOCATION MAP, AND SITE ACCESS MAP

REV	DESCRIPTION	APPRD	DATE
2	ECO PERMIT SET	JDW	12/15/17
1	BID SET	JDW	5/13/16

DATE: MAY 2016
SCALE: AS SHOWN
DRAWN: CCR
DESIGNED: RTC
APPROVED: JDW
JOB NO.: B40003.01

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SHEET NUMBER
G-1
1 OF 5

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NOTES

1. CONTRACTOR TO TRACE AND MARK STORM DRAIN AND SANITARY SEWER LINES PRIOR TO PERFORMING ANY EXCAVATION.
2. PAINT MARKED ("PM") LINES AND AREAS REPRESENT LOCATIONS WHERE UTILITY SURVEYORS NOTED ANOMALIES USING GROUND PENETRATING RADAR.

TEMPORARY BENCHMARK
3/4" IRON PIPE WITH CAP
"MACLEOD CONTROL"
ELEV. 526.15
ASSUMED DATUM

WOOD TARGET

HAUL ROUTE

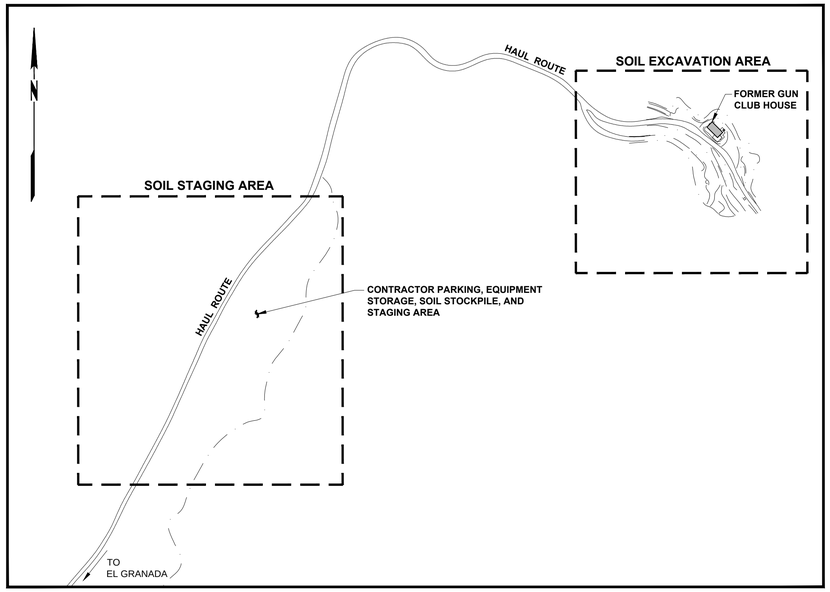
DENSE VEGETATION (TYP.)

(E) BUILDING

(E) CONCRETE PAD AND TABLE

TEMPORARY BENCHMARK
3/4" IRON PIPE WITH CAP
"MACLEOD CONTROL"
ELEV. 500.00
ASSUMED DATUM

TEMPORARY BENCHMARK
3/4" IRON PIPE WITH CAP
"MACLEOD CONTROL"
ELEV. 504.67
ASSUMED DATUM



KEY MAP

200 0 200 400
(APPROXIMATE SCALE IN FEET)

EXISTING CONDITIONS

20 0 20 40
(APPROXIMATE SCALE IN FEET)

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REMEDIAL SOIL EXCAVATION FOR THE FORMER HALF MOON BAY GUN CLUB
EL GRANADA, SAN MATEO COUNTY, CALIFORNIA

EXISTING CONDITIONS

REV	DESCRIPTION	APPR'D	DATE
2	ECO PERMIT SET	JDW	12/15/17
1	BID SET	JDW	5/13/16

DATE: MAY 2016
SCALE: AS SHOWN
DRAWN: CCR
DESIGNED: RTC
APPROVED: JDW
JOB NO.: B40003.01

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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

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EXP. 12-31-18
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER
G-2
2 OF 5

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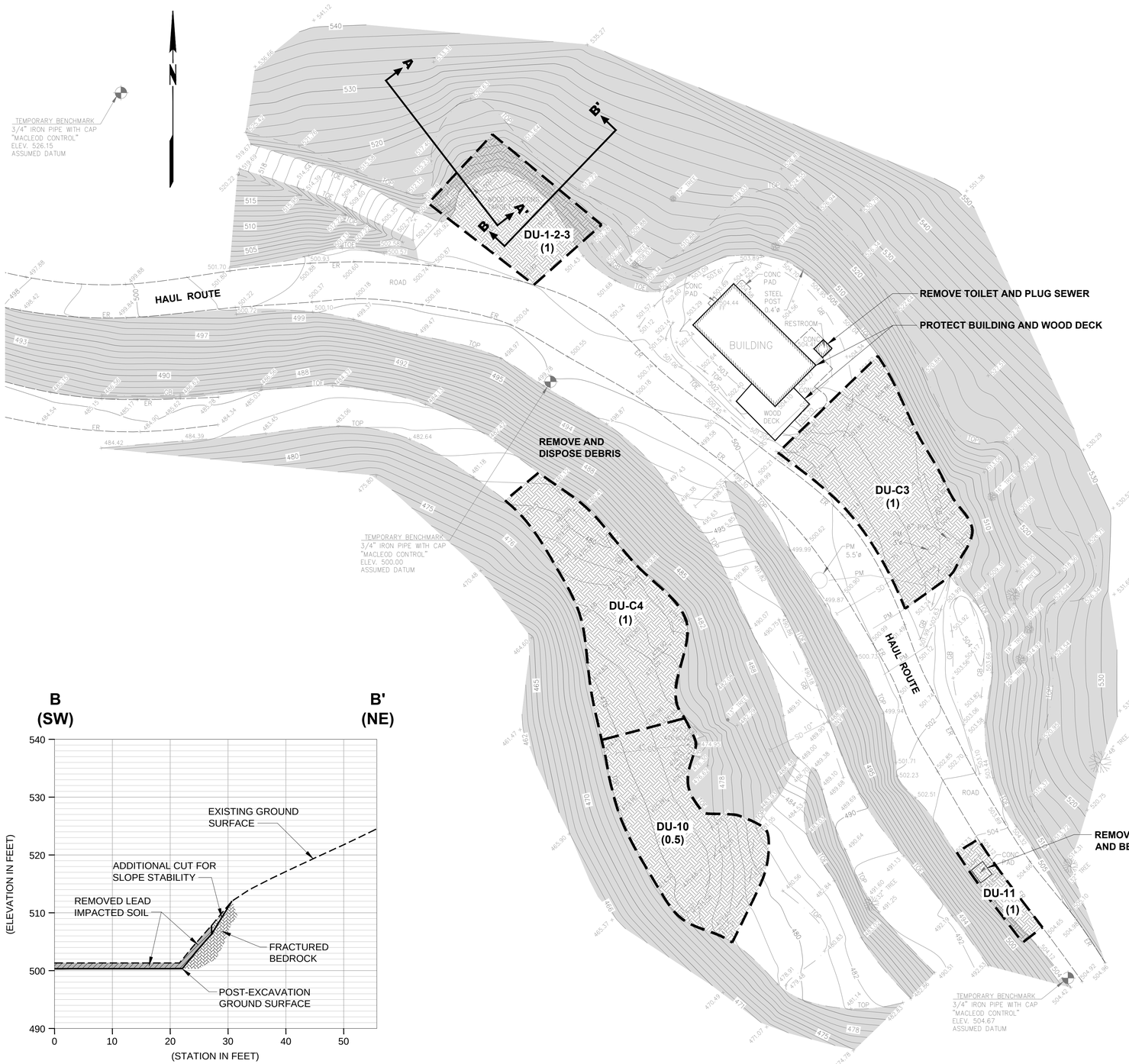
NOTES

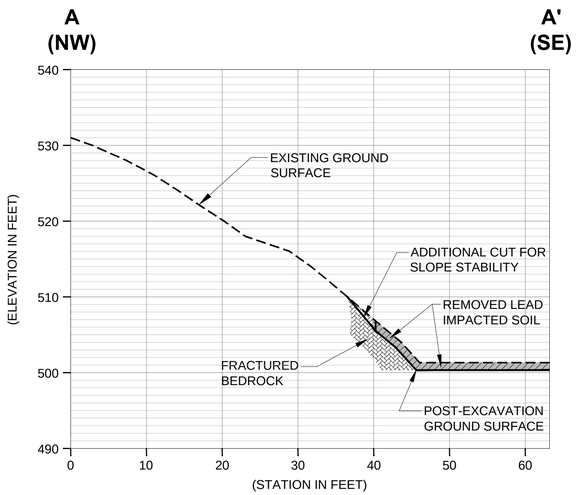
1. CONTRACTOR MAY BE DIRECTED BY ENGINEER TO PERFORM OVER-EXCAVATION LATERALLY AND VERTICALLY BEYOND THE INITIAL LIMITS AND DEPTHS BASED ON THE RESULTS OF CONFIRMATION SAMPLING PERFORMED BY ENGINEER.
2. CORNERS OF INITIAL EXCAVATION AREAS TO BE MARKED IN THE FIELD BY ENGINEER.
3. ALIGNMENT OF EXISTING STORM DRAIN AND SANITARY SEWER LINES SHALL BE TRACED AND MARKED BY CONTRACTOR PRIOR TO EXCAVATION WORK.
4. CONTRACTOR SHALL STOCKPILE SOIL FROM EACH EXCAVATION AREAIN A SEPARATELY LINED STOCKPILE AREA FOR SAMPLING PRIOR TO OFF-SITE TRANSPORTATION AND DISPOSAL.
5. SEE SHEET G-4 FOR EROSION CONTROL REQUIREMENTS.
6. CONTROL DUST PER SPECIFICATIONS.
7. CONTRACTOR SHALL DISPOSE OF EXCAVATED MATERIALS IN ACCORDANCE WITH LAWS AND REGULATIONS. DISPOSE HAZARDOUS WASTES IN APPROPRIATELY PERMITTED DISPOSAL FACILITIES.
8. OWNER WILL NOTIFY THE PUBLIC OF HAULING ACTIVITIES 10 DAYS IN ADVANCE OF WORK.
9. HAULING SHALL BE LIMITED TO THE HOURS OF 9 AM AND 3 PM MONDAY THROUGH FRIDAY. TRUCKS MAY NOT PARK ON RESIDENTIAL STREETS.
10. CONTRACTOR WILL REPAIR ANY DAMAGE TO PUBLIC ROADS CAUSED BY HAULING ACTIVITY AS DIRECTED BY COUNTY INSPECTOR.

EXCAVATION IDENTIFICATION	CUT FILL CALCULATIONS			ANTICIPATED DISPOSAL CLASSIFICATION
	CUT		FILL (CY)	
	AREA (SF)	VOLUME (CY)		
DU-1-2-3	1,500	56	-	RCRA HAZ
DU-C3	2,600	96	-	NON-HAZ
DU-C4	2,500	93	-	NON-HAZ
DU-10	2,400	44	-	NON-HAZ
DU-11	300	11	-	NON-RCRA HAZ
TOTAL	9,300	300	0	-



EXCAVATION PLAN

(APPROXIMATE SCALE IN FEET)



CROSS-SECTION A - A'

(APPROXIMATE SCALE IN FEET)

CROSS-SECTION B - B'

(APPROXIMATE SCALE IN FEET)

NOT FOR CONSTRUCTION

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REMEDIAL SOIL EXCAVATION FOR THE FORMER HALF MOON BAY GUN CLUB
EL GRANADA, SAN MATEO COUNTY, CALIFORNIA

EXCAVATION PLAN AND CROSS-SECTIONS

REV	DESCRIPTION	APPRD	DATE
2	ECO PERMIT SET	JDW	12/15/17
1	BID SET	JDW	5/13/16

DATE: MAY 2016
SCALE: AS SHOWN
DRAWN: CCR
DESIGNED: RTC
APPROVED: JDW
JOB NO.: B40003.01

VERIFY SCALE
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SHEET NUMBER
G-3
3 OF 5

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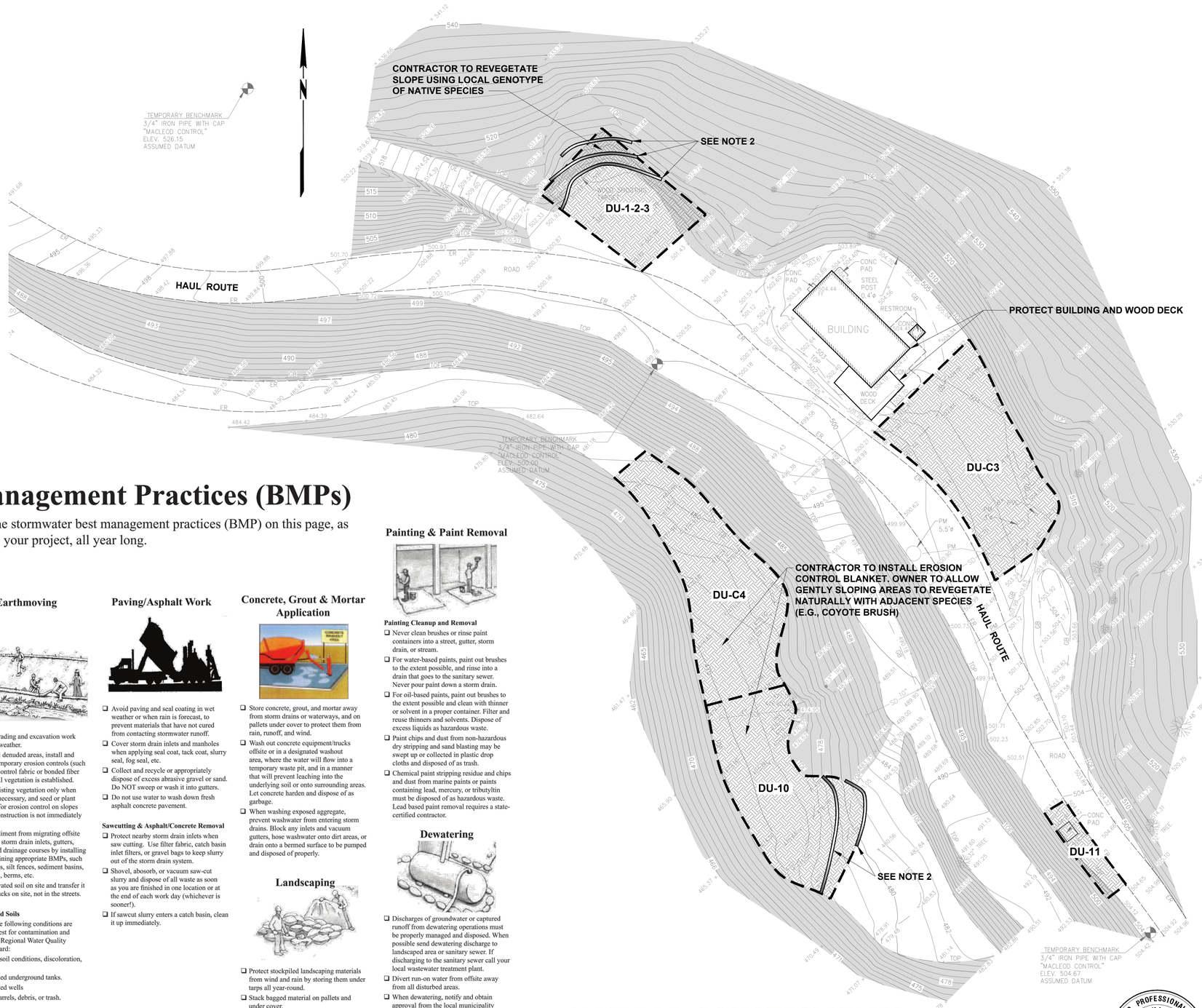
NOTES

STOCKPILE AREA EROSION CONTROL

1. CONTRACTOR SHALL STOCKPILE EXCAVATED MATERIAL WITH A BOTTOM LINER OF VISQUEEN AND A PERIMETER BERM, PER THE SPECIFICATIONS. DO NOT REMOVE EXISTING VEGETATION IN STOCKPILE AREA.
2. COVER ALL STOCKPILES WHEN NOT IN USE TO LIMIT EROSION AND SEDIMENT GENERATION. ANCHOR COVER AS NEEDED TO LIMIT WIND EROSION.

RESTORATION REQUIREMENTS

1. PLACE EROSION CONTROL BLANKETS OVER EXCAVATION AREAS AFTER ENGINEER'S CONFIRMATION SAMPLES INDICATE EXCAVATION IS COMPLETE.
2. SEED DISTURBED AREAS PRIOR TO PLACING EROSION CONTROL BLANKETS WITH NATIVE CALIFORNIA SEED MIXTURES, PER THE SPECIFICATIONS.
3. INSTALL SEED-FREE WATTLES ALONG CONTOURS OF SLOPED EXCAVATION AREAS AT 10-FT INTERVALS.
4. SEE SHEET D-1 FOR ROAD DRAINAGE PLAN.



NOT FOR CONSTRUCTION

EROSION CONTROL PLAN

20 0 20 40
(APPROXIMATE SCALE IN FEET)

SAN MATEO COUNTYWIDE
Water Pollution Prevention Program
Clean Water. Healthy Community.

Construction Best Management Practices (BMPs)

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

Materials & Waste Management

Non-Hazardous Materials

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

Hazardous Materials

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

Waste Management

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

Construction Entrances and Perimeter

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

Equipment Management & Spill Control

Maintenance and Parking

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

Spill Prevention and Control

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

Earthmoving

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

Contaminated Soils

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

Paving/Asphalt Work

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

Sawcutting & Asphalt/Concrete Removal

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

Concrete, Grout & Mortar Application

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

Landscaping

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

Painting & Paint Removal

Painting Cleanup and Removal

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

Dewatering

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

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

ekl environment & water
577 AIRPORT BOULEVARD, SUITE 500
BURLINGAME, CALIFORNIA 94010-5306
(650) 292-9100 • FAX (650) 552-9012

REMEDIAL SOIL EXCAVATION FOR THE FORMER HALF MOON BAY GUN CLUB
EL GRANADA, SAN MATEO COUNTY, CALIFORNIA

EROSION CONTROL PLAN

REV	DESCRIPTION	APPRD	DATE
2	ECO PERMIT SET	JDW	12/15/17
1	BID SET	JDW	5/13/16

DATE: MAY2016
SCALE: AS SHOWN
DRAWN: CCR
DESIGNED: RTC
APPROVED: JDW
JOB NO.: B40003.01

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

REGISTERED PROFESSIONAL ENGINEER
JOHN THOMAS DE WITT
C 55468
EXP. 12-31-18
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER
G-4
4 OF 5

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ROAD DRAINAGE PLAN

REMEDIAL SOIL EXCAVATION FOR THE FORMER HALF MOON BAY GUN CLUB

EL GRANADA, SAN MATEO COUNTY, CA

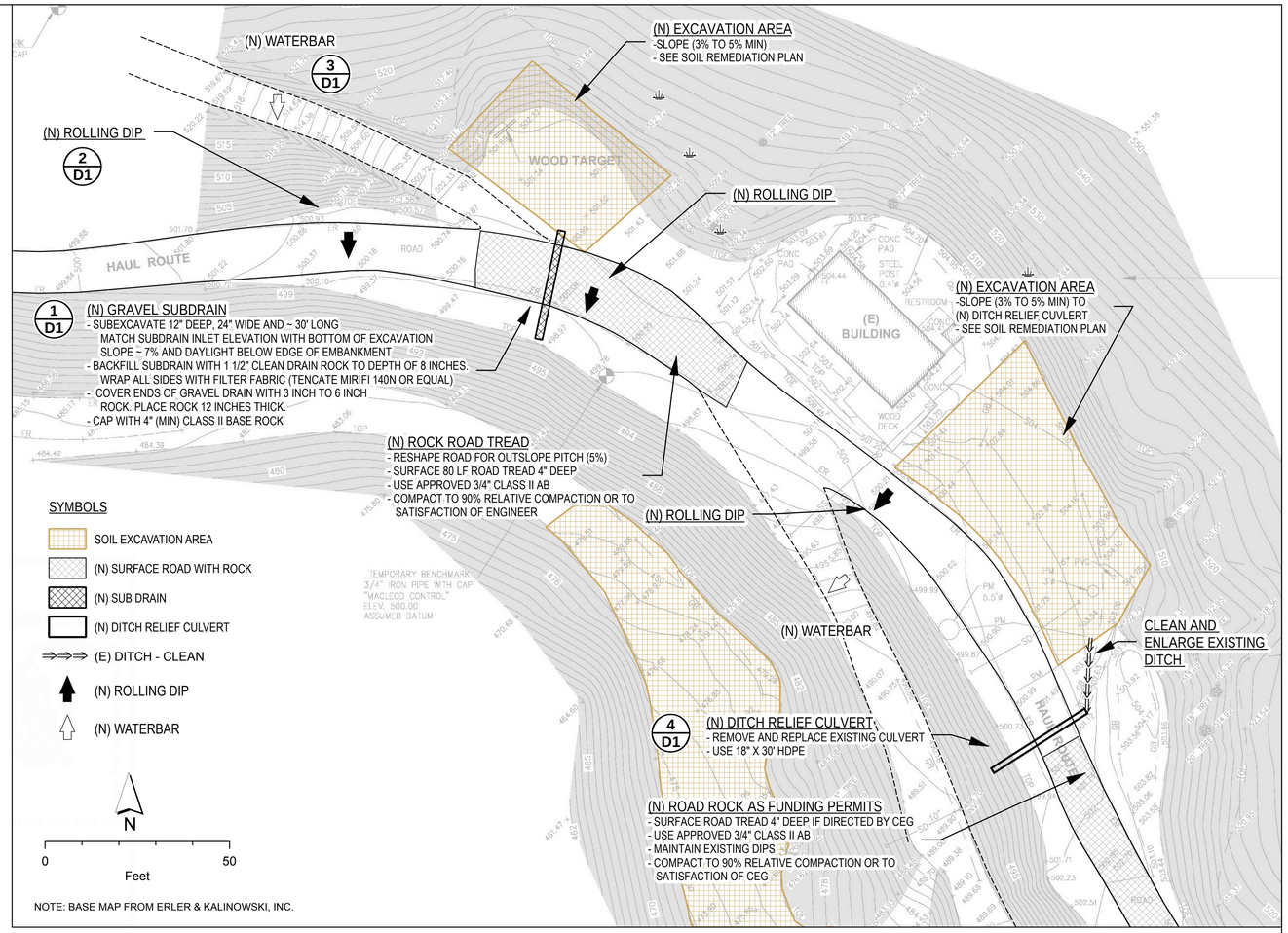
PLAN DESCRIPTION

THESE DRAINAGE PLANS PROVIDE DETAILS TO UPGRADE DRAINAGE CONTROL ALONG THE EXISTING ACCESS ROAD. THE PURPOSE OF THE WORK IS TO IMPROVE THE DRAINAGE OF SURFACE RUNOFF AT THE SITE TO REDUCE THE POTENTIAL FOR ROAD RELATED EROSION, FOLLOWING THE REMEDIAL SOIL EXCAVATION WORK ASSOCIATED WITH LEAD FRAGMENT CLEANUP. THE PROPOSED DRAINAGE IMPROVEMENTS INCLUDE:

1) REMOVE AND REPLACE 1 EXISTING DITCH RELIEF CULVERT
2) INSTALL 3 ROLLING DIPS ON THE MAIN ROAD
3) INSTALL 1 GRAVEL SUB DRAIN
4) INSTALL 2 WATERBARS ON SIDE ROADS
5) ROCK SURFACE 80+ LF OF ROADWAY
6) ROCK ADDITIONAL ROADWAY AS FUNDING PERMITS
7) SLOPE ROAD SURFACE TO DRAIN.

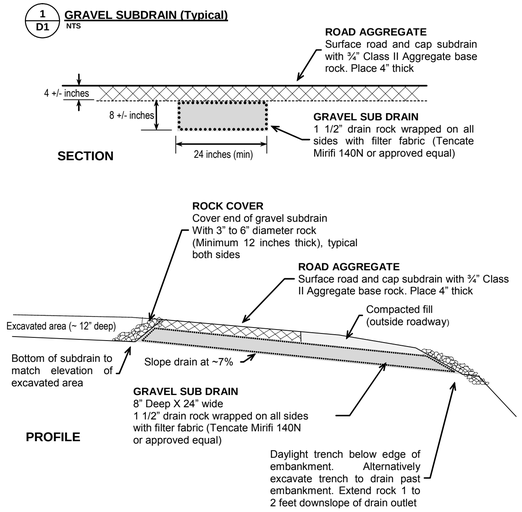
GENERAL NOTES

1) THIS SHEET INDICATES GENERAL AND TYPICAL DETAILS SPECIFIC TO ROAD DRAINAGE IMPROVEMENTS AFTER IMPLEMENTATION OF REMEDIAL SOIL EXCAVATION WORK.
2) "POST" SHALL BE PENINSULA OPEN SPACE TRUST, THE "CEG" SHALL BE CERTIFIED ENGINEERING GEOLOGIST, TIMOTHY C. BEST, AND THE "CONTRACTOR" SHALL BE AN INDEPENDENT CONTRACTOR RETAINED BY POST TO PERFORM THE WORK DESCRIBED HEREIN.
3) THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL OF THE PROJECT DOCUMENTS WITH THE CONDITIONS FOUND AT THE SITE AND SHALL VERIFY EXISTING GRADES, ELEVATIONS AND CONDITIONS PRIOR TO COMMENCING WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE CEG AND SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK. IF IT IS FOUND THAT FIELD CONDITIONS ARE NOT AS SHOWN ON THE PLANS, THE CONTRACTOR MUST MAKE REVISIONS AND/OR ADJUSTMENTS TO THE SATISFACTION OF THE CEG PRIOR TO FURTHER WORK.
4) THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE CONSTRUCTION AREA DURING CONSTRUCTION AND SHALL PROVIDE NECESSARY SAFETY MEASURES THAT COMPLY WITH ALL STATE AND LOCAL SAFETY ORDINANCES. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
5) THE CONTRACTOR SHALL NOTIFY THE CEG A MINIMUM OF 7 DAYS PRIOR TO COMMENCEMENT OF WORK AND A MINIMUM OF 4 DAYS IN ADVANCE OF REQUIRED INSPECTIONS.
6) ALL ROAD DRAINAGE WORK SHALL BE SUBJECT TO OBSERVATION, TESTING AND APPROVAL BY THE CEG.
7) THE CONTRACTOR SHALL RECOGNIZE THAT THE PLANS USED FOR THE DRAWINGS OF THE WORK MAY DIFFER FROM THE ACTUAL PHYSICAL SITE. DIMENSIONS ARE APPROXIMATE. BEFORE PROCEEDING WITH THE WORK, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CHECK THE SITE IN RELATION TO THE DRAWINGS AND SPECIFICATIONS. REPORT ANY DISCREPANCIES TO POST AND TO THE CEG.
8) AT ALL TIMES DURING PROJECT CONSTRUCTION ACTIVITIES, COPIES OF THE APPROVED FINAL PLANS AND COPIES OF PERMITS SHALL BE MAINTAINED AT THE CONSTRUCTION JOB SITE, AND ALL PERSONS INVOLVED WITH THE CONSTRUCTION SHALL BE BRIEFED ON THE CONTENT AND MEANING OF EACH PRIOR TO COMMENCEMENT OF CONSTRUCTION
9) THE CEG SHALL REVIEW THE PROJECT PLANS WITH THE CONTRACTOR DURING THE PRE-CONSTRUCTION MEETING. THE CEG SHALL ALSO PROVIDE EARTHWORK OBSERVATIONS PERTAINING TO ROAD DRAINAGE. THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR MISINTERPRETATION OF THE PLANS.
10) REGULATORY AGENCIES MAY REQUIRE A FINAL GRADING COMPLIANCE LETTER. CEG CAN ONLY OFFER THIS LETTER IF CALLED TO THE SITE TO OBSERVE AND TEST, AS NECESSARY, ANY GRADING AND EXCAVATION OPERATIONS FROM THE START OF CONSTRUCTION. THE CONTRACTOR MUST SCHEDULE EARTHWORK TESTING AND OBSERVATION. PLEASE CONTACT: TIM BEST (831) 425-5832 (OFFICE) (831) 332-7791 (MOBILE).



NOTE: BASE MAP FROM ERLER & KALINOWSKI, INC.

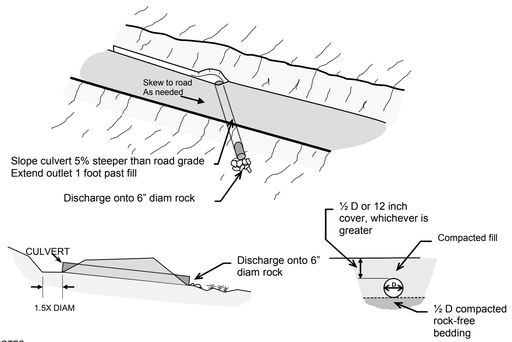
1 D1 GRAVEL SUBDRAIN (Typical) NTS



NOTES

- Subexcavate 12" deep 24" wide trench across road
- Match subdrain inlet elevation with bottom of excavation
- Slope ~ 7%
- Daylight outlet below edge of embankment or alternatively excavate trench to extend past embankment
- -Backfill subdrain with 1 ½ inch clean drain rock to depth of 8 inches. Wrap all sides with filter fabric (Mirifi 140 or approved equal)
- Cover gravel drain with 4" (min) road aggregate (within roadway) or compacted fill (outside roadway).
- Cover ends of gravel drain with 3 inch to 6 inch rock. Place rock 12 inches thick.
- CEG to verify drain location and depth prior to work

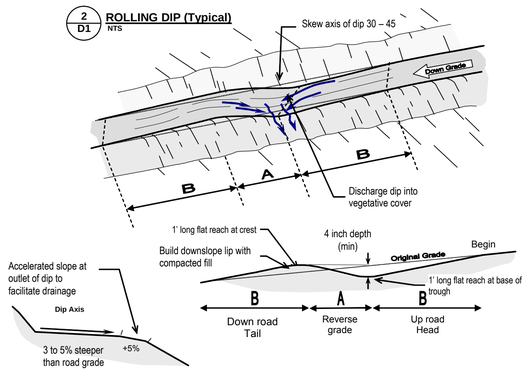
4 D1 DITCH RELIEF CULVERT (Typical) NTS



NOTES

- Ditch relief culvert shall be installed at flagged locations or as identified on plans.
- Culvert shall be 18 inch diameter smooth bore, double wall HDPE (ASTM D3350 and AASHTO M294, Type S) unless otherwise specified.
- The culvert shall be placed with a gradient 5% steeper than that of the road unless otherwise specified in plans. Culverts shall extend a minimum of 1 foot beyond base of road fill.
- The width of trenches shall permit satisfactory joining and thorough tamping of the backfill material.
- The culvert bed shall be clean and free of large woody debris and large rocks. Unsuitable material shall be replaced with selected granular material and compacted to obtain uniform bed.
- Where rock, hardpan, or other unyielding material is encountered, it shall be removed below the culvert grade for a depth of at least 1 foot and a width of at least 2 feet plus the culvert diameter. This material shall be replaced with selected compacted fill.
- Culvert trenches must be properly shored and braced during construction or laid back at an appropriate angle to prevent sloughing and caving at sidewalls. Contractor must comply with all CAL OSHA and local safety requirements and codes dealing with excavations and trenches.
- Onsite soils are suitable for culvert backfill. The backfill shall have no rocks greater than 3 inches in any dimension placed closer than 1 foot to the culvert. Backfill shall be adequately compacted throughout the entire process to approximately 95 percent ASTM 1557 or to the satisfaction of the CEG. During placement and compaction of fill, the moisture content of the materials being placed shall be maintained.
- Compacted fill coverage shall be minimum ½ pipe diameter or 12 inches, whichever is greater.
- Armor culvert inlet and outlet to top of pipe using 6" diameter rock. Apply rock to form apron to satisfaction of CEG. Discharge culvert onto 6 inch diameter rock.
- Specifications are intended only as guidelines; modifications may be made in the field by the CEG.

2 D1 ROLLING DIP (Typical) NTS

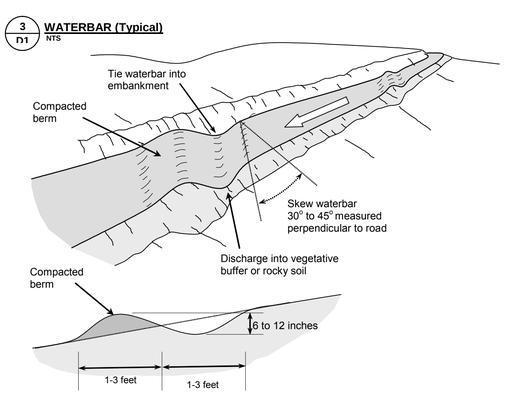


ROAD GRADE (%)	TROUGH	A: REVERSE GRADE		B: UP ROAD HEAD DOWN ROAD TAIL	
	Minimum depth	Distance from trough axis to downroad crest (ft)	Grade	Distance from up-road start of rolling dip to trough axis (ft)	Grade (%)
<5%	4 inches	12	3%	12	8%
5% - 10%		12	3%	15	10%

NOTES

- The dip shall be a minimum of 6 inches deep and incorporate a 1 foot long flat reach at the base of the trough (unless otherwise directed).
- Dip outlets shall be located to drain into areas with adequate sediment filter quality and non-erodible material such as rock, slash, brush, etc. Where specified, the bottom of the outfall of the dip will be surface-rocked.
- Where natural side slopes exceed 50%, fill shall not be pushed over the slope at the dip outlet.

3 D1 WATERBAR (Typical) NTS



NOTES

- Identify waterbar locations that take advantage of natural drainage features and minimize the amount of disturbance required for waterbar construction.
- All waterbars shall begin at the intersection of the roadbed surface and the cut slope and run the entire width of the road surface prism.
- Waterbar length shall not exceed 1.5 times the width of the road surface.
- Acceptable waterbars shall be skewed 30 to 45 degrees measured perpendicular to road.
- All waterbars shall have free-flowing outlets with minimum 5% grade in the bottom of the channel that discharges onto vegetative surfaces or less erodible material where possible.
- Native materials used to construct the constructed downslope berm shall be compacted with equipment to minimize wear resulting from trespass and/or administrative use traffic.
- Waterbar depth measured from the bottom of the waterbar channel to the top of the compacted berm must be between 6 and 12 inches high.

TIMOTHY C. BEST, CEG
ENGINEERING GEOLOGY AND HYDROLOGY
1000 Columbia Street, Santa Cruz, CA 95060
(831) 425 5832 (831) 425 5809 (fax)

PROFESSIONAL GEOLOGIST — TIMOTHY C. BEST No. 1682 CERTIFIED ENGINEERING GEOLOGIST — STATE OF CALIFORNIA

PROJECT:
REMEDIAL SOIL EXCAVATION FOR THE FORMER HALF MOON BAY GUN CLUB
EL GRANADA, SAN MATEO COUNTY, CA
PREPARED FOR PENINSULA OPEN SPACE TRUST, PALO ALTO, CA

TITLE: ROAD DRAINAGE PLAN

REVISIONS:

No.	Date	Description

DATE: DECEMBER 18, 2017
PROJECT: SMRCD-DARKGULCH-775
DRAWN BY: TB
CHECKED: TB

SHEET NUMBER
D-1

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APPENDIX B

LIST OF OBSERVED PLANT AND WILDLIFE SPECIES WITHIN THE STUDY AREA

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Appendix B-1. Plant Species Observed in the Study Area on December 22, 2016, and April 10 and May 26, 2017.

Family	Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Adoxaceae	*Sambucus racemosa* var. *racemosa*	Red elderberry	native	shrub	-	-	FACU
Alliaceae	*Allium triquetrum*	White flowered onion	non-native	perennial herb (bulb)	-	-	-
Anacardiaceae	*Toxicodendron diversilobum*	Poison oak	native	vine, shrub	-	-	FACU
Apiaceae	*Angelica hendersonii*	Henderson's angelica	native	perennial herb	-	-	-
Apiaceae	*Conium maculatum*	Poison hemlock	non-native (invasive)	perennial herb	-	Moderate	FACW
Apiaceae	*Foeniculum vulgare*	Fennel	non-native (invasive)	perennial herb	-	High	-
Apiaceae	*Heracleum maximum*	Common cowparsnip	native	perennial herb	-	-	FACW
Apiaceae	*Sanicula crassicaulis*	Pacific sanicle	native	perennial herb	-	-	-
Apiaceae	*Torilis arvensis*	Field hedge parsley	non-native (invasive)	annual herb	-	Moderate	-
Aquifoliaceae	*Ilex aquifolium*	Holly	non-native (invasive)	tree, shrub	-	Moderate	FACU
Araceae	*Arum italicum*	Italian lords and ladies	non-native	perennial herb	-	-	-

Family	Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Araceae	*Zantedeschia aethiopica*	Callalily	non-native (invasive)	perennial herb	-	Limited	OBL
Araliaceae	*Hedera helix*	English ivy	non-native (invasive)	vine, shrub	-	High	FACU
Asteraceae	*Achillea millefolium*	Yarrow	native	perennial herb	-	-	FACU
Asteraceae	*Anaphalis margaritacea*	Pearly everlasting	native	perennial herb	-	-	FACU
Asteraceae	*Anthemis cotula*	Dog fennel	non-native	annual herb	-	-	FACU
Asteraceae	*Artemisia douglasiana*	California mugwort	native	perennial herb	-	-	FAC
Asteraceae	*Baccharis pilularis* ssp. *consanguinea*	Coyote brush	native	shrub	-	-	-
Asteraceae	*Carduus pycnocephalus* ssp. *pycnocephalus*	Italian thistle	non-native (invasive)	annual herb	-	Moderate	-
Asteraceae	*Centaurea melitensis*	Tocalote	non-native (invasive)	annual herb	-	Moderate	-
Asteraceae	*Cirsium vulgare*	Bullthistle	non-native (invasive)	perennial herb	-	Moderate	FACU
Asteraceae	*Erigeron canadensis*	Canada horseweed	native	annual herb	-	-	FACU

Family	Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Asteraceae	*Eriophyllum staechadifolium*	Lizard tail	native	perennial herb	-	-	-
Asteraceae	*Gamochaeta ustulata*	Featherweed	native	perennial herb	-	-	-
Asteraceae	*Helenium puberulum*	Sneezeweed	native	perennial herb	-	-	FACW
Asteraceae	*Helminthotheca echioides*	Bristly ox-tongue	non-native (invasive)	annual, perennial herb	-	Limited	FAC
Asteraceae	*Hypochaeris radicata*	Hairy cats ear	non-native (invasive)	perennial herb	-	Moderate	FACU
Asteraceae	*Lactuca saligna*	Willow lettuce	non-native	annual herb	-	-	UPL
Asteraceae	*Lactuca virosa*	Poison wild lettuce	non-native	perennial herb	-	-	-
Asteraceae	*Logfia gallica*	Narrowleaf cottonrose	non-native	annual herb	-	-	-
Asteraceae	*Madia sativa*	Coastal tarweed	native	annual herb	-	-	-
Asteraceae	*Matricaria discoidea*	Pineapple weed	native	annual herb	-	-	FACU
Asteraceae	*Pseudognaphalium californicum*	Ladies' tobacco	native	annual, perennial herb	-	-	-
Asteraceae	*Pseudognaphalium luteoalbum*	Jersey cudweed	non-native	annual herb	-	-	FAC

Family	Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Asteraceae	*Pseudognaphalium* sp.	Cudweed	native	perennial herb	-	-	-
Asteraceae	*Psilocarphus oregonus*	Woolly marbles	native	annual herb	-	-	OBL
Asteraceae	*Silybum marianum*	Milk thistle	non-native (invasive)	annual, perennial herb	-	Limited	-
Asteraceae	*Soliva sessilis*	South american soliva	non-native	annual herb	-	-	FACU
Asteraceae	*Sonchus asper* ssp. *asper*	Sow thistle	non-native	annual herb	-	-	FAC
Asteraceae	*Sonchus oleraceus*	Sow thistle	non-native	annual herb	-	-	UPL
Asteraceae	*Symphyotrichum chilense*	Pacific aster	native	perennial herb	-	-	FAC
Asteraceae	*Symphyotrichum subspicatum*	-	-	-	-	-	FACW
Asteraceae	*Taraxacum officinale*	Red seeded dandelion	non-native	perennial herb	-	-	FACU
Athyriaceae	*Athyrium filix-femina* var. *cyclosorum*	Western lady fern	native	fern	-	-	FAC
Blechnaceae	*Woodwardia fimbriata*	Western chain fern	native	fern	-	-	OBL
Boraginaceae	*Myosotis latifolia*	Wide leaved forget me not	non-native (invasive)	perennial herb	-	Limited	-

Family	Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Boraginaceae	*Phacelia nemoralis* var. *nemoralis*	Woods phacelia	native	perennial herb	-	-	-
Brassicaceae	*Barbarea orthoceras*	Winter cress	native	perennial herb	-	-	FACW
Brassicaceae	*Brassica rapa*	Common mustard	non-native (invasive)	annual herb	-	Limited	FACU
Brassicaceae	*Cardamine hirsuta*	Hairy bitter cress	non-native	annual herb	-	-	FACU
Brassicaceae	*Hirschfeldia incana*	Short-podded mustard	non-native (invasive)	perennial herb	-	Moderate	-
Brassicaceae	*Nasturtium officinale*	Watercress	native	perennial herb (aquatic)	-	-	OBL
Brassicaceae	*Raphanus sativus*	Radish	non-native (invasive)	annual, biennial herb	-	Limited	-
Caprifoliaceae	*Lonicera hispidula*	Pink honeysuckle	native	vine, shrub	-	-	FACU
Caprifoliaceae	*Lonicera involucrata*	Coast twinberry	native	shrub	-	-	FAC
Caprifoliaceae	*Symphoricarpos albus* var. *laevigatus*	Snowberry	native	shrub	-	-	FACU
Caryophyllaceae	*Cerastium glomeratum*	Large mouse ears	non-native	annual herb	-	-	UPL
Caryophyllaceae	*Silene gallica*	Common catchfly	non-native	annual herb	-	-	-

Family	Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Caryophyllaceae	*Spergularia rubra*	Purple sand spurry	non-native	annual, perennial herb	-	-	FAC
Cornaceae	*Cornus sericea*	American dogwood	native	shrub	-	-	FACW
Crassulaceae	*Crassula connata*	Sand pygmy weed	native	annual herb	-	-	FAC
Cucurbitaceae	*Marah fabacea*	California man-root	native	perennial herb, vine	-	-	-
Cyperaceae	*Carex subbracteata*	Small bract sedge	native	perennial grasslike herb	-	-	FACW
Cyperaceae	*Carex tumulicola*	Split awn sedge	native	perennial grasslike herb	-	-	FACU
Cyperaceae	*Cyperus eragrostis*	Tall cyperus	native	perennial grasslike herb	-	-	FACW
Dennstaedtiaceae	*Pteridium aquilinum* var. *pubescens*	Western bracken fern	native	fern	-	-	FACU
Dipsacaceae	*Dipsacus sativus*	Indian teasel	non-native (invasive)	biennial herb	-	Moderate	-
Dryopteridaceae	*Dryopteris arguta*	Wood fern	native	fern	-	-	-
Dryopteridaceae	*Polystichum munitum*	Western sword fern	native	fern	-	-	FACU
Ericaceae	*Arbutus menziesii*	Madrono	native	tree	-	-	-

Family	Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Ericaceae	*Vaccinium ovatum*	Evergreen huckleberry	native	shrub	-	-	UPL
Euphorbiaceae	*Euphorbia peplus*	Petty spurge	non-native	annual herb	-	-	-
Euphorbiaceae	*Mercurialis annua*	Annual mercury	non-native	annual herb	-	-	-
Fabaceae	*Acacia melanoxylon*	Blackwood acacia	non-native (invasive)	tree	-	Limited	-
Fabaceae	*Genista monspessulana*	French broom	non-native (invasive)	shrub	-	High	-
Fabaceae	*Lathyrus vestitus*	Common pacific pea	native	perennial herb	-	-	-
Fabaceae	*Lotus corniculatus*	Bird's foot trefoil	non-native	perennial herb	-	-	FAC
Fabaceae	*Lupinus arboreus* var. *eximius*	San Mateo tree lupine	native	perennial evergreen shrub	Rank 3.2	-	-
Fabaceae	*Lupinus bicolor*	Lupine	native	annual, perennial herb	-	-	-
Fabaceae	*Medicago lupulina*	Black medick	non-native	annual, perennial herb	-	-	FAC

Family	Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Fabaceae	*Medicago polymorpha*	California burclover	non-native (invasive)	annual herb	-	Limited	FACU
Fabaceae	*Trifolium angustifolium*	Narrow leaved clover	non-native	annual herb	-	-	-
Fabaceae	*Trifolium campestre*	Hop clover	non-native	annual herb	-	-	-
Fabaceae	*Trifolium dubium*	Shamrock	non-native	annual herb	-	-	UPL
Fabaceae	*Trifolium glomeratum*	Clustered clover	non-native	annual herb	-	-	-
Fabaceae	*Trifolium repens*	White clover	non-native	perennial herb	-	-	FACU
Fabaceae	*Trifolium subterraneum*	Subterranean clover	non-native	annual herb	-	-	-
Fabaceae	*Vicia benghalensis*	Purple vetch	non-native	annual herb, vine	-	-	-
Fabaceae	*Vicia hirsuta*	Hairy vetch	non-native	annual herb, vine	-	-	-
Fabaceae	*Vicia sativa*	Spring vetch	non-native	annual herb, vine	-	-	FACU
Fabaceae	*Vicia villosa*	Hairy vetch	non-native	annual herb, vine	-	-	-
Fagaceae	*Chrysolepis chrysophylla*	Golden chinquapin	native	tree, shrub	-	-	-

Family	Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Fagaceae	*Notholithocarpus densiflorus* var. *densiflorus*	Tanoak	native	tree, shrub	-	-	-
Fagaceae	*Quercus agrifolia*	Coast live oak	native	tree	-	-	-
Garryaceae	*Garrya elliptica*	Coast silk tassel	native	tree, shrub	-	-	-
Geraniaceae	*Erodium botrys*	Big heron bill	non-native	annual herb	-	-	FACU
Geraniaceae	*Erodium cicutarium*	Coastal heron's bill	non-native (invasive)	annual herb	-	Limited	-
Geraniaceae	*Geranium dissectum*	Wild geranium	non-native (invasive)	annual herb	-	Limited	-
Grossulariaceae	*Ribes sanguineum*	Flowering currant	native	shrub	-	-	UPL
Iridaceae	*Sisyrinchium bellum*	Blue eyed grass	native	perennial herb	-	-	FACW
Juncaceae	*Juncus bufonius*	Common toad rush	native	annual grasslike herb	-	-	FACW
Juncaceae	*Juncus effusus* ssp. *pacificus*	Pacific rush	native	perennial grasslike herb	-	-	FACW
Juncaceae	*Juncus hesperius*	Coast or bog rush	native	perennial grasslike herb	-	-	-

Family	Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Juncaceae	*Juncus patens*	Rush	native	perennial grasslike herb	-	-	FACW
Juncaceae	*Juncus phaeocephalus*	Brown headed rush	native	perennial grasslike herb	-	-	FACW
Lamiaceae	*Clinopodium douglasii*	Yerba buena	native	perennial herb	-	-	FACU
Lamiaceae	*Marrubium vulgare*	White horehound	non-native (invasive)	perennial herb	-	Limited	FACU
Lamiaceae	*Mentha pulegium*	Pennyroyal	non-native (invasive)	perennial herb	-	Moderate	OBL
Lamiaceae	*Rosmarinus officinalis*	Rosemary	non-native	shrub	-	-	-
Lamiaceae	*Salvia leucantha*	Mexican sage	non-native	shrub	-	-	-
Lamiaceae	*Stachys bullata*	Southern hedge nettle	native	perennial herb	-	-	-
Lauraceae	*Umbellularia californica*	California bay	native	tree	-	-	FAC
Laxmanniaceae	*Cordyline australis*	Cabbage tree	non-native (invasive)	tree	-	Limited	-
Liliaceae	*Agapanthus africanus*	Lily of the Nile	non-native	perennial herb	-	-	-

Family	Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Linaceae	*Linum bienne*	Flax	non-native	annual herb	-	-	-
Lythraceae	*Lythrum hyssopifolia*	Hyssop loosestrife	non-native (invasive)	annual, perennial herb	-	Limited	OBL
Myrsinaceae	*Lysimachia arvensis*	Scarlet pimpernel	non-native	annual herb	-	-	FAC
Onagraceae	*Epilobium ciliatum*	Slender willow herb	native	perennial herb	-	-	FACW
Orchidaceae	*Epipactis helleborine*	Helleborine	non-native	perennial herb	-	-	FACU
Orobanchaceae	*Bellardia trixago*	Mediterranean lineseed	non-native (invasive)	annual herb	-	Limited	-
Oxalidaceae	*Oxalis corniculata*	Creeping wood sorrel	non-native	perennial herb	-	-	FACU
Oxalidaceae	*Oxalis pes-caprae*	Bermuda buttercup	non-native (invasive)	perennial herb	-	Moderate	-
Oxalidaceae	*Oxalis purpurea*	Purple oxalis	non-native	perennial herb	-	-	-
Papaveraceae	*Eschscholzia californica*	California poppy	native	annual, perennial herb	-	-	-
Phrymaceae	*Mimulus aurantiacus*	Sticky monkeyflower	native	shrub	-	-	FACU

Family	Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Phrymaceae	*Mimulus guttatus*	Yellow monkey flower	native	annual, perennial herb (rhizomatous)	-	-	OBL
Pinaceae	*Pinus radiata*	Monterey pine	native	tree	Rank 1B.1*	-	-
Pinaceae	*Pseudotsuga menziesii* var. *menziesii*	Douglas fir	native	tree	-	-	FACU
Plantaginaceae	*Plantago coronopus*	Cut leaf plantain	non-native	annual herb	-	-	FAC
Plantaginaceae	*Plantago lanceolata*	Ribwort	non-native (invasive)	perennial herb	-	Limited	FAC
Plantaginaceae	*Plantago subnuda*	Mexican plantain	native	perennial herb	-	-	FACW
Plantaginaceae	*Veronica anagallis-aquatica*	Water speedwell	non-native	perennial herb	-	-	OBL
Poaceae	*Agrostis capillaris*	Colonial bentgrass	non-native	perennial grass	-	-	FAC
Poaceae	*Aira caryophyllea*	Silvery hairgrass	non-native	annual grass	-	-	FACU
Poaceae	*Avena barbata*	Slim oat	non-native (invasive)	annual, perennial grass	-	Moderate	-

Family	Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Poaceae	*Brachypodium distachyon*	Purple false brome	non-native (invasive)	annual, perennial grass	-	Moderate	-
Poaceae	*Briza maxima*	Rattlesnake grass	non-native (invasive)	annual grass	-	Limited	-
Poaceae	*Briza minor*	Little rattlesnake grass	non-native	annual grass	-	-	FAC
Poaceae	*Bromus carinatus* var. *carinatus*	California brome	native	perennial grass	-	-	-
Poaceae	*Bromus commutatus*	Hairy chess, meadow brome	non-native	perennial grass	-	-	-
Poaceae	*Bromus diandrus*	Ripgut brome	non-native (invasive)	annual grass	-	Moderate	-
Poaceae	*Bromus hordeaceus*	Soft chess	non-native (invasive)	annual grass	-	Limited	FACU
Poaceae	*Bromus maritimus*	Maritime brome	native	perennial grass	-	-	-
Poaceae	*Cortaderia jubata*	Andean pampas grass	non-native (invasive)	perennial grass	-	High	FACU
Poaceae	*Cynosurus echinatus*	Dogtail grass	non-native (invasive)	annual grass	-	Moderate	-

Family	Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Poaceae	*Dactylis glomerata*	Orchardgrass	non-native (invasive)	perennial grass	-	Limited	FACU
Poaceae	*Ehrharta erecta*	Upright veldt grass	non-native (invasive)	perennial grass	-	Moderate	-
Poaceae	*Elymus glaucus*	Blue wildrye	native	perennial grass	-	-	FACU
Poaceae	*Festuca bromoides*	Brome fescue	non-native	annual grass	-	-	FACU
Poaceae	*Festuca myuros*	Rattail sixweeks grass	non-native (invasive)	annual grass	-	Moderate	FACU
Poaceae	*Festuca perennis*	Italian rye grass	non-native (invasive)	annual, perennial grass	-	Moderate	FAC
Poaceae	*Gastridium phleoides*	Nit grass	non-native	annual grass	-	-	FACU
Poaceae	*Holcus lanatus*	Common velvetgrass	non-native (invasive)	perennial grass	-	Moderate	FAC
Poaceae	*Hordeum murinum*	Foxtail barley	non-native (invasive)	annual grass	-	Moderate	FACU
Poaceae	*Phyllostachys aurea*	Golden bamboo	non-native	vine	-	-	-

Family	Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Poaceae	*Poa annua*	Annual blue grass	non-native	annual grass	-	-	FAC
Polemoniaceae	*Navarretia squarrosa*	Skunkweed	native	annual herb	-	-	FACU
Polygonaceae	*Persicaria punctata*	Dotted smartweed	native	perennial herb	-	-	OBL
Polygonaceae	*Rumex acetosella*	Sheep sorrel	non-native (invasive)	perennial herb	-	Moderate	FACU
Polygonaceae	*Rumex crispus*	Curly dock	non-native (invasive)	perennial herb	-	Limited	FAC
Polygonaceae	*Rumex pulcher*	Fiddleleaf dock	non-native	perennial herb	-	-	FAC
Polypodiaceae	*Polypodium scouleri*	Leather fern	native	fern	-	-	-
Rhamnaceae	*Ceanothus thyrsiflorus*	Blueblossom	native	tree, shrub	-	-	-
Rhamnaceae	*Frangula californica*	California coffeeberry	native	shrub	-	-	-
Rosaceae	*Drymocallis glandulosa* var. *wrangelliana*	Sticky cinquefoil	native	perennial herb	-	-	FAC
Rosaceae	*Fragaria vesca*	Wild strawberry	native	perennial herb	-	-	UPL
Rosaceae	*Heteromeles arbutifolia*	Toyon	native	shrub	-	-	-
Rosaceae	*Holodiscus discolor*	Oceanspray	native	shrub	-	-	FACU

Family	Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Rosaceae	*Prunus cerasifera*	Cherry plum	non-native (invasive)	tree	-	Limited	-
Rosaceae	*Pyracantha fortuneana*	Chinese firethorn	non-native	shrub	-	-	-
Rosaceae	*Rubus armeniacus*	Himalayan blackberry	non-native (invasive)	shrub	-	High	FAC
Rosaceae	*Rubus parviflorus*	Thimbleberry	native	vine, shrub	-	-	FAC
Rosaceae	*Rubus ursinus*	California blackberry	native	vine, shrub	-	-	FAC
Rubiaceae	*Galium parisiense*	Wall bedstraw	non-native	annual herb	-	-	UPL
Rubiaceae	*Sherardia arvensis*	Field madder	non-native	annual herb	-	-	-
Salicaceae	*Salix lasiolepis*	Arroyo willow	native	tree, shrub	-	-	FACW
Salicaceae	*Salix scouleriana*	Scouler willow	native	tree, shrub	-	-	FAC
Scrophulariaceae	*Scrophularia californica*	California bee plant	native	perennial herb	-	-	FAC
Solanaceae	*Solanum americanum*	White nightshade	native	annual, perennial herb	-	-	FACU
Solanaceae	*Solanum douglasii*	Douglas' nightshade	native	perennial herb	-	-	FAC
Urticaceae	*Urtica dioica*	Stinging nettle	native	perennial herb	-	-	FAC

Family	Scientific Name	Common Name	Origin	Form	Rarity Status[1]	CAL-IPC Status[2]	Wetland Status[3]
Vitaceae	*Parthenocissus inserta*	Woodbine	native	vine, shrub	-	-	FACU

- All species identified using the *Jepson eFlora* [Jepson Flora Project (eds.) 2017]; nomenclature follows *Jepson eFlora* [Jepson Flora Project (eds.) 2017]

*Special-status only within its native range. The Study Area is outside of the native range of this species.

[1]Rarity Status: The CNPS Inventory of Rare and Endangered Plants (CNPS 2017)

FE:	Federal Endangered
FT:	Federal Threatened
SE:	State Endangered
ST:	State Threatened
SR:	State Rare
Rank 1A:	Plants presumed extinct in California
Rank 1B:	Plants rare, threatened, or endangered in California and elsewhere
Rank 2:	Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3:	Plants about which we need more information – a review list
Rank 4:	Plants of limited distribution – a watch list

[2]Invasive Status: California Invasive Plant Inventory (Cal-IPC 2017)

High:	Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.
Moderate:	Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limited-moderate distribution ecologically
Limited:	Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically
Assessed:	Assessed by Cal-IPC and determined to not be an existing current threat

[3]Wetland Status: National List of Plant Species that Occur in Wetlands, California – Arid West (Lichvar et al. 2016)

OBL:	Almost always found in wetlands; >99% frequency
FACW:	Usually found in wetlands; 67-99% frequency
FAC:	Equally found in wetlands and uplands; 34-66% frequency
FACU:	Usually not found in wetlands; 1-33% frequency
UPL:	Almost never found in wetlands; >1% frequency
NL:	Not listed, assumed almost never found in wetlands; >1% frequency
NI:	No information; not factored during wetland delineation

Appendix B-2. Wildlife Species Observed in the Study Area on December 20 and December 22, 2016.

Common Name (status if applicable)	**Species**
MAMMALS	
black-tailed deer	*Odocoileus hemionus columbianus*
cougar	*Puma concolor*
BIRDS	
California scrub jay	*Aphelocoma californica*
chestnut-backed chickadee	*Poecile rufescens*
red-shouldered hawk	*Buteo lineatus*
turkey vulture	*Cathartes aura*
white-crowned sparrow	*Zonotrichia leucophrys*
wrentit	*Chamaea fasciata*
Invertebrates	
cabbage white	*Pieris rapae*
common buckeye	*Junonia coenia*
painted lady	*Vanessa cardui*

APPENDIX C

JURISDICTIONAL DELINEATION DATA SHEETS

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Wetland Determination Data Form - Arid West Region

Project/Site: Half Moon Bay Gun Club | City: Half Moon Bay | County: San Mateo | Sampling Date: 12/22/2016

Applicant/Owner: Peninsula Open Space Trust | State: CA | Sampling Point: **SP01**

Investigator(s): WRA, Inc. - Scott Batiuk, Scott Yarger | Section,Township,Range: 31, 04S, 05W

Landform (hillslope, terrace, etc.): hillslope | Local Relief (concave, convex, none): concave | Slope(%): 2-10

Subregion(LRR): LRR A | Lat: 37.53815514 | Long: -122.4452013 | Datum: WGS 84

Soil Map Unit Name: Rough broken land | NWI classification: N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology | Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology | (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

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

Remarks: Upland SP located in a small patch of arroyo willow in a relatively flat, steep-banked, linear area situated on an otherwise steep slope, downslope of a dirt road. Based on the general trend of the surrounding topography, the topography of the sampled area may be the result of historical excavation. Abundant debris present.

VEGETATION (use scientific names)

TREE STRATUM Plot Size: entire feature	Absolute % cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	70	Yes	FACW
2.			
3.			
4.			
Tree Stratum Total Cover:	70		
SAPLING/SHRUB STRATUM Plot Size: entire feature			
1. *Toxicodendron diversilobum*	5	Yes	FACU
2. *Sambucus racemosa*	5	Yes	FACU
3. *Lonicera involucrata*	1	No	FAC
4.			
Sapling/Shrub Stratum Total Cover:	11		
HERB STRATUM Plot Size: N/A			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Herb Stratum Total Cover:	15		
WOODY VINE STRATUM Plot Size: entire feature			
1. *Rubus ursinus*	15	Yes	FAC
2.			
Woody Vines Total Cover:			

% Bare ground in herb stratum: 10 | % cover of biotic crust: 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 2 (A)

Total number of dominant species across all strata? 4 (B)

% of dominant species that are OBL, FACW, or FAC? 50 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:	
OBL species	x1	
FACW species	x2	
FAC species	x3	
FACU species	x4	
UPL species	x5	
Column Totals (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is </= 3.0[1]
- ☐ Morphological adaptations (provide supporting data in remarks)
- ☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☐ Yes ☒ No

Remarks: 10% leaf litter
The sample point does not meet hydrophytic vegetation indicators.

SOIL

Sampling Point SP01

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[1]	Texture	Remarks
0-2	10YR 2/1	100					sandy loam	
2-6	10YR 4/3	100					sandy loam	fill soil
6-14	10YR 2/1	100					sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- ☐ 1cm 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 Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present ? ☐ **Yes** ☒ **No**

Remarks: The sample point does not meet hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 PLowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ 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 guage, monitoring well, aerial photos, etc.) if available.

Remarks: The sample point does not meet wetland hydrology indicators.

Wetland Determination Data Form - Arid West Region

Project/Site: Half Moon Bay Gun Club | City: Half Moon Bay | County: San Mateo | Sampling Date: 12/22/2016

Applicant/Owner: Peninsula Open Space Trust | State: CA | Sampling Point: **SP02**

Investigator(s): WRA, Inc. - Scott Batiuk, Scott Yarger | Section,Township,Range: 31, 04S, 05W

Landform (hillslope, terrace, etc.): hillslope | Local Relief (concave, convex, none): concave | Slope(%): 10

Subregion(LRR): LRR A | Lat: 37.53851919 | Long: -122.4457273 | Datum: WGS 84

Soil Map Unit Name: Rough broken land | NWI classification: N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology | Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology | (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No

Hydric Soil Present? ☐ Yes ☒ No

Wetland Hydrology Present? ☐ Yes ☒ No

Is the Sampled Area within a Wetland? ☐ **Yes** ☒ **No**

Remarks: Upland SP on a steep slope below a dirt road approximately 100 feet southwest of the Gun Club Building. Athough the feature is dominated by arroyo willow, this species does not appear to be functioning as a hydrophyte, as hydric soil and wetland hydrology indicators are not met, despite the site visit occurring during a period of normal precipitation in the preceding 3-months and a precipitation event totaling 2.06 inches occurring 6 days prior to the site visit. Willows can have deep taproots, and they may be accessing subsurface water at depth lower than that needed to meet wetland conditions.

VEGETATION (use scientific names)

TREE STRATUM Plot Size: 20' radius	Absolute % cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	50	Yes	FACW
2.			
3.			
4.			
Tree Stratum Total Cover:	50		
SAPLING/SHRUB STRATUM Plot Size: N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM Plot Size: 5' radius			
1. *Stachys cf. bullata*	10	Yes	NL
2. *Conium maculatum*	10	Yes	FACW
3. *Scrophularia californica*	10	Yes	FAC
4.			
5.			
6.			
7.			
8.			
Herb Stratum Total Cover:	30		
WOODY VINE STRATUM Plot Size: 10' radius			
1. *Rubus ursinus*	30	Yes	FAC
2. *Toxicodendron diversilobum*	15	No	FACU
Woody Vines Total Cover:	45		

% Bare ground in herb stratum: 5 | % cover of biotic crust: 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 4 (A)

Total number of dominant species across all strata? 5 (B)

% of dominant species that are OBL, FACW, or FAC? 80 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:	
OBL species	x1	
FACW species	x2	
FAC species	x3	
FACU species	x4	
UPL species	x5	
Column Totals (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☒ Dominance Test is >50%

☐ Prevalence Index is </= 3.0[1]

☐ Morphological adaptations (provide supporting data in remarks)

☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☒ Yes ☐ No

Remarks:
60% leaf litter
5% basal willow stems
The sample point meets the Dominance Test hydrophytic vegetation indicator.
Outside of the sample point, but within the same stand of arroyo willow, a large coast live oak is present.

SOIL

Sampling Point SP02

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[1]	Texture	Remarks
0-14	10YR 2/1	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- ☐ 1cm 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 Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present ? ☐ Yes ☒ No

Remarks: Although it is technically possible that the Thick Dark Surface indicator could still be met at SP02 if a deeper pit was dug, nearby wetland sample points with similar soil texture and color and similar vegetation cover contained evident redox concentrations throughout their soil profiles. Furthermore, SP07, an upland sample point that did not meet meet hydrophytic vegetation or wetland hydrology indicators, has a similar soil profile to SP02. In addition, wetland hydrology indicators were not met at SP02. As such, it is assumed that SP02 would not meet the Thick Dark Surface indicator. No other hydric soil indicators were met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 PLowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ 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 guage, monitoring well, aerial photos, etc.) if available.

Remarks: The sample point does not meet wetland hydrology indicators.

Wetland Determination Data Form - Arid West Region

Project/Site: Half Moon Bay Gun Club | City: Half Moon Bay | County: San Mateo | Sampling Date: 12/22/2016

Applicant/Owner: Peninsula Open Space Trust | State: CA | Sampling Point: **SP03**

Investigator(s): WRA, Inc. - Scott Batiuk, Scott Yarger | Section,Township,Range: 31, 04S, 05W

Landform (hillslope, terrace, etc.): hillslope | Local Relief (concave, convex, none): concave | Slope(%): 8

Subregion(LRR): LRR A | Lat: 37.53841761 | Long: -122.4454941 | Datum: WGS 84

Soil Map Unit Name: Rough broken land | NWI classification: N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology | Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology | (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No

Hydric Soil Present? ☒ Yes ☐ No

Wetland Hydrology Present? ☒ Yes ☐ No

Is the Sampled Area within a Wetland? ☒ **Yes** ☐ **No**

Remarks: Wetland SP in an arroyo willow stand located on a slope between two dirt roads, south of the Gun Club building. Water drains into the feature from and upslope seep. SP03 paired with SP04.

VEGETATION (use scientific names)

TREE STRATUM **Plot Size:** entire feature	Absolute % cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	60	Yes	FACW
2.			
3.			
4.			
Tree Stratum Total Cover:	60		
SAPLING/SHRUB STRATUM **Plot Size:** N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM **Plot Size:** 5' radius			
1. *Juncus effusus*	30	Yes	FACW
2. *Cortaderia jubata*	2	No	FACU
3. *Polystichum munitum*	2	No	FACU
4.			
5.			
6.			
7.			
8.			
Herb Stratum Total Cover:	34		
WOODY VINE STRATUM **Plot Size:** entire feature			
1. *Rubus ursinus*	40	Yes	FAC
2. *Toxicodendron diversilobum*	5	No	FACU
Woody Vines Total Cover:	45		

% Bare ground in herb stratum 21 | % cover of biotic crust 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 3 (A)

Total number of dominant species across all strata? 3 (B)

% of dominant species that are OBL, FACW, or FAC? 100 (A/B)

Prevalence Index Worksheet

Total % cover of:		Multiply by:	
OBL species		x1	
FACW species		x2	
FAC species		x3	
FACU species		x4	
UPL species		x5	
Column Totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☒ Dominance Test is >50%

☐ Prevalence Index is </= 3.0[1]

☐ Morphological adaptations (provide supporting data in remarks)

☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☒ Yes ☐ No

Remarks: The sample point meets the Dominance Test hydrophytic vegetation indicator.

SOIL

Sampling Point SP03

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[1]	Texture	Remarks
0-2	10YR 2/1	90	5YR 3/4	10	C	M, PL	sandy loam	
2-6	10YR 3/2	90	5YR 3/4	10	C	M, PL	sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- ☐ 1cm 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 Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present ? ☒ **Yes** ☐ **No**

Remarks: Debris below 6 inches
The sample point meets the Redox Dark Surface hydric soil indicator.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 PLowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ 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): 10

Wetland Hydrology Present ? ☒ **Yes** ☐ **No**

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: The sample point meets the Saturation and Oxidized Rhizospheres Along Living Roots hydric soil indicators.

Wetland Determination Data Form - Arid West Region

Project/Site: Half Moon Bay Gun Club | City: Half Moon Bay | County: San Mateo | Sampling Date: 12/22/2016

Applicant/Owner: Peninsula Open Space Trust | State: CA | Sampling Point: **SP04**

Investigator(s): WRA, Inc. - Scott Batiuk, Scott Yarger | Section,Township,Range: 31, 04S, 05W

Landform (hillslope, terrace, etc.): hillslope | Local Relief (concave, convex, none): none | Slope(%): 5

Subregion(LRR): LRR A | Lat: 37.53846431 | Long: -122.4455401 | Datum: WGS 84

Soil Map Unit Name: Rough broken land | NWI classification: N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology | Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology | (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No

Hydric Soil Present? ☐ Yes ☒ No

Wetland Hydrology Present? ☐ Yes ☒ No

Is the Sampled Area within a Wetland? ☐ **Yes** ☒ **No**

Remarks: Upland SP on a steep slope between dirt roads, approximately 80 feet south of the Gun Club Building. Athough the feature is dominated by arroyo willow, this species does not appear to be functioning as a hydrophyte, as hydric soil and wetland hydrology indictors are not met, despite the site visit occurring during a period of normal precipitation in the preceding 3-months and a precipitation event totaling 2.06 inches occurring 6 days prior to the site visit. Willows can have deep taproots, and they may be accessing subsurface water at depth lower than that needed to meet wetland conditions.

VEGETATION (use scientific names)

TREE STRATUM Plot Size: 20' radius	Absolute % cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	30	Yes	FACW
2.			
3.			
4.			
Tree Stratum Total Cover:	30		
SAPLING/SHRUB STRATUM Plot Size: N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM Plot Size: 5' radius			
1. *Dipsacus sativus*	5	Yes	NL
2. *Stachys cf. bullata*	3	Yes	NL
3. *Symphyotrichum subspicatum*	3	Yes	FACW
4. *Borago officinalis*	2	No	NL
5. *Scrophularia californica*	1	No	FAC
6.			
7.			
8.			
Herb Stratum Total Cover:	14		
WOODY VINE STRATUM Plot Size: 10' radius			
1. *Rubus ursinus*	15	Yes	FAC
2.			
Woody Vines Total Cover:			

% Bare ground in herb stratum: 0 | % cover of biotic crust: 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 3 (A)

Total number of dominant species across all strata? 5 (B)

% of dominant species that are OBL, FACW, or FAC? 60 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:
OBL species	x1
FACW species	x2
FAC species	x3
FACU species	x4
UPL species	x5
Column Totals (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☒ Dominance Test is >50%

☐ Prevalence Index is </= 3.0[1]

☐ Morphological adaptations (provide supporting data in remarks)

☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☒ Yes ☐ No

Remarks: 71% leaf litter
The sample point meets the Dominance Test hydrophytic vegetation indicator.

SOIL

Sampling Point SP04

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[1]	Texture	Remarks
0-14	10YR 2/2	100					sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- ☐ 1cm 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 Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present ? ☐ **Yes** ☒ **No**

Remarks: The sample point does not meet hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 PLowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ 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 guage, monitoring well, aerial photos, etc.) if available.

Remarks: The sample point does not meet wetland hydrology indicators.

Wetland Determination Data Form - Arid West Region

Project/Site: Half Moon Bay Gun Club | City: Half Moon Bay | County: San Mateo | Sampling Date: 12/22/2016

Applicant/Owner: Peninsula Open Space Trust | State: CA | Sampling Point: **SP05**

Investigator(s): WRA, Inc. - Scott Batiuk, Scott Yarger | Section,Township,Range: 31, 04S, 05W

Landform (hillslope, terrace, etc.): terrace | Local Relief (concave, convex, none): convex | Slope(%): 2

Subregion(LRR): LRR A | Lat: 37.53859809 | Long: -122.4452551 | Datum: WGS 84

Soil Map Unit Name: Rough broken land | NWI classification: N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology | Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology | (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☐ Yes ☒ No

Hydric Soil Present? ☐ Yes ☒ No

Wetland Hydrology Present? ☐ Yes ☒ No

Is the Sampled Area within a Wetland? ☐ **Yes** ☒ **No**

Remarks: Upland SP located on a historically excavated terrace adjacent to the northeast of a dirt road and near, to the southeast, of the Gun Club building. Adjacent to a seasoal emeragent wetland that was sampled in SP06. SP05 and SP06 are paired..

VEGETATION (use scientific names)

TREE STRATUM **Plot Size:** N/A	Absolute % cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Tree Stratum Total Cover:			
SAPLING/SHRUB STRATUM **Plot Size:** 10' radius			
1. *Baccharis pilularis*	2	Yes	NL
2. *Genista monspessulana*	1	No	NL
3.			
4.			
Sapling/Shrub Stratum Total Cover:	3		
HERB STRATUM **Plot Size:** 5' radius			
1. *Fragaria vesca*	30	Yes	UPL
2. *Hirschfeldia incana*	20	Yes	NL
3. *Plantago lanceolata*	10	No	FAC
4. *Ehrharta erecta*	10	No	NL
5. *Dactylis glomerata*	5	No	FACU
6. *Elymus glaucus*	5	No	FACU
7. *Geranium molle*	2	No	NL
8. *Sanicula crassicaulis*	1	No	NL
Herb Stratum Total Cover:	83		
WOODY VINE STRATUM **Plot Size:** N/A			
1.			
2.			
Woody Vines Total Cover:			

% Bare ground in herb stratum 5 | % cover of biotic crust 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 0 (A)

Total number of dominant species across all strata? 3 (B)

% of dominant species that are OBL, FACW, or FAC? 0 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:
OBL species	x1
FACW species	x2
FAC species	x3
FACU species	x4
UPL species	x5
Column Totals (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☐ Dominance Test is >50%

☐ Prevalence Index is </= 3.0[1]

☐ Morphological adaptations (provide supporting data in remarks)

☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☐ Yes ☒ No

Remarks: 10% leaf litter
The sample point does not meet hydrophytic vegetation indicators.

SOIL

Sampling Point SP05

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[1]	Texture	Remarks
0-10	10YR 3/2	80					loam	
	10YR 4/6	20						fill inclusions
10-14	10YR 2/1	80					loam	
	10YR 4/6	20						fill inclusions

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- ☐ 1cm 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 Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present ? ☐ Yes ☒ No

Remarks: Fill soil contains mixed horizons, with no redox observed.
The sample point does not meet hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 PLowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ 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 guage, monitoring well, aerial photos, etc.) if available.

Remarks: The sample point does not meet wetland hydrology indicators.

Wetland Determination Data Form - Arid West Region

Project/Site: Half Moon Bay Gun Club | City: Half Moon Bay | County: San Mateo | Sampling Date: 12/22/2016

Applicant/Owner: Peninsula Open Space Trust | State: CA | Sampling Point: **SP06**

Investigator(s): WRA, Inc. - Scott Batiuk, Scott Yarger | Section,Township,Range: 31, 04S, 05W

Landform (hillslope, terrace, etc.): terrace | Local Relief (concave, convex, none): concave | Slope(%): 1

Subregion(LRR): LRR A | Lat: 37.53858113 | Long: -122.4452417 | Datum: WGS 84

Soil Map Unit Name: Rough broken land | NWI classification: N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology | Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology | (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No

Hydric Soil Present? ☒ Yes ☐ No

Wetland Hydrology Present? ☒ Yes ☐ No

Is the Sampled Area within a Wetland? ☒ **Yes** ☐ **No**

Remarks: Wetland SP in a seep located on a historically excavated terrace adjacent to the northeast of a dirt road and near, to the southeast, of the Gun Club building. The seep discharges from the cutslope above (east) of the sampled feature. SP05 and SP06 are paired.

VEGETATION (use scientific names)

TREE STRATUM Plot Size: N/A	Absolute % cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Tree Stratum Total Cover:			
SAPLING/SHRUB STRATUM Plot Size: N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM Plot Size: 5' radius			
1. *Juncus patens*	15	Yes	FACW
2. *Veronica anagallis-aquatica*	10	Yes	OBL
3. *Plantago lanceolata*	10	Yes	FAC
4. *Epilobium ciliatum*	10	Yes	FACW
5. *Helminthotheca echioides*	5	No	FAC
6. *Symphyotrichum subspicatum*	5	No	FACW
7.			
8.			
Herb Stratum Total Cover:	55		
WOODY VINE STRATUM Plot Size: 10' radius			
1. *Rubus ursinus*	30	Yes	FAC
2.			
Woody Vines Total Cover:	30		

% Bare ground in herb stratum: 15 | % cover of biotic crust: 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 5 (A)

Total number of dominant species across all strata? 5 (B)

% of dominant species that are OBL, FACW, or FAC? 100 (A/B)

Prevalence Index Worksheet

Total % cover of:		Multiply by:	
OBL species		x1	
FACW species		x2	
FAC species		x3	
FACU species		x4	
UPL species		x5	
Column Totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☒ Dominance Test is >50%

☐ Prevalence Index is </= 3.0[1]

☐ Morphological adaptations (provide supporting data in remarks)

☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☒ Yes ☐ No

Remarks: The sample point meets the Dominance Test hydrophytic vegetation indicator.

SOIL

Sampling Point SP06

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[1]	Texture	Remarks
0-8	10YR 2/1	97	2.5YR 3/4	3	C	M, PL	loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- ☐ 1cm 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 Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present ? ☒ **Yes** ☐ **No**

Remarks: The sample point meets the Redox Dark Surface hydric soil indicator.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 PLowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ 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): 4

Saturation Present? (includes capillary fringe) ☒ Yes ☐ No Depth (inches): 0

Wetland Hydrology Present ? ☒ **Yes** ☐ **No**

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: The sample point meets the High Water Table and Saturation hydric soil indicators.

Wetland Determination Data Form - Arid West Region

Project/Site: Half Moon Bay Gun Club | City: Half Moon Bay | County: San Mateo | Sampling Date: 12/22/2016

Applicant/Owner: Peninsula Open Space Trust | State: CA | Sampling Point: **SP07**

Investigator(s): WRA, Inc. - Scott Batiuk, Scott Yarger | Section,Township,Range: 31, 04S, 05W

Landform (hillslope, terrace, etc.): terrace | Local Relief (concave, convex, none): none | Slope(%): 1

Subregion(LRR): LRR A | Lat: 37.53884397 | Long: -122.4455611 | Datum: WGS 84

Soil Map Unit Name: Rough broken land | NWI classification: N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology | Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology | (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☐ Yes ☒ No

Hydric Soil Present? ☐ Yes ☒ No

Wetland Hydrology Present? ☐ Yes ☒ No

Is the Sampled Area within a Wetland? ☐ **Yes** ☒ **No**

Remarks: Upland SP located on a historically excavated terrace adjacent to the northeast of a dirt road and adjacent to the northwest of the Gun Club building. SP is adjacent to a seasonal emergent wetland sampled in SP07. SP7 and SP08 are paired.

VEGETATION (use scientific names)

TREE STRATUM Plot Size: N/A	Absolute % cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Tree Stratum Total Cover:			
SAPLING/SHRUB STRATUM Plot Size: 10' radius			
1. *Baccharis pilularis*	30	Yes	NL
2. *Salvia leucantha*	10	No	NL
3.			
4.			
Sapling/Shrub Stratum Total Cover:	40		
HERB STRATUM Plot Size: 5' radius			
1. *Bromus hordeaceus*	20	Yes	FACU
2. *Fragaria vesca*	15	Yes	UPL
3. *Cynosurus echinatus*	15	Yes	NL
4. *Clinopodium douglasii*	5	No	FACU
5. *Geranium molle*	2	No	NL
6. *Scrophularia californica*	2	No	FAC
7. *Pseudognaphalium luteoalbum*	1	No	FAC
8.			
Herb Stratum Total Cover:	60		
WOODY VINE STRATUM Plot Size: 10' radius			
1. *Rubus ursinus*	2	Yes	FAC
2.			
Woody Vines Total Cover:	2		

% Bare ground in herb stratum: 15 | % cover of biotic crust: 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 1 (A)

Total number of dominant species across all strata? 5 (B)

% of dominant species that are OBL, FACW, or FAC? 20 (A/B)

Prevalence Index Worksheet

Total % cover of:		Multiply by:	
OBL species		x1	
FACW species		x2	
FAC species		x3	
FACU species		x4	
UPL species		x5	
Column Totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is </= 3.0[1]
- ☐ Morphological adaptations (provide supporting data in remarks)
- ☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☐ Yes ☒ No

Remarks: The sample point does not meet hydrophytic vegetation indicators.
Landscaped vegetation (Salvia leucantha) is present in a portion of the sampled area.

SOIL

Sampling Point SP07

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[1]	Texture	Remarks
0-14	10YR 2/1	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- ☐ 1cm 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 Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present ? ☐ Yes ☒ No

Remarks: Although it is technically possible that the Thick Dark Surface indicator could still be met at SP07 if a deeper pit was dug, nearby wetland sample points with similar soil texture and color and similar vegetation cover contained evident redox concentrations throughout their soil profiles. Furthermore, hydrophytic vegetation indicators and wetland hydrology indicators were not met at SP07. As such, it is assumed that SP07 would not meet the Thick Dark Surface indicator. No other hydric soil indicators were met.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 PLowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ 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 guage, monitoring well, aerial photos, etc.) if available.

Remarks: The sample point does not meet wetland hydrology indicators.

Wetland Determination Data Form - Arid West Region

Project/Site: Half Moon Bay Gun Club | City: Half Moon Bay | County: San Mateo | Sampling Date: 12/22/2016

Applicant/Owner: Peninsula Open Space Trust | State: CA | Sampling Point: **SP08**

Investigator(s): WRA, Inc. - Scott Batiuk, Scott Yarger | Section,Township,Range: 31, 04S, 05W

Landform (hillslope, terrace, etc.): hillslope | Local Relief (concave, convex, none): concave | Slope(%): 1

Subregion(LRR): LRR A | Lat: 37.53885467 | Long: -122.4455936 | Datum: WGS 84

Soil Map Unit Name: Rough broken land | NWI classification: R4SBA

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology | Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology | (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No

Hydric Soil Present? ☒ Yes ☐ No

Wetland Hydrology Present? ☒ Yes ☐ No

Is the Sampled Area within a Wetland? ☒ **Yes** ☐ **No**

Remarks: Wetland SP located on a historically excavated terrace adjacent to the northeast of a dirt road and near to the northwest of the Gun Club building. The hydrological source for this feature is a seep that discharges upslope and drains onto the terrace, where the water collects. This feature drains to the southwest and dissipates into sheet flow across the road. SP7 and SP08 are paired.

VEGETATION (use scientific names)

TREE STRATUM Plot Size: N/A	Absolute % cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Tree Stratum Total Cover:			
SAPLING/SHRUB STRATUM Plot Size: N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM Plot Size: 5' radius			
1. *Holcus lanatus*	25	Yes	FAC
2. *Cardamine cf. oligosperma*	15	Yes	FAC
3. *Cyperus eragrostis*	15	Yes	FACW
4. *Epilobium ciliatum*	10	No	FACW
5. *Veronica anagallis-aquatica*	5	No	OBL
6. *Plantago lanceolata*	5	No	FAC
7. *Helminthotheca echioides*	2	No	FAC
8. *Mimulus guttatus*	2	No	OBL
Herb Stratum Total Cover:	79		
WOODY VINE STRATUM Plot Size: N/A			
1.			
2.			
Woody Vines Total Cover:			

% Bare ground in herb stratum: 11 | % cover of biotic crust: 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 3 (A)

Total number of dominant species across all strata? 3 (B)

% of dominant species that are OBL, FACW, or FAC? 100 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:
OBL species	x1
FACW species	x2
FAC species	x3
FACU species	x4
UPL species	x5
Column Totals (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☒ Dominance Test is >50%

☐ Prevalence Index is </= 3.0[1]

☐ Morphological adaptations (provide supporting data in remarks)

☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☒ Yes ☐ No

Remarks: Open water: 10%
The sample point meets the Dominance Test hydrophytic vegetation indicator.

SOIL

Sampling Point SP08

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[1]	Texture	Remarks
0-6	10YR 2/1	80	2.5YR 3/4	20	C	M, PL	loam	very thin muck on surface

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- ☐ 1cm 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 Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present ? ☒ **Yes** ☐ **No**

Remarks: The sample point meets the Redox Dark Surface hydric soil indicator.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ 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 PLowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ 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 guage, monitoring well, aerial photos, etc.) if available.

Remarks: The sample point meets the Surface Water and Saturation hydric soil indicators.

Wetland Determination Data Form - Arid West Region

Project/Site: Half Moon Bay Gun Club | City: Half Moon Bay | County: San Mateo | Sampling Date: 12/22/2016

Applicant/Owner: Peninsula Open Space Trust | State: CA | Sampling Point: **SP09**

Investigator(s): WRA, Inc. - Scott Batiuk, Scott Yarger | Section,Township,Range: 31, 04S, 05W

Landform (hillslope, terrace, etc.): terrace | Local Relief (concave, convex, none): concave | Slope(%): 2

Subregion(LRR): LRR A | Lat: 37.53887793 | Long: -122.4455474 | Datum: WGS 84

Soil Map Unit Name: Rough broken land | NWI classification: R4SBA

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology | Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology | (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No

Hydric Soil Present? ☐ Yes ☒ No

Wetland Hydrology Present? ☐ Yes ☒ No

Is the Sampled Area within a Wetland? ☐ **Yes** ☒ **No**

Remarks: Upland SP at base of a steep slope, adjacent to the Gun Club Building. Athough the feature is dominated by arroyo willow, this species does not appear to be functioning as a hydrophyte, as hydric soil and wetland hydrology indictors are not met, despite the site visit occurring during a period of normal precipitation in the preceding 3-months and a precipitation event totaling 2.06 inches occurring 6 days prior to the site visit. Willows can have deep taproots, and they may be accessing subsurface water at depth lower than that needed to meet wetland conditions.

VEGETATION (use scientific names)

TREE STRATUM Plot Size: 20' radius	Absolute % cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	30	Yes	FACW
2.			
3.			
4.			
Tree Stratum Total Cover:	30		
SAPLING/SHRUB STRATUM Plot Size: N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM Plot Size: 5' radius			
1. *Plantago lanceolata*	20	Yes	FAC
2. *Fragaria vesca*	10	Yes	UPL
3. *Cynosurus echinatus*	10	Yes	NL
4. *Agrostis capillaris*	10	Yes	FAC
5. *Stachys cf. bullata*	5	No	NL
6. *Helminthotheca echioides*	5	No	FAC
7. *Holcus lanatus*	5	No	FAC
8. *Geranium molle*	3	No	NL
Herb Stratum Total Cover:	70		
WOODY VINE STRATUM Plot Size: 10' radius			
1. *Rubus ursinus*	30	Yes	FAC
2.			
Woody Vines Total Cover:	30		

% Bare ground in herb stratum: 25 | % cover of biotic crust: 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 3 (A)

Total number of dominant species across all strata? 5 (B)

% of dominant species that are OBL, FACW, or FAC? 60 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:
OBL species	x1
FACW species	x2
FAC species	x3
FACU species	x4
UPL species	x5
Column Totals (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☒ Dominance Test is >50%

☐ Prevalence Index is </= 3.0[1]

☐ Morphological adaptations (provide supporting data in remarks)

☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☒ Yes ☐ No

Remarks: Additional species in herb stratum: Urtica dioica, 2%, No, FAC
The sample point meets the Dominance Test hydrophytic vegetation indicator.

SOIL

Sampling Point SP09

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[1]	Texture	Remarks
0-14	10YR 3/2	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- ☐ 1cm 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 Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present ? ☐ **Yes** ☒ **No**

Remarks: The sample point does not meet hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 PLowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ 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 guage, monitoring well, aerial photos, etc.) if available.

Remarks: The sample point does not meet wetland hydrology indicators.

Wetland Determination Data Form - Arid West Region

Project/Site: Half Moon Bay Gun Club | City: Half Moon Bay | County: San Mateo | Sampling Date: 12/22/2016

Applicant/Owner: Peninsula Open Space Trust | State: CA | Sampling Point: **SP10**

Investigator(s): WRA, Inc. - Scott Batiuk, Scott Yarger | Section,Township,Range: 31, 04S, 05W

Landform (hillslope, terrace, etc.): hillslope | Local Relief (concave, convex, none): none | Slope(%): 1

Subregion(LRR): LRR A | Lat: 37.5382243 | Long: -122.445222 | Datum: WGS 84

Soil Map Unit Name: Rough broken land | NWI classification: N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology | Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology | (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

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

Remarks: Upland SP located in a historically excavated flat area, possibly an old roadbed and/or parking area, approximately 200 feet southeast of the Gun Club building. SP is located in a stand of Douglas-fir.

VEGETATION (use scientific names)

TREE STRATUM **Plot Size:** 20' radius	Absolute % cover	Dominant Species?	Indicator Status
1. *Pseudotsuga menziesii*	60	Yes	FACU
2.			
3.			
4.			
Tree Stratum Total Cover:	60		
SAPLING/SHRUB STRATUM **Plot Size:** N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM **Plot Size:** 5' radius			
1. *Ehrharta erecta*	75	Yes	NL
2. *Plantago lanceolata*	5	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
Herb Stratum Total Cover:	80		
WOODY VINE STRATUM **Plot Size:** 10' radius			
1. *Rubus ursinus*	15	Yes	FAC
2.			
Woody Vines Total Cover:	15		

% Bare ground in herb stratum: 5 | % cover of biotic crust: 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC?	1	(A)
Total number of dominant species across all strata?	3	(B)
% of dominant species that are OBL, FACW, or FAC?	33	(A/B)

Prevalence Index Worksheet

Total % cover of:		Multiply by:	
OBL species		x1	
FACW species		x2	
FAC species		x3	
FACU species		x4	
UPL species		x5	
Column Totals	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is </= 3.0[1]
- ☐ Morphological adaptations (provide supporting data in remarks)
- ☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☐ Yes ☒ No

Remarks: The sample point does not meet hydrophytic vegetation indicators.

SOIL

Sampling Point SP10

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[1]	Texture	Remarks
0-14	10YR 2/2	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- ☐ 1cm 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 Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present ? ☐ **Yes** ☒ **No**

Remarks: The sample point does not meet hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 PLowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ 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 guage, monitoring well, aerial photos, etc.) if available.

Remarks: The sample point does not meet wetland hydrology indicators.

Wetland Determination Data Form - Arid West Region

Project/Site: Half Moon Bay Gun Club | City: Half Moon Bay | County: San Mateo | Sampling Date: 12/22/2016

Applicant/Owner: Peninsula Open Space Trust | State: CA | Sampling Point: **SP11**

Investigator(s): WRA, Inc. - Scott Batiuk, Scott Yarger | Section,Township,Range: 31, 04S, 05W

Landform (hillslope, terrace, etc.): terrace | Local Relief (concave, convex, none): none | Slope(%): 1

Subregion(LRR): LRR A | Lat: 37.53851919 | Long: -122.4457273 | Datum: WGS 84

Soil Map Unit Name: Rough broken land | NWI classification: N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology | Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology | (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☐ Yes ☒ No

Hydric Soil Present? ☐ Yes ☒ No

Wetland Hydrology Present? ☐ Yes ☒ No

Is the Sampled Area within a Wetland? ☐ **Yes** ☒ **No**

Remarks: Upland SP in an old roadbed, approximately 90 feet southwest of the Gun Club building.

VEGETATION (use scientific names)

TREE STRATUM **Plot Size:** N/A	Absolute % cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Tree Stratum Total Cover:			
SAPLING/SHRUB STRATUM **Plot Size:** N/A			
1. *Baccharis pilularis*	10	Yes	NL
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:	10		
HERB STRATUM **Plot Size:** 5' radius			
1. *Achillea millefolium*	25	Yes	FACU
2. *Helminthotheca echioides*	15	Yes	FAC
3. *Gastridium phleoides*	15	Yes	FACU
4. *Elymus glaucus*	15	Yes	FACU
5. *Symphyotrichum subspicatum*	10	No	FACW
6. *Hirschfeldia incana*	10	No	NL
7.			
8.			
Herb Stratum Total Cover:	90		
WOODY VINE STRATUM **Plot Size:** N/A			
1.			
2.			
Woody Vines Total Cover:			

% Bare ground in herb stratum 2 | % cover of biotic crust 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 1 (A)

Total number of dominant species across all strata? 5 (B)

% of dominant species that are OBL, FACW, or FAC? 20 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:
OBL species	x1
FACW species	x2
FAC species	x3
FACU species	x4
UPL species	x5
Column Totals (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☐ Dominance Test is >50%

☐ Prevalence Index is </= 3.0[1]

☐ Morphological adaptations (provide supporting data in remarks)

☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☐ Yes ☒ No

Remarks: The sample point does not meet hydrophytic vegetation indicators.

SOIL

Sampling Point SP11

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[1]	Texture	Remarks
0-14	10YR 2/2	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- ☐ 1cm 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 Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present ? ☐ **Yes** ☒ **No**

Remarks: The sample point does not meet hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 PLowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ 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 guage, monitoring well, aerial photos, etc.) if available.

Remarks: The sample point does not meet wetland hydrology indicators.

Wetland Determination Data Form - Arid West Region

Project/Site: Half Moon Bay Gun Club | City: Half Moon Bay | County: San Mateo | Sampling Date: 12/22/2016

Applicant/Owner: Peninsula Open Space Trust | State: CA | Sampling Point: **SP12**

Investigator(s): WRA, Inc. - Scott Batiuk, Scott Yarger | Section,Township,Range: 31, 04S, 05W

Landform (hillslope, terrace, etc.): hillslope | Local Relief (concave, convex, none): convex | Slope(%): 3

Subregion(LRR): LRR A | Lat: 37.53732694 | Long: -122.4497313 | Datum: WGS 84

Soil Map Unit Name: Miramar coarse sandy loam, steep, eroded | NWI classification: N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology | Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology | (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☐ Yes ☒ No

Hydric Soil Present? ☐ Yes ☒ No

Wetland Hydrology Present? ☐ Yes ☒ No

Is the Sampled Area within a Wetland? ☐ **Yes** ☒ **No**

Remarks: Upland SP located in on a broad ridge in an area where, based on historical aerial imagery (Google Earth 1993-2016), the scrub vegetation is periodically cleared. The SP is representative of the vegetation of the clearing, which is a mosaic of non-native grasses and regenerating scrub.

VEGETATION (use scientific names)

TREE STRATUM Plot Size: N/A	Absolute % cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Tree Stratum Total Cover:			
SAPLING/SHRUB STRATUM Plot Size: N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM Plot Size: 5' radius			
1. *Bromus diandrus*	25	Yes	NL
2. *Cynosurus echinatus*	25	Yes	NL
3. *Festuca perennis*	25	Yes	FAC
4.			
5.			
6.			
7.			
8.			
Herb Stratum Total Cover:	75		
WOODY VINE STRATUM Plot Size: 10' radius			
1. *Rubus ursinus*	10	Yes	FAC
2. *Toxicodendron diversilobum*	10	Yes	FACU
Woody Vines Total Cover:	20		

% Bare ground in herb stratum: 5 | % cover of biotic crust: 5

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 2 (A)

Total number of dominant species across all strata? 5 (B)

% of dominant species that are OBL, FACW, or FAC? 40 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:
OBL species	x1
FACW species	x2
FAC species	x3
FACU species	x4
UPL species	x5
Column Totals (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☐ Dominance Test is >50%

☐ Prevalence Index is </= 3.0[1]

☐ Morphological adaptations (provide supporting data in remarks)

☐ Problematic hydrophytic vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present ? ☐ Yes ☒ No

Remarks: The sample point does not meet hydrophytic vegetation indicators.

SOIL

Sampling Point SP12

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[1]	Texture	Remarks
0-14	10YR 2/2	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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)
- ☐ 1cm 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 Soils[3]:

- ☐ 1cm Muck (A9) (LRR C)
- ☐ 2cm Muck (A10)(LRR B)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (explain in remarks)

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present ? ☐ **Yes** ☒ **No**

Remarks: The sample point does not meet hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 PLowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ 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 guage, monitoring well, aerial photos, etc.) if available.

Remarks: The sample point does not meet wetland hydrology indicators.

APPENDIX D

PRELIMINARY JURISDICTIONAL DETERMINATION MAP

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Study Area

Contours 5' Interval (NAVD88)

Sample Points - SP

Control Points

Potential CCC/Corps Jurisdictional Features

Arroyo Willow Thicket Wetland - AWW (0.02 ac.)

Seasonal Emergent Wetland - SW (0.06 ac.)

	ID	Acreage
Arroyo Willow Thicket Wetland:	AWW-1	0.01
	AWW-2	0.01
Total Arroyo Willow Thicket Wetland -		***0.02***
Seasonal Emergent Wetland:	SW-1	0.03
	SW-2	0.02
	SW-3	0.01
Total Seasonal Emergent Wetland -		***0.06***
Total Wetland -		***0.08***

37.540219, -122.44422

SP09 SP08 SP07 SP05 SP11 SP02 SP04 SP06 SP03 SP10 SP01

SP12

37.535252, -122.451932

AWW-1 SW-1 SP09 SP08 SP07 SP05 SP11 SP06 SP02 SW-2 SP04 AWW-2 SW-3 SP03 SP10 SP01

1 inch = 100 feet

0 25 50 100 Feet

ENVIRONMENTAL CONSULTANTS

Half Moon Bay Gun Club

San Mateo County, California

Appendix D – Preliminary Jurisdictional Determination Map

N W E S

1 inch = 200 feet

0 200 400

Feet

Map Prepared Date: 4/5/2018
Map Prepared By: mrochelle
Base Source: USGS, Feb 2015 Aerial
Data Source(s): WRA, 2010 GoldenGate LiDAR

Path: L:\Acad 2000 Files\26000\26162\GIS\ArcMap\Delineation.mxd

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APPENDIX E

POTENTIAL FOR SPECIAL-STATUS PLANT AND WILDLIFE SPECIES TO OCCUR IN THE STUDY AREA

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Appendix E. Potential for special-status plant and wildlife species to occur in the Study Area. List compiled from the California Natural Diversity Database (CDFW 2017), U.S. Fish and Wildlife Service Species Lists (2017), and California Native Plant Society Rare and Endangered Plant Inventory (CNPS 2017a) database searches for the San Francisco South, Hunters Point, Montara Mountain, San Mateo, Half Moon Bay, and Woodside USGS 7.5-minute quadrangles.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Plants				
San Mateo thorn-mint *Acanthomintha duttonii*	FE, SE, Rank 1B.1	Chaparral, valley and foothill grassland/serpentine. Elevation ranges from 160 to 980 feet (50 to 300 meters). Blooms Apr-Jun.	**No Potential.** The Study Area does not contain serpentine substrate.	No further actions are recommended for this species.
Blasdale's bent grass *Agrostis blasdalei*	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie. Elevation ranges from 20 to 490 feet (5 to 150 meters). Blooms May-Jul.	**Unlikely.** The Study Area does not contain coastal bluff scrub or coastal dune habitats. Although the Study Area contains open grassy areas, this species typically occurs in sandy or gravelly soil close to rocks, and often in soil with sparse vegetation (CDFW 2017), and the Study Area does not contain rocky, highly sandy, or gravelly soil.	No further actions are recommended for this species.
Franciscan onion *Allium peninsulare* var. *franciscanum*	Rank 1B.2	Cismontane woodland, valley and foothill grassland/clay, volcanic, often serpentine. Elevation ranges from 170 to 980 feet (52 to 300 meters). Blooms (Apr), May-Jun.	**No Potential.** The Study Area does not contain clay, volcanic, or serpentine substrates.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
bent-flowered fiddleneck *Amsinckia lunaris*	Rank 1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. Elevation ranges from 10 to 1640 feet (3 to 500 meters). Blooms Mar-Jun.	**Unlikely.** The open, grassy areas within the Study Area are the result of anthropogenic disturbance (periodic brush removal), and based on adjacent plant communities and aerial imagery analysis, prior to disturbance, these areas were likely dense scrub that would not have supported this species. In addition, the open, grassy areas are characterized by non-native forbs and graminoids. As such, they provide low quality habitat for this species.	No further actions are recommended for this species.
coast rockcress *Arabis blepharophylla*	Rank 4.3	Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub/rocky. Elevation ranges from 10 to 3610 feet (3 to 1100 meters). Blooms Feb-May.	**No Potential.** Rocky substrate is not present in the Study Area.	No further actions are recommended for this species.
Anderson's manzanita *Arctostaphylos andersonii*	Rank 1B.2	Broadleafed upland forest, chaparral, north coast coniferous forest/openings, edges. Elevation ranges from 200 to 2490 feet (60 to 760 meters). Blooms Nov-May.	**Unlikely.** The Study Area does not contain broadleafed upland forest, chaparral, or North Coast coniferous forest. This species is typically associated with coast redwood forest, and coast redwood is not present in the Study Area. No *Arctostaphylos* species were observed in the Study Area during the December 2016 site visit.	No further actions are recommended for this species.
Franciscan manzanita *Arctostaphylos franciscana*	FE, Rank 1B.1	Coastal scrub (serpentine). Elevation ranges from 200 to 980 feet (60 to 300 meters). Blooms Feb-Apr.	**No Potential.** The Study Area does not contain serpentine substrate.	No further actions are recommended for this species.
San Bruno Mountain manzanita *Arctostaphylos imbricata*	SE, Rank 1B.1	Chaparral, coastal scrub/rocky. Elevation ranges from 900 to 1210 feet (275 to 370 meters). Blooms Feb-May.	**No Potential.** Rocky substrate is not present in the Study Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Presidio manzanita *Arctostaphylos montana* ssp. *ravenii*	FE, SE, Rank 1B.1	Chaparral, coastal prairie, coastal scrub/serpentine outcrop. Elevation ranges from 150 to 710 feet (45 to 215 meters). Blooms Feb-Mar.	**No Potential.** The Study Area does not contain serpentine substrate.	No further actions are recommended for this species.
Montara manzanita *Arctostaphylos montaraensis*	Rank 1B.2	Chaparral (maritime), coastal scrub. Elevation ranges from 260 to 1640 feet (80 to 500 meters). Blooms Jan-Mar.	**Unlikely.** Although the Study Area contains coastal scrub, this species typically occurs on granite and sandstone outcrops (Jepson Flora Project 2017), which are not present in Study Area. No *Arctostaphylos* species were observed in the Study Area during the December 2016 site visit.	No further actions are recommended for this species.
Pacific manzanita *Arctostaphylos pacifica*	SE, Rank 1B.2	Chaparral, coastal scrub. Elevation ranges from 1080 to 1080 feet (330 to 330 meters). Blooms Feb-Apr.	**Unlikely.** Although the Study Area contains coastal scrub habitat, this species has a highly restricted range, being known only from two individuals at a single location on San Bruno Mountain, approximately 10 miles north of the Study Area, in thin, rocky substrate. No *Arctostaphylos* species were observed in the Study Area during the December 2016 site visit.	No further actions are recommended for this species.
Kings Mountain manzanita *Arctostaphylos regismontana*	Rank 1B.2	Broadleafed upland forest, chaparral, north coast coniferous forest/granitic or sandstone. Elevation ranges from 1000 to 2400 feet (305 to 730 meters). Blooms Jan-Apr.	**Unlikely.** This species is known to occur on granitic or sandstone outcrops (CDFW 2017), which are not present in the Study Area. No *Arctostaphylos* species were observed in the Study Area during the December 2016 site visit.	No further actions are recommended for this species.
ocean bluff milk-vetch *Astragalus nuttallii* var. *nuttallii*	Rank 4.2	Coastal bluff scrub, coastal dunes. Elevation ranges from 10 to 390 feet (3 to 120 meters). Blooms Jan-Nov.	**No Potential.** The Study Area does not contain coastal bluff scrub or coastal dune habitats.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
coastal marsh milk-vetch *Astragalus pycnostachyus* var. *pycnostachyus*	Rank 1B.2	Coastal dunes (mesic), coastal scrub, marshes and swamps (coastal salt, streamsides). Elevation ranges from 0 to 100 feet (0 to 30 meters). Blooms Apr-Oct.	**No Potential.** The Study Area does not contain dune, stream, or coastal salt marsh habitats.	No further actions are recommended for this species.
alkali milk-vetch *Astragalus tener* var. *tener*	Rank 1B.2	Playas, valley and foothill grassland (adobe clay), vernal pools/alkaline. Elevation ranges from 0 to 200 feet (1 to 60 meters). Blooms Mar-Jun.	**No Potential.** The Study Area does not contain playa or vernal pool habitats or clay or alkaline substrate.	No further actions are recommended for this species.
Brewer's calandrinia *Calandrinia breweri*	Rank 4.2	Chaparral, coastal scrub/sandy or loamy, disturbed sites and burns. Elevation ranges from 30 to 4000 feet (10 to 1220 meters). Blooms (Jan), Mar-Jun.	**Unlikely.** The Study Area contains disturbed areas that appeared to be potentially suitable to support this species. However, this species was not observed during special-status plant surveys, and it is assumed that this species is not present.	No further actions are recommended for this species.
Oakland star-tulip *Calochortus umbellatus*	Rank 4.2	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland/often serpentine. Elevation ranges from 330 to 2300 feet (100 to 700 meters). Blooms Mar-May.	**Unlikely.** The open, grassy areas within the Study Area are the result of anthropogenic disturbance (periodic brush removal), and based on adjacent plant communities and aerial imagery analysis, prior to disturbance, these areas were likely dense scrub that would not have supported this species. In addition, the open, grassy areas are characterized by non-native forbs and graminoids. As such, they provide low quality habitat for this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
bristly sedge *Carex comosa*	Rank 2B.1	Coastal prairie, marshes and swamps (lake margins), valley and foothill grassland. Elevation ranges from 0 to 2050 feet (0 to 625 meters). Blooms May-Sep.	**Unlikely.** The Study Area does not contain marsh and swamp or lake margin habitat. This species typically occurs in perennially wet habitats, which are not present in the Study Area. The nearest observation of this species is approximately 15 miles north of the Study Area.	No further actions are recommended for this species.
johnny-nip *Castilleja ambigua* var. *ambigua*	Rank 4.2	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools margins. Elevation ranges from 0 to 1430 feet (0 to 435 meters). Blooms Mar-Aug.	**Unlikely.** This species typically occurs on alluvial or sedimentary flats and terraces most often in seasonally to perennially wet areas. The Study Area does not contain such substrates or landforms. The seasonal emergent wetlands in the Study Area maybe have a suitable inundation regime, but the high level of disturbance in these features reduces the quality of the habitat.	No further actions are recommended for this species.
pappose tarplant *Centromadia parryi* ssp. *parryi*	Rank 1B.2	Chaparral, coastal prairie, meadows and seeps, marshes and swamps (coastal salt), valley and foothill grassland (vernally mesic)/often alkaline. Elevation ranges from 0 to 1380 feet (0 to 420 meters). Blooms May-Nov.	**Unlikely.** The Study Area does not contain chaparral, coastal prairie, meadows and seeps with sufficient inundation and dominated by perennial graminoids, marsh and swamp, or alkaline habitats.	No further actions are recommended for this species.
Point Reyes bird's-beak *Chloropyron maritimum* ssp. *palustre*	Rank 1B.2	Marshes and swamps (coastal salt). Elevation ranges from 0 to 30 feet (0 to 10 meters). Blooms Jun-Oct.	**No Potential.** The Study Area does not contain coastal marsh and swamp habitat.	No further actions are recommended for this species.
San Francisco Bay spineflower *Chorizanthe cuspidata* var. *cuspidata*	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub/sandy. Elevation ranges from 10 to 710 feet (3 to 215 meters). Blooms Apr-Jul (Aug).	**No Potential.** The Study Area does not contain highly sandy substrates, such as dunes.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
robust spineflower *Chorizanthe robusta* var. *robusta*	FE, Rank 1B.1	Chaparral (maritime), cismontane woodland (openings), coastal dunes, coastal scrub/sandy or gravelly. Elevation ranges from 10 to 980 feet (3 to 300 meters). Blooms Apr-Sep.	**No Potential.** The Study Area does not contain gravelly substrates or highly sandy substrates, such as dunes.	No further actions are recommended for this species.
Franciscan thistle *Cirsium andrewsii*	Rank 1B.2	Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub/mesic, sometimes serpentine. Elevation ranges from 0 to 490 feet (0 to 150 meters). Blooms Mar-Jul.	**Unlikely.** The Study Area does not contain mesic broadleafed upland forest, coastal bluff scrub, or coastal prairie habitats or serpentine substrate. This species tends to occur in perennially wet areas, which are not present in the Study Area.	No further actions are recommended for this species.
Crystal Springs fountain thistle *Cirsium fontinale* var. *fontinale*	FE, SE, Rank 1B.1	Chaparral (openings), cismontane woodland, meadows and seeps, valley and foothill grassland/serpentine seeps. Elevation ranges from 150 to 570 feet (45 to 175 meters). Blooms (Apr), May-Oct.	**No Potential.** The Study Area does not contain serpentine substrate.	No further actions are recommended for this species.
compact cobwebby thistle *Cirsium occidentale* var. *compactum*	Rank 1B.2	Chaparral, coastal dunes, coastal prairie, coastal scrub. Elevation ranges from 20 to 490 feet (5 to 150 meters). Blooms Apr-Jun.	**Unlikely.** This species is known from coastal dune habitat or other areas with highly sandy substrates or clay substrates (CDFW 2017), which are not present in the Study Area. The nearest documented occurrence of this species is approximately 12 miles north.	No further actions are recommended for this species.
San Francisco collinsia *Collinsia multicolor*	Rank 1B.2	Closed-cone coniferous forest, coastal scrub/sometimes serpentine. Elevation ranges from 100 to 820 feet (30 to 250 meters). Blooms (Feb), Mar-May.	**Unlikely.** This species is known from serpentine or decomposed shale mixed with humus substrates (CDFW 2017), which are not present in the Study Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
clustered lady's-slipper *Cypripedium fasciculatum*	Rank 4.2	Lower montane coniferous forest, north coast coniferous forest/usually serpentine seeps and streambanks. Elevation ranges from 330 to 7990 feet (100 to 2435 meters). Blooms Mar-Aug.	**Unlikely.** The Study Area does not contain serpentine seeps or moist streambanks. The Douglas fir forest is dry, and the shadiest portions have a dense California blackberry and English ivy ground cover, further reducing the likelihood of this species to occur there.	No further actions are recommended for this species.
western leatherwood *Dirca occidentalis*	Rank 1B.2	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, riparian woodland/mesic. Elevation ranges from 80 to 1390 feet (25 to 425 meters). Blooms Jan-Mar (Apr).	**Unlikely.** The Study Area contains potentially suitable undisturbed coastal scrub and forested habitats. However, this species was not observed during special-status plant surveys, and is therefore assumed to be not present.	No further actions are recommended for this species.
California bottle-brush grass *Elymus californicus*	Rank 4.3	Broadleafed upland forest, cismontane woodland, north coast coniferous forest, riparian woodland. Elevation ranges from 50 to 1540 feet (15 to 470 meters). Blooms May-Aug (Nov).	**Unlikely.** This species has been observed on Scarper Ridge approximately 1.5 miles east of the Study Area in Douglas fir forest with similar species present in the Study Area. However, this species was not observed during special-status plant surveys and is therefore assumed to not be present.	No further actions are recommended for this species.
marsh horsetail *Equisetum palustre*	Rank 3	Marshes and swamps. Elevation ranges from 150 to 3280 feet (45 to 1000 meters). Blooms unk.	**No Potential.** The Study Area does not contain marsh and swamp habitats.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
San Mateo woolly sunflower *Eriophyllum latilobum*	FE, SE, Rank 1B.1	Cismontane woodland (often serpentine, on roadcuts). Elevation ranges from 150 to 490 feet (45 to 150 meters). Blooms May-Jun.	**Unlikely.** Although the Study Area contains a stand of Douglas fir forest, the understory is generally a dense groundcover of California blackberry and English ivy, or it intergrades with dense coyote brush scrub. In addition, this species was not observed on roadcuts located within shady, forested portions of the Study Area.	No further actions are recommended for this species.
San Francisco wallflower *Erysimum franciscanum*	Rank 4.2	Chaparral, coastal dunes, coastal scrub, valley and foothill grassland/often serpentine or granitic, sometimes roadsides. Elevation ranges from 0 to 1800 feet (0 to 550 meters). Blooms Mar-Jun.	**Unlikely.** Although the Study Area contains coastal scrub and open, grassy areas, this species typically occurs in rocky, thin soils, loose sand, or serpentine substrate, none of which are present in the Study Area.	No further actions are recommended for this species.
Hillsborough chocolate lily *Fritillaria biflora* var. *ineziana*	Rank 1B.1	Cismontane woodland, valley and foothill grassland/serpentine. Elevation ranges from 490 to 490 feet (150 to 150 meters). Blooms Mar-Apr.	**No Potential.** The Study Area does not contain serpentine substrate.	No further actions are recommended for this species.
Marin checker lily *Fritillaria lanceolata* var. *tristulis*	Rank 1B.1	Coastal bluff scrub, coastal prairie, coastal scrub. Elevation ranges from 50 to 490 feet (15 to 150 meters). Blooms Feb-May.	**Unlikely.** The open, grassy areas within the Study Area are the result of anthropogenic disturbance (periodic brush removal), and based on adjacent plant communities and aerial imagery analysis, prior to disturbance, these areas were likely dense scrub that would not have supported this species. In addition, the open, grassy areas are characterized by non-native forbs and graminoids. As such, they provide low quality habitat for this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
fragrant fritillary *Fritillaria liliacea*	Rank 1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland/often serpentine. Elevation ranges from 10 to 1350 feet (3 to 410 meters). Blooms Feb-Apr.	**Unlikely.** Although the Study Area contains open, scrubby areas, this species typically occurs on serpentine and/or heavy clay soils, which are not present in the Study Area.	No further actions are recommended for this species.
blue coast gilia *Gilia capitata* ssp. *chamissonis*	Rank 1B.1	Coastal dunes, coastal scrub. Elevation ranges from 10 to 660 feet (2 to 200 meters). Blooms Apr-Jul.	**No Potential.** This species occurs in highly sandy substrates such as dunes (CDFW 2017) which are not present in the Study Area.	No further actions are recommended for this species.
dark-eyed gilia *Gilia millefoliata*	Rank 1B.2	Coastal dunes. Elevation ranges from 10 to 100 feet (2 to 30 meters). Blooms Apr-Jul.	**No Potential.** The Study Area does not contain dune habitat.	No further actions are recommended for this species.
San Francisco gumplant *Grindelia hirsutula* var. *maritima*	Rank 3.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland/sandy or serpentine. Elevation ranges from 50 to 1310 feet (15 to 400 meters). Blooms Jun-Sep.	**No Potential.** The Study Area does not contain serpentine or highly sandy substrates, such as dunes.	No further actions are recommended for this species.
Diablo helianthella *Helianthella castanea*	Rank 1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland/usually rocky, axonal soils. often in partial shade. Elevation ranges from 200 to 4270 feet (60 to 1300 meters). Blooms Mar-Jun.	**Unlikely.** The Study Area does not contain rocky, azonal soils or chaparral or oak woodland habitat, where this species typically occurs.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
congested-headed hayfield tarplant *Hemizonia congesta* ssp. *congesta*	Rank 1B.2	Valley and foothill grassland/sometimes roadsides. Elevation ranges from 70 to 1840 feet (20 to 560 meters). Blooms Apr-Nov.	**Unlikely.** Although the Study Area contains potentially suitable grassy openings and roadsides, the nearest documented occurrence of this species is approximately 8 miles north of the Study Area and is greater 100 years old, and the nearest recent (less than 10 years old) documentation of this species is approximately 30 miles north of the Study Area (CDFW 2017); furthermore, although the site visit occurred past the blooming period of this species, hayfield tarplant individuals often persist after they have died. Given the lack of recent disturbance in the Study Area, plants would likely still have been identifiable to genus or subtribe Madiinae; no taxa in the subtribe Madiinae were observed	No further actions are recommended for this species.
short-leaved evax *Hesperevax sparsiflora* var. *brevifolia*	Rank 1B.2	Coastal bluff scrub (sandy), coastal dunes, coastal prairie. Elevation ranges from 0 to 710 feet (0 to 215 meters). Blooms Mar-Jun.	**No Potential.** This species occurs in highly sandy substrates such as dunes (CDFW 2017) which are not present in the Study Area.	No further actions are recommended for this species.
Marin western flax *Hesperolinon congestum*	FT, ST, Rank 1B.1	Chaparral, valley and foothill grassland/serpentine. Elevation ranges from 20 to 1210 feet (5 to 370 meters). Blooms Apr-Jul.	**No Potential.** The Study Area does not contain serpentine substrate.	No further actions are recommended for this species.
water star-grass *Heteranthera dubia*	Rank 2B.2	Marshes and swamps (alkaline, still or slow-moving water)/requires a pH of 7 or higher, usually in slightly eutrophic waters. Elevation ranges from 100 to 4900 feet (30 to 1495 meters). Blooms Jul-Oct.	**No Potential.** The Study Area does not contain alkaline marsh and swamp habitat.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Kellogg's horkelia *Horkelia cuneata* var. *sericea*	Rank 1B.1	Closed-cone coniferous forest, chaparral (maritime), coastal dunes, coastal scrub/sandy or gravelly, openings. Elevation ranges from 30 to 660 feet (10 to 200 meters). Blooms Apr-Sep.	**No Potential.** This species occurs in gravelly substrates or highly sandy substrates such as dunes (CDFW 2017) which are not present in the Study Area.	No further actions are recommended for this species.
Point Reyes horkelia *Horkelia marinensis*	Rank 1B.2	Coastal dunes, coastal prairie, coastal scrub/sandy. Elevation ranges from 20 to 2480 feet (5 to 755 meters). Blooms May-Sep.	**Unlikely.** The open, grassy areas within the Study Area are the result of anthropogenic disturbance (periodic brush removal), and based on adjacent plant communities and aerial imagery analysis, prior to disturbance, these areas were likely dense scrub that would not have supported this species. In addition, the open, grassy areas are characterized by non-native forbs and graminoids. As such, they provide low quality habitat for this species.	No further actions are recommended for this species.
coast iris *Iris longipetala*	Rank 4.2	Coastal prairie, lower montane coniferous forest, meadows and seeps/mesic. Elevation ranges from 0 to 1970 feet (0 to 600 meters). Blooms Mar-May.	**Unlikely.** The open, grassy areas within the Study Area are the result of anthropogenic disturbance (periodic brush removal), and based on adjacent plant communities and aerial imagery analysis, prior to disturbance, these areas were likely dense scrub that would not have supported this species. In addition, the open, grassy areas are characterized by non-native forbs and graminoids. As such, they provide low quality habitat for this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
perennial goldfields *Lasthenia californica* ssp. *macrantha*	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub. Elevation ranges from 20 to 1710 feet (5 to 520 meters). Blooms Jan-Nov.	**Unlikely.** Although the Study Area contains coastal scrub, this species typically occurs in coastal terrace and coastal bluff areas in closer proximity to the Pacific Ocean than the location of the Study Area.	No further actions are recommended for this species.
beach layia *Layia carnosa*	FE, SE, Rank 1B.1	Coastal dunes, coastal scrub (sandy). Elevation ranges from 0 to 200 feet (0 to 60 meters). Blooms Mar-Jul.	**No Potential.** This species occurs in highly sandy substrates such as dunes (CDFW 2017) which are not present in the Study Area.	No further actions are recommended for this species.
serpentine leptosiphon *Leptosiphon ambiguus*	Rank 4.2	Cismontane woodland, coastal scrub, valley and foothill grassland/usually serpentine. Elevation ranges from 390 to 3710 feet (120 to 1130 meters). Blooms Mar-Jun.	**No Potential.** The Study Area does not contain serpentine substrate.	No further actions are recommended for this species.
coast yellow leptosiphon *Leptosiphon croceus*	Rank 1B.1	Coastal bluff scrub, coastal prairie. Elevation ranges from 30 to 490 feet (10 to 150 meters). Blooms Apr-May.	**Unlikely.** This species typically occurs in coastal bluff scrub and/or marine terrace landforms. When it occurs away from the immediate coast, it often occurs on serpentine substrate (CDFW 2017, CCH 2017). The Study Area does not contain coastal bluff scrub habitat, marine terrace landform, or serpentine substrate.	No further actions are recommended for this species.
rose leptosiphon *Leptosiphon rosaceus*	Rank 1B.1	Coastal bluff scrub. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms Apr-Jul.	**No Potential.** The Study Area does not contain coastal bluff scrub habitat.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Crystal Springs lessingia *Lessingia arachnoidea*	Rank 1B.2	Cismontane woodland, coastal scrub, valley and foothill grassland/serpentine, often roadsides. Elevation ranges from 200 to 660 feet (60 to 200 meters). Blooms Jul-Oct.	**No Potential.** The Study Area does not contain serpentine substrate.	No further actions are recommended for this species.
San Francisco lessingia *Lessingia germanorum*	FE, SE, Rank 1B.1	Coastal scrub (remnant dunes). Elevation ranges from 80 to 360 feet (25 to 110 meters). Blooms (Jun), Jul-Nov.	**No Potential.** The Study Area does not contain remnant dune habitat.	No further actions are recommended for this species.
woolly-headed lessingia *Lessingia hololeuca*	Rank 3	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland/clay, serpentine. Elevation ranges from 50 to 1000 feet (15 to 305 meters). Blooms Jun-Oct.	**No Potential.** The Study Area does not contain serpentine or clay substrate.	No further actions are recommended for this species.
coast lily *Lilium maritimum*	Rank 1B.1	Broadleafed upland forest, closed-cone coniferous forest, coastal prairie, coastal scrub, marshes and swamps (freshwater), north coast coniferous forest/sometimes roadside. Elevation ranges from 20 to 1560 feet (5 to 475 meters). Blooms May-Aug.	**Unlikely.** This species typically occurs in highly sandy soils and/or boggy conditions in natural settings or roadside ditches (CDFW 2017). The Study Area does not contain such substrate or habitat.	No further actions are recommended for this species.
Ornduff's meadowfoam *Limnanthes douglasii* ssp. *ornduffii*	Rank 1B.1	Meadows and seeps/agricultural fields. Elevation ranges from 30 to 70 feet (10 to 20 meters). Blooms Nov-May.	**Unlikely.** This highly restricted species is known only from current and former agricultural fields on the coastal terrace in El Granada. Although the Study Area has disturbed, seasonally wet areas, the historical and modern land management practices are substantially different from those used in agricultural fields.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
San Mateo tree lupine *Lupinus arboreus* var. *eximius*	Rank 3.2	Chaparral, coastal scrub. Elevation ranges from 300 to 1800 feet (90 to 550 meters). Blooms Apr-Jul.	**Present.** This species was observed in abundance within the Study Area, particularly in the disturbed coastal scrub community.	No further actions are recommended for this species.
Indian Valley bush-mallow *Malacothamnus aboriginum*	Rank 1B.2	Chaparral, cismontane woodland/rocky, granitic, often in burned areas. Elevation ranges from 490 to 5580 feet (150 to 1700 meters). Blooms Apr-Oct.	**No Potential.** The Study Area does not contain rocky substrate or sandy bare soil (CDFW 2017).	No further actions are recommended for this species.
arcuate bush-mallow *Malacothamnus arcuatus*	Rank 1B.2	Chaparral, cismontane woodland. Elevation ranges from 50 to 1160 feet (15 to 355 meters). Blooms Apr-Sep.	**No Potential.** The Study Area does not contain chaparral or cismontane woodland habitats or gravelly alluvium substrate (CDFW 2017).	No further actions are recommended for this species.
Davidson's bush-mallow *Malacothamnus davidsonii*	Rank 1B.2	Chaparral, cismontane woodland, coastal scrub, riparian woodland. Elevation ranges from 610 to 2810 feet (185 to 855 meters). Blooms Jun-Jan.	**No Potential.** The Study Area does not contain chaparral, cismontane woodland, or riparian woodland habitats. Although the Study Area contains coastal scrub habitat, this species occurs in sandy washes (CDFW 2017), which are not present in the Study Area.	No further actions are recommended for this species.
Hall's bush-mallow *Malacothamnus hallii*	Rank 1B.2	Chaparral, coastal scrub. Elevation ranges from 30 to 2490 feet (10 to 760 meters). Blooms May-Sep (Oct).	**Unlikely.** This species typically occurs in open chaparral habitat, often on serpentine substrate, and this habitat and substrate are not present in the Study Area. This species was not observed in the Study Area during the December 2016 site visit.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
northern curly-leaved monardella *Monardella sinuata* ssp. *nigrescens*	Rank 1B.2	Chaparral (scr co.), coastal dunes, coastal scrub, lower montane coniferous forest (scr co., ponderosa pine sandhills)/sandy.. Elevation ranges from 0 to 980 feet (0 to 300 meters). Blooms (Apr), May-Jul (Aug), (Sep).	**No Potential.** This species occurs in highly sandy substrates such as dunes (CDFW 2017) which are not present in the Study Area.	No further actions are recommended for this species.
woodland woolythreads *Monolopia gracilens*	Rank 1B.2	Broadleafed upland forest (openings), chaparral (openings), cismontane woodland, north coast coniferous forest (openings), valley and foothill grassland/serpentine. Elevation ranges from 330 to 3940 feet (100 to 1200 meters). Blooms (Feb), Mar-Jul.	**Unlikely.** This species typically occurs on serpentine substrate and/or in chaparral habitat. There is a documented occurrence approximately 1.5 miles northeast of the Study Area (CDFW 2017), but the occurrence consists of two historical observations (from 1893 and 1946) with very limited location and habitat information. Mapped soils in the vicinity of that occurrence are primarily serpentine or acidic soils derived from sedimentary sources, and such substrate is not present in the Study Area.	No further actions are recommended for this species.
Dudley's lousewort *Pedicularis dudleyi*	SR, Rank 1B.2	Chaparral (maritime), cismontane woodland, north coast coniferous forest, valley and foothill grassland. Elevation ranges from 200 to 2950 feet (60 to 900 meters). Blooms Apr-Jun.	**Unlikely.** Although the Study Area contains open, grassy areas in disturbed coastal scrub areas, this species is known from coast redwood forest and chaparral habitats, which are not present in the Study Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
white-rayed pentachaeta *Pentachaeta bellidiflora*	FE, SE, Rank 1B.1	Cismontane woodland, valley and foothill grassland (often serpentine). Elevation ranges from 110 to 2030 feet (35 to 620 meters). Blooms Mar-May.	**Unlikely.** The open, grassy areas within the Study Area are the result of anthropogenic disturbance (periodic brush removal), and based on adjacent plant communities and aerial imagery analysis, prior to disturbance, these areas were likely dense scrub that would not have supported this species. In addition, the open, grassy areas are characterized by non-native forbs and graminoids. As such, they provide low quality habitat for this species.	No further actions are recommended for this species.
Choris' popcornflower *Plagiobothrys chorisianus* var. *chorisianus*	Rank 1B.2	Chaparral, coastal prairie, coastal scrub/mesic. Elevation ranges from 50 to 520 feet (15 to 160 meters). Blooms Mar-Jun.	**Unlikely.** The coastal scrub habitat in the Study Area is likely too dry to support this species, which prefers mesic conditions. Although this species is somewhat disturbance tolerant and can occur in seasonal wetlands, it typically occurs on acidic to moderately acid substrates derived from sandstone or shale, and the soil in the Study Area has neutral acidity and is derived from quartz diorite parent material (CSRL 2017).	No further actions are recommended for this species.
Oregon polemonium *Polemonium carneum*	Rank 2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest. Elevation ranges from 0 to 6000 feet (0 to 1830 meters). Blooms Apr-Sep.	**Unlikely.** The open, grassy areas within the Study Area are the result of anthropogenic disturbance (periodic brush removal), and based on adjacent plant communities and aerial imagery analysis, prior to disturbance, these areas were likely dense scrub that would not have supported this species. In addition, the open, grassy areas are characterized by non-native forbs and graminoids. As such, they provide low quality habitat for this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Marin knotweed *Polygonum marinense*	Rank 3.1	Marshes and swamps (coastal salt or brackish). Elevation ranges from 0 to 30 feet (0 to 10 meters). Blooms (Apr), May-Aug (Oct).	**No Potential.** The Study Area does not contain salt or brackish marsh habitats.	No further actions are recommended for this species.
Hickman's cinquefoil *Potentilla hickmanii*	FE, SE, Rank 1B.1	Coastal bluff scrub, closed-cone coniferous forest, meadows and seeps (vernally mesic), marshes and swamps (freshwater). Elevation ranges from 30 to 490 feet (10 to 149 meters). Blooms Apr-Aug.	**Unlikely.** The Study Area does not contain coastal bluff scrub, closed-cone coniferous forest, or marsh and swamp habitats and are not mesic. The seasonal wetlands are vernally mesic, but the level of disturbance reduces the potential of this species to occur there. Further, this species is perennial, and its vegetative parts would likely have been visible during the December 2016 site visit.	No further actions are recommended for this species.
Lobb's aquatic buttercup *Ranunculus lobbii*	Rank 4.2	Cismontane woodland, north coast coniferous forest, valley and foothill grassland, vernal pools/mesic. Elevation ranges from 50 to 1540 feet (15 to 470 meters). Blooms Feb-May.	**No Potential.** The Study Area does not contain areas with an inundation period and depth sufficient to support this species.	No further actions are recommended for this species.
adobe sanicle *Sanicula maritima*	SR, Rank 1B.1	Chaparral, coastal prairie, meadows and seeps, valley and foothill grassland/clay, serpentine. Elevation ranges from 100 to 790 feet (30 to 240 meters). Blooms Feb-May.	**No Potential.** The Study Area does not contain clay or serpentine substrate.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
San Francisco campion *Silene verecunda* ssp. *verecunda*	Rank 1B.2	Coastal bluff scrub, chaparral, coastal prairie, coastal scrub, valley and foothill grassland/sandy. Elevation ranges from 100 to 2120 feet (30 to 645 meters). Blooms (Feb), Mar-Jun (Aug).	**Unlikely.** The Study Area does not contain mudstone, shale, or highly sandy substrates such as dunes. There is a CNDDB occurrence centered in the Study Area, but this occurrence is greater than 100 years old and has very vague location information. Based on conditions observed in December 2016, this CNDDB occurrence is likely located outside of the Study Area. In addition, this species was not observed in the Study Area during a protocol-level survey in May 2015 (Kramer Botanical 2015).	No further actions are recommended for this species.
California seablite *Suaeda californica*	FE, Rank 1B.1	Marshes and swamps (coastal salt). Elevation ranges from 0 to 50 feet (0 to 15 meters). Blooms Jul-Oct.	**No Potential.** The Study Area does not contain salt marsh habitat.	No further actions are recommended for this species.
two-fork clover *Trifolium amoenum*	FE, Rank 1B.1	Coastal bluff scrub, valley and foothill grassland (sometimes serpentine). Elevation ranges from 20 to 1360 feet (5 to 415 meters). Blooms Apr-Jun.	**Unlikely.** The open, grassy areas within the Study Area are the result of anthropogenic disturbance (periodic brush removal), and based on adjacent plant communities and aerial imagery analysis, prior to disturbance, these areas were likely dense scrub that would not have supported this species. In addition, the open, grassy areas are characterized by non-native forbs and graminoids. As such, they provide low quality habitat for this species.	No further actions are recommended for this species.
saline clover *Trifolium hydrophilum*	Rank 1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. Elevation ranges from 0 to 980 feet (0 to 300 meters). Blooms Apr-Jun.	**No Potential.** The Study Area does not contain alkaline substrate.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
San Francisco owl's-clover *Triphysaria floribunda*	Rank 1B.2	Coastal prairie, coastal scrub, valley and foothill grassland/usually serpentine. Elevation ranges from 30 to 520 feet (10 to 160 meters). Blooms Apr-Jun.	**Unlikely.** The open, grassy areas within the Study Area are the result of anthropogenic disturbance (periodic brush removal), and based on adjacent plant communities and aerial imagery analysis, prior to disturbance, these areas were likely dense scrub that would not have supported this species. In addition, the open, grassy areas are characterized by non-native forbs and graminoids. As such, they provide low quality habitat for this species.	No further actions are recommended for this species.
coastal triquetrella *Triquetrella californica*	Rank 1B.2	Coastal bluff scrub, coastal scrub/soil. Elevation ranges from 30 to 330 feet (10 to 100 meters).	**Unlikely.** Although the Study Area contains coastal scrub habitat, this species is typically known from thin, rocky or gravelly soils, which are not present in the Study Area.	No further actions are recommended for this species.
Methuselah's beard lichen *Usnea longissima*	Rank 4.2	Broadleafed upland forest, north coast coniferous forest/on tree branches; usually on old growth hardwoods and conifers. Elevation ranges from 160 to 4790 feet (50 to 1460 meters).	**Unlikely.** This taxon typically occurs where coast redwood occurs (CDFW 2017) on old-growth hardwoods and conifers. The Study Area does not contain old-growth trees and is outside of the coast redwood zone.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Wildlife				
Mammals				
pallid bat *Antrozous pallidus*	SSC, WBWG	Occupies a variety of habitats at low elevation including grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rock crevices, tree hollows, mines, caves, and a variety of man-made structures for roosting.	**Unlikely.** The only building within the Study Area is completely closed with no egress points to support bats inside the building. No sign of bat occupation was noted during the December 20, 2016 survey. The species of tree to the southeast of the Study Area are not typically used for maternity roosting as there are no large snags, cracked trunks or crevices that would support a maternity colony. Therefore, while the trees may be used as night roosts, this species is not expected to have maternity colonies present and is unlikely to be affected by Project activities.	No further actions are recommended for this species.
Townsend's big-eared bat *Corynorhinus townsendii*	SC, SSC, WBWG	This species is associated with a wide variety of habitats from deserts to mid-elevation mixed coniferous-deciduous forest. Females form maternity colonies in buildings, caves and mines and males roost singly or in small groups. Foraging occurs in open forest habitats where they glean moths from vegetation.	**No Potential.** The only building within the Study Area is completely closed with no egress points to support bat roosts within its structure. No other caves, crevices or mine shafts exist which could support the species.	No further actions are recommended for this species.
hoary bat *Lasiurus cinereus*	WBWG	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	**Unlikely.** Large trees to the southwest of the Study Area are fully exposed to offshore winds and fog, causing large daily temperature fluctuations. Such conditions are not typically favored by tree dwelling bats which require stable temperatures and thermal stability for roosting.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
big free-tailed bat *Nyctinomops macrotis*	SSC, WBWG	Occurs rarely in low-lying arid areas. Requires high cliffs or rocky outcrops for roosting sites.	**No Potential.** The Study Area does not contain tall cliffs or large rocky outcrops that support the caves and crevices that are required by this species.	No further actions are recommended for this species.
fringed myotis *Myotis thysanodes*	WBWG	Associated with a wide variety of habitats including dry woodlands, desert scrub, mesic coniferous forest, grassland, and sage-grass steppes. Buildings, mines and large trees and snags are important day and night roosts.	**Unlikely.** Large trees to the southwest of the Study Area are fully exposed to offshore winds and fog, causing large daily temperature fluctuations. Such conditions are not typically favored by tree dwelling bats which require stable temperatures and thermal stability for roosting.	No further actions are recommended for this species.
southern sea otter *Enhydra lutris nereis*	FT, CFP, MMC	Nearshore marine environments from about Año Nuevo, San Mateo County. To Point Sal, Santa Barbara County. Needs canopies of giant kelp and bull kelp for rafting and feeding. Prefers rocky substrates with abundant invertebrates.	**No Potential.** The Study Area does not contain any marine environments to support the species.	No further actions are recommended for this species.
salt-marsh harvest mouse *Reithrodontomys raviventris*	FE, SE, CFP	Found only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat. Do not burrow, build loosely organized nests. Require higher areas for flood escape.	**No Potential.** The Study Area does not contain any tidal marsh habitat required to support the species.	No further actions are recommended for this species.
American badger *Taxidea taxus*	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	**Unlikely.** Grasslands within the Study Area are limited to those where spoils will be stockpiled. During the site assessment on December 20, no burrows were observed in the area which could support badgers.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	SSC	Forest habitats of moderate canopy and moderate to dense understory. Also in chaparral habitats. Constructs nests of shredded grass, leaves, and other material. May be limited by availability of nest-building materials.	**Present.** Nests constructed by the species were observed throughout the work area.	See Section 4.4.2 for further discussion of this species.
Birds				
Alameda song sparrow *Melospiza melodia pusillula*	SSC, BCC	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits *Salicornia* marshes; nests low in *Grindelia* bushes (high enough to escape high tides) and in *Salicornia*.	**No Potential.** The Study Area does not contain any salt marsh habitat required to support nesting by the species.	No further actions are recommended for this species.
Allen's hummingbird *Selasphorus sasin*	BCC	(Nesting) Inhabits mixed evergreen, riparian woodlands, eucalyptus and cypress groves, oak woodlands, and coastal scrub during breeding season. Nest in shrubs and trees with dense vegetation.	**High Potential.** Coastal scrub habitat with dense vegetation is prevalent throughout the Study Area. Water and a habitat mosaic to support foraging are also present. The combination of these habitat components make the area suitable for nesting by the species.	See Section 4.4.2 for further discussion of this species.
American peregrine falcon *Falco peregrinus anatum*	FD, SD, CFP, BCC	Largely resident. Requires protected cliffs, ledges or tall manmade structures for nesting. Often associated with coasts, bays, marshes and other open expanses of water. Preys primarily upon waterbirds; forages widely.	**Unlikely.** The Study Area does not contain tall cliffs or ledges that are typically used by this species in natural settings. More suitable nesting and foraging habitat is located 3 miles to the west along the Pacific Ocean.	No further actions are recommended for this species.
ashy storm-petrel *Oceanodroma homochroa*	SSC, BCC	Marine species; nests in rocky crevices on offshore islands and rocks from southern Mendocino County to northern Baja California. Forages over open ocean for invertebrates and larval fishes.	**No Potential.** The Study Area does not contain off-shore island habitat required to support nesting by this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
bald eagle *Haliaeetus leucocephalus*	FD, SE, CFP, BCC	Occurs year-round in California, but primarily a winter visitor. Nests in large trees in the vicinity of larger lakes, reservoirs and rivers. Wintering habitat somewhat more variable but usually features large concentrations of waterfowl or fish.	**Unlikely.** This species is known to forage and nest along the shores of Crystal Springs Reservoir approximately 3 miles from the Study Area. However, considering the distance to the nearest potential foraging area (Pilarcitos Lake) is 1.25 miles and suitable nesting habitat is present along the shores of that waterbody, it is unlikely that the species would nest in the small isolated patch of trees within the Study Area, when higher quality habitat is present adjacent to foraging habitat.	No further actions are recommended for this species.
bank swallow *Riparia riparia*	ST	Summer resident in riparian and other lowland habitats near rivers, lakes and the ocean in northern California. Nests colonially in excavated burrows on vertical cliffs and bank cuts (natural and manmade) with fine-textured soils. Currently known to breed in Siskiyou, Shasta, and Lassen Cos., portions of the north coast, and along Sacramento River from Shasta Co. south to Yolo Co.	**No Potential.** The Study Area does not contain suitable cliff habitat to support nesting by the species.	No further actions are recommended for this species.
black oystercatcher *Haematopus bachmani*	BCC	Year-round resident of rocky coast habitats along the Pacific coast. Also occurs on coastal and lower estuarine mud-flats. Forages primarily on intertidal invertebrates.	**No Potential.** The Study Area does not contain rocky coastal habitat to support nesting or foraging by the species.	No further actions are recommended for this species.
black skimmer *Rynchops niger*	SSC, BCC	Found primarily in southern California; South San Francisco Bay has a small resident population. Nests colonially on gravel bars, low islets, and sandy beaches	**No Potential.** The Study Area does not contain sandy beaches, gravel bars or other such suitable habitat to support nesting by the species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Bryant's savannah sparrow *Passerculus sandwichensis alaudinus*	SSC	Associated with the coastal fog belt, primarily between Humboldt and northern Monterey Counties. Occupies low tidally influenced habitats, adjacent to ruderal areas; often found where Pickleweed communities merge into grassland. Infrequently found in drier grasslands. Builds nests in taller grasses and rushes along roads, levees, and water conveyance canals.	**No Potential.** The Study Area does not contain typical tidally influenced habitats required by this species for nesting.	No further actions are recommended for this species.
burrowing owl *Athene cunicularia*	SSC, BCC	Largely resident in the region. Found in grasslands and other open habitats with a sparse to absent shrub/tree canopy. Nests and roosts in old mammal burrows, typically those of ground squirrels. Preys upon insects, and also small mammals, reptiles and birds.	**No Potential.** This species requires flat expanses of low grass or bare ground. The coastal scrub which dominates most of the Study Area as well as the surrounding landscape does not provide suitable low vegetation used by this species.	No further actions are recommended for this species.
California black rail *Laterallus jamaicensis coturniculus*	ST, CFP, BCC	Occurs in tidal salt marsh with dense stands of pickleweed as well as freshwater to brackish marshes.	**No Potential.** The Study Area does not contain any tidal marsh habitat which is required by the species for nesting.	No further actions are recommended for this species.
California brown pelican *Pelecanus occidentalis californicus*	FD, SD, CFP	(Nesting colony) colonial nester on coastal islands just outside the surf line. Nests on coastal islands of small to moderate size which afford immunity from attack by ground-dwelling predators.	**No Potential.** The Study Area does not contain coastal island habitat required to support nesting by the species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
California least tern *Sterna antillarum browni*	FE, SE, CFP	Nests along the coast from San Francisco bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.	**No Potential.** The Study Area does not contain suitable beaches, salt ponds, or alkali flats to support nesting of this species.	No further actions are recommended for this species.
Costa's hummingbird *Calypte costae*	BCC	Summer resident. Uses xeric habitats, especially California coastal scrub or sage scrub and dry open areas of chaparral in the coast ranges, and is occasionally found in oak savannah. Builds nest in shrub or tree living or dead, on branch, stem, or leaves, usually 1–2 m above ground.	**High Potential.** Xeric coastal scrub habitat is prevalent throughout the Study Area. Water and a habitat mosaic to support foraging are also present. The combination of these habitat components make the area suitable for nesting by the species.	See Section 4.4.2 for further discussion of this species.
double-crested cormorant *Phalacrocorax auritus*		(Rookery site) colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	**No Potential.** The Study Area does not contain offshore island habitat used for nesting by this species. The species may occasionally be seen flying over the Study Area when passing between foraging areas inland and along the coast.	No further actions are recommended for this species.
Lawrence's goldfinch *Spinus (= Carduelis) lawrencei*	BCC	Summer resident, primarily in southern California; generally uncommon and local. Also found in large open areas in Contra Costa and Alameda Counties. Typically found in arid open woodlands, including oak savannah. Breeding distribution is erratic from year to year.	**Unlikely.** This species is only rarely sighted on the San Francisco Peninsula with no sightings recorded in the local area for at least 1.5 years (eBird 2017). Additionally, **t**ypical oak savannah habitat used for nesting by this species is not present.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
marbled murrelet *Brachyramphus marmoratus*	FT, SE	(Nesting) Feeds near shore; nests inland along the Pacific coast, from Eureka to Oregon border, and from Half Moon Bay to Santa Cruz. Nests in old-growth redwood-dominated forests, up to six miles inland. Nests often built in Douglas fir or redwood stands containing platform-like branches.	**Unlikely.** During the December 20 site assessment the trees to the southeast of the Study Area were examined for landing platforms and dense canopy structures required for nesting by the species. No suitable tree clusters or large landing limbs were observed. The Study Area is located between unit 12 of the species Critical Habitat and the Pacific Ocean, therefore the species may fly over the Study Area while commuting to and from foraging grounds, but would not be affected by Project activities.	No further actions are recommended for this species.
Nuttall's woodpecker *Picoides nuttallii*	BCC	Year-round resident in lowland woodlands throughout much of California west of the Sierra Nevada. Typical habitat is dominated by oaks; also occurs in riparian woodland. Nests in tree cavities.	**Unlikely.** Trees within the Study Area are conifers and do not typically contain cavities required to support the species.	No further actions are recommended for this species.
oak titmouse *Baeolophus inornatus*	BCC	Occurs year-round in woodland and savannah habitats where oaks are present, as well as riparian areas. Nests in tree cavities.	**Unlikely.** Trees within the Study Area are conifers and do not typically contain cavities required to support the species.	No further actions are recommended for this species.
olive-sided flycatcher *Contopus cooperi*	SSC, BCC	Summer resident. Typical breeding habitat is montane coniferous forests. At lower elevations, also occurs in wooded canyons and mixed forests and woodlands. Often associated with forest edges. Arboreal nest sites located well off the ground.	**Moderate Potential.** Conifer trees to the southeast of the Study Area may support nesting by this species while the mosaic of forest, chaparral and seeps within the canyons supports preferred foraging habitat.	See Section 4.4.2 for further discussion of this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Ridgeway's (=California) clapper rail *Rallus longirostris obsoletus*	FE, SE, CFP	Associated with tidal salt marsh and brackish marshes supporting emergent vegetation, upland refugia, and incised tidal channels.	**No Potential.** The Study Area does not contain any tidal marsh habitat which is required by the species for nesting.	No further actions are recommended for this species.
saltmarsh common yellowthroat *Geothlypis trichas sinuosa*	SSC, BCC	Resident of San Francisco bay region fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging, tall grasses, tule patches, willows for nesting.	**Unlikely.** The Study Area does not contain suitable dense marsh habitat required for nesting by the species.	No further actions are recommended for this species.
short-tailed albatross *Phoebastria albatrus*	FE, SSC	Highly pelagic; comes to land only when breeding. Nests on remote Pacific islands. A rare non-breeding visitor to the eastern Pacific.	**No Potential.** The Study Area does not contain island habitat to support nesting by the species.	No further actions are recommended for this species.
western snowy plover *Charadrius alexandrinus nivosus*	FT, SSC, BCC	Federal listing applies only to the Pacific coastal population. Found on sandy beaches, salt pond levees, and shores of large alkali lakes. Requires sandy, gravelly, or friable soils for nesting.	**No Potential.** The Study Area does not contain suitable beaches, salt ponds, or alkali flats to support nesting of this species.	No further actions are recommended for this species.
white-tailed kite *Elanus leucurus*	CFP	Yearlong resident of coastal and valley lowlands. Preys on small diurnal mammals and occasional birds, insects, reptiles, and amphibians.	**Unlikely.** Grassland or farmland is limited within lands surrounding the Study Area. The majority of undeveloped habitat is coastal scrub which does not typically support foraging by kite. More suitable grass or farmland is present to the south around the city of Half Moon Bay.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
yellow warbler *Setophaga petechia*	SSC, BCC	Summer resident throughout much of California. Breeds in riparian vegetation close to water, including streams and wet meadows. Microhabitat used for nesting variable, but dense willow growth is typical. Occurs widely on migration.	**No Potential.** The Study Area does not contain the heavily vegetated riparian vegetation required by this species for nesting.	No further actions are recommended for this species.
Reptiles and Amphibians				
western pond turtle *Actinemys marmorata*	SSC	Occurs in perennial ponds, lakes, rivers and streams with suitable basking habitat (mud banks, mats of floating vegetation, partially submerged logs) and submerged shelter.	**No Potential.** No suitable aquatic features are present to support this species.	No further actions are recommended for this species.
California tiger salamander *Ambystoma californiense*	FE/FT, ST, SSC	Inhabits grasslands, oak woodland and scrublands. Spends most of the year underground in mammal burrows and Adults utilize mammal burrows as estivation habitat.	**No Potential.** No suitable aquatic features are present to support breeding by this species. No suitable grasslands with burrow complexes are present to support estivation by this species.	No further actions are recommended for this species.
California giant salamander *Dicamptodon ensatus*	SSC	Occurs in the north-central Coast Ranges. Moist coniferous and mixed forests are typical habitat; also uses woodland and chaparral. Adults are terrestrial and fossorial, breeding in cold, permanent or semi-permanent streams. Larvae usually remain aquatic for over a year.	**Unlikely**. This species requires perennial stream habitat which is not present within the Study Area.	No further actions are recommended for this species.
Santa Cruz black salamander *Aneides niger*	SSC	Occurs only in southern San Mateo, Santa Cruz and western Santa Clara counties. Occurs in mixed deciduous woodland, coniferous forests, coastal grasslands. Found under rocks near streams, in talus, under damp logs, and other objects.	**Unlikely.** The Study Area is outside of the known range for this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
California red-legged frog *Rana aurora draytonii*	FT, SSC	Associated with quiet perennial to intermittent ponds, stream pools, and wetlands. Prefers shorelines with extensive vegetation. Documented to disperse through upland habitats after rains.	**Present.** This species has been observed on site.	See Section 4.4.2 for further discussion of this species.
San Francisco garter snake *Thamnophis sirtalis tetrataenia*	FE, SE, CFP, RP	Vicinity of freshwater marshes, ponds and slow moving streams in San Mateo County and extreme northern Santa Cruz County. Prefers dense cover and water depths of at least one foot. Upland areas near water are also very important.	**Unlikely.** The small seep within the Study Area does not have the depth, complexity or size to support adequate prey sources to support this species.	No further actions are recommended for this species.
Fish				
green sturgeon *Acipenser medirostris*	FT, SSC, NMFS	Anadromous. Spawns in the Sacramento and Klamath River systems. Lingering transients may be found throughout the San Francisco Bay Estuary, particularly juveniles.	**No Potential.** There are no suitable aquatic habitats within the Study Area to support any fish species.	No further actions are recommended for this species.
Delta smelt *Hypomesus transpacificus*	FT, ST, RP	Endemic to the Sacramento-San Joaquin delta area; found in areas where salt and freshwater systems meet. It occurs seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay.	**No Potential.** There are no suitable aquatic habitats within the Study Area to support any fish species.	No further actions are recommended for this species.
longfin smelt *Spirinchus thaleichthys*	ST, RP	Found in open waters of estuaries, mostly in the middle or bottom of the water column. This species prefers salinities of 15 to 30 ppt, but can be found in completely freshwater to almost pure seawater.	**No Potential.** There are no suitable aquatic habitats within the Study Area to support any fish species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
hardhead *Mylopharodon conocephalus*	SSC, FS sensitive	Low to mid-elevation streams in the Sacramento-San Joaquin drainage. Clear, deep pools with sand-gravel-boulder bottoms and slow water velocity. Not found where exotic Centrarchids predominate.	**No Potential.** There are no suitable aquatic habitats within the Study Area to support any fish species.	No further actions are recommended for this species.
steelhead - central CA coast DPS *Oncorhynchus mykiss irideus*	FT	Occurs from the Russian River south to Soquel Creek and Pajaro River. Also in San Francisco and San Pablo Bay Basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	**No Potential.** There are no suitable aquatic habitats within the Study Area to support any fish species.	No further actions are recommended for this species.
Coho salmon - central CA coast ESU *Oncorhynchus kisutch*	FE, SE	Federal listing includes populations between Punta Gorda and San Lorenzo River. State listing includes populations south of San Francisco Bay only. Occurs inland and in coastal marine waters. Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen.	**No Potential.** There are no suitable aquatic habitats within the Study Area to support any fish species.	No further actions are recommended for this species.
tidewater goby *Eucyclogobius newberryi*	FE, SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, 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.	**No Potential.** There are no suitable aquatic habitats within the Study Area to support any fish species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
Invertebrates				
bay checkerspot butterfly *Euphydryas editha bayensis*	FT, RP	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. *Plantago erecta* is the primary host plant; *Orthocarpus densiflorus* and *O. purpurscens* are the secondary host plants.	**No Potential.** This species has been extirpated from the San Francisco Peninsula.	No further actions are recommended for this species.
callippe silverspot butterfly *Speyeria callippe callippe*	FE	Restricted to the northern coastal scrub of the San Francisco peninsula. Hostplant is *Viola pedunculata*. Most adults found on east-facing slopes; males congregate on hilltops in search of females.	**No Potential.** On the San Francisco Peninsula, the only population of this species occurs on San Bruno Mountain. The population on San Bruno Mountain is separated from the Study Area by at least 3.5 miles of unobstructed development within Daly City and San Bruno. As such the population is isolated and has no potential to occur within the Study Area.	No further actions are recommended for this species.
Edgewood blind harvestman *Calicina minor*	SSI	Open grassland in areas of serpentine bedrock. Found on the underside of moist serpentine rocks near permanent springs. Originally collected at Crystal Springs Reservoir in San Mateo County, the species has not been collected there since the construction of Interstate 280. In spite of intensive phalangodid collecting in the Bay Area, the species is currently known only from Edgewood Park. Even where present, populations of this species are quite small.	**No Potential.** The Study Area is not within the limited known range of this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
incredible harvestman *Banksula incredula*	SSI	Known only from the north slope of San Bruno Mountain. Habitat is talus slopes with a dense chaparral canopy.	**No Potential.** The Study Area is not within the limited known range of this species.	No further actions are recommended for this species.
mission blue butterfly *Icaricia icarioides missionensis*	FE, RP	Inhabits grasslands of the San Francisco peninsula. Three larval host plants: *Lupinus albifrons, L. variicolor*, and *L. formosus*, of which *L. albifrons* is favored.	**Unlikely.** The Study Area is located adjacent to the San Francisco Peninsular watershed, which is cited as containing the southern most population of the species. However, WRA performed a survey during the blooming period for host plants used by this species and none of the suitable host plants were present within the Study Area. Therefore, due to the absence of any host plants, this species is unlikely to occur.	No further actions are recommended for this species.
monarch butterfly *Danaus plexippus*	SSI	Winter roost sites located in wind-protected tree groves, with nectar and water sources nearby; sites are generally on or close to the coast.	**Unlikely.** The Study Area does not contain Eucalyptus trees typically used for winter roosting by this species.	No further actions are recommended for this species.
Myrtle's silverspot butterfly *Speyeria zerene myrtleae*	FE, RP	Restricted to the foggy, coastal dunes/hills of the Point Reyes peninsula; extirpated from coastal San Mateo County. Larval foodplant thought to be Viola adunca.	**No Potential.** This species has been extirpated from San Mateo County (USFWS 2017b).	No further actions are recommended for this species.
Ricksecker's water scavenger beetle *Hydrochara rickseckeri*	SSI	Habitat is not known for this species. The very restricted range of this species is limited to the San Francisco Bay Area only. Adults can fly but are aquatic, as are larvae.	**Unlikely.** This species is only known to occur within large ponds or lakes which are absent from the Study Area. The only known occurrence of this species is approximately 3.5 miles away within Crystal Springs Reservoir (CDFW 2017).	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
San Bruno elfin butterfly *Incisalia (=Callophrys) mossii bayensis*	FE, RP	Limited to the vicinity of San Bruno Mountain, San Mateo County. Colonies are located on in rocky outcrops and cliffs in coastal scrub habitat on steep, north-facing slopes within the fog belt. Species range is tied to the distribution of the larval host plant, Sedum spathulifolium.	**Unlikely.** This species is closely tied to the only known host plant *Sedum spathulifolium* which occurs on north or northeast facing slopes. Aspects within the Study Area are south or west facing slopes which do not support typical conditions required by the species or its host plant. Additionally, the host plant was not observed during the site assessment on December 22, 2016.	No further actions are recommended for this species.
San Francisco tree lupine moth *Grapholita edwardsiana*	SMC LCP	Occurs only on sandy northern peninsula sites. Tree lupine (*Lupinus arboreus*) host the larvae of this species. This species is addressed in the San Mateo County LCP.	**Unlikely.** The Study Area contains *Lupinus arboreus*, the host plant for this species. However, this species is only regulated under the San Mateo County LCP, which restricts areas of concern to large populations of host plants (100 plants per 0.1 acres) within 1 mile of the coast. The Study Area is 2.75 miles from the coastline and is therefore not in an area of concern by the LCP. Because the Study Area is outside of this jurisdiction, the species is not considered special-status and no surveys or other measures are recomended.	No further actions are recommended for this species.
Tomales isopod *Caecidotea tomalensis*	SSI	Inhabits localized fresh-water ponds or streams with still or near-still water in several San Francisco Bay Area counties. Found in several localities from Sonoma to San Mateo counties. Most collections occurred in the 1980s and earlier, but in 2002 the species was collected in Glenbrook Creek at Point Reyes (LoBianco and Fong 2003). This aquatic species prefers practically still to slow-moving, vegetated water, such as from spring-fed ponds.	**Unlikely.** The Study Area contains only a small seep which does not support the still, vegetated, ponded water required by the species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE**	RECOMMENDATIONS
western bumble bee *Bombus occidentalis*	SSI	Formerly common throughout much of western North America; populations from southern British Columbia to central California have nearly disappeared (Xerces 2017). Occurs in a wide variety of habitat types. Nests are constructed annually in pre-existing cavities, usually on the ground (e.g. mammal burrows). Many plant species are visited and pollinated.	**Unlikely.** Mammal burrows were only rarely observed within the Study Area, limiting potential suitable habitat for the species.	No further actions are recommended for this species.

*** Key to status codes:**

FE	Federal Endangered
FT	Federal Threatened
FD	Federal Delisted
RP	Sensitive species included in a USFWS Recovery Plan or Draft Recovery Plan
SE	State Endangered
ST	State Threatened
SD	State Delisted
NMFS	National Marine Fisheries Service - Species of Concern
SSC	California Department of Fish and Game (CDFG) Species of Special Concern
WBWG	Western Bat Working Group Priority Species
BCC	U.S. Fish & Wildlife Service (USFWS) Birds of Conservation Concern
CFP	CDFW Fully Protected Animal
MMC	Marine Mammal Commission - Species of Special Concern
SSI	CDFW Special Status Invertebrates
Rank 1B.1	California Native Plant Society (CNPS) Rank 1B.1: Plants rare, threatened, or endangered in California and elsewhere (seriously threatened in California)
Rank 1B.2	California Native Plant Society (CNPS) Rank 1B.2: Plants rare, threatened, or endangered in California and elsewhere (moderately threatened in California)
Rank 2B.1	California Native Plant Society (CNPS) Rank 2B.1: Plants rare, threatened, or endangered in California, but more common elsewhere (seriously threatened in California)
Rank 2B.2	California Native Plant Society (CNPS) Rank 2B.2: Plants rare, threatened, or endangered in California, but more common elsewhere (moderately threatened in California)
Rank 3	CRPR Rank 3: Plants about which CNPS needs more information (a review list)
Rank 3.2	CRPR Rank 3.2: Plants about which CNPS needs more information (a review list; moderately threatened in California)

Rank 4.2	California Rare Plant Rank 4.2: Plants of Limited Distribution - A Watch List (moderately threatened in California)
Rank 4.3	California Rare Plant Rank 4.3: Plants of Limited Distribution - A Watch List (not very threatened in California)

****Potential species occurrence definitions:**

Present. Species was observed on the site during site visits or has been recorded (i.e. CNDDB, other reports) on the site recently.

High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species has a low probability of being found on the site.

No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

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APPENDIX F

STUDY AREA PHOTOGRAPHS

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Photograph 1. Photograph depicting ruderal/developed area including the former Gun Club building and terraced slope. Ruderal/developed areas are dominated by weedy herbaceous vegetation including French broom (*Genista monspessulana,* NL), dogtail grass (*Cynosurus echinatus,* NL) and mustard (*Hirschfeldia incana,* NL), with remnant ornamental shrubs including rosemary (*Rosmarinus officinalis,* NL) and Mexican sage (*Salvia leucantha*, NL) present associated with the building.

Photograph 2. Photograph depicting potential Corps and CCC jurisdictional seasonal emergent wetland located at Sample Point (SP) 08. The seasonal emergent wetland feature is dominated by hydrophytic vegetation including tall cyperus (*Cyperus eragrostis*, FACW), purple velvet grass (*Holcus lanatus*, FAC), and bitter cress (*Cardamine* cf. *oligosperma,* FAC). Hydrology indicators observed at SP 08 included Surface Water (A1) and Saturation (A3), and the soil sample met the Redox Dark Surface (F6) hydric soil indicator.

Photograph 3. Photograph depicting potential Corps and CCC jurisdictional scrub-shrub wetland represented by SP 03. The wetland feature is dominated by hydrophytic vegetation including arroyo willow (*Salix lasiolepis*, FACW), California blackberry (*Rubus ursinus*, FAC), and common bog rush (*Juncus effusus*, FACW). Hydrology indicators observed within this feature included Saturation (A3) and Oxidized Rhizospheres along Living Roots (C3), and the hydric soil criterion was met by Redox Dark Surface (F6).

Photograph 4. Photograph depicting non-wetland arroyo willow thicket located at SP 04. The sample point is dominated by hydrophytic vegetation including arroyo willow, and California blackberry. However, the feature lacked hydrology and hydric soil indicators, and is located on a slope underlain by well-drained sandy loam soils.

Photograph 5. Photograph depicting non-wetland arroyo thicket represented by SP 02 located on a steep slope underlain by well-drained sandy loam soils. This feature was dominated by arroyo willow and California blackberry. However, the feature lacked hydrology and hydric soil indicators. A solitary coast live oak (*Quercus agrifolia*, NL) can be seen growing within this feature in the background.

Photograph 6. Photograph depicting typical coyote brush scrub within the Study Area. This community is dominated by coyote brush (*Baccharis consanguinea*, NL), coffeeberry (*Frangula californica*; NL), poison oak (*Toxicodendron diversilobum*, FACU) , California blackberry, and sticky monkeyflower (*Mimulus aurantiacus*; FACU).

Photograph 7. Photograph depicting Douglas fir forest within the Study Area. This community is dominated by Douglas fir (*Pseudotsuga menziesii*, NL) within the tree canopy, with an understory dominated by non-native invasive English ivy (*Hedera helix*, FACU), with common native woody vines including poison oak and California blackberry present.

Photograph 8. Photograph depicting disturbed coastal scrub within the Study Area. This community has been periodically cleared of vegetation, and contains lower shrub cover than undisturbed coyote brush scrub with interstitial grassy areas dominated by non-native annual grasses. Common shrub species include coyote brush, poison oak, California blackberry, and an unknown species of lupine (*Lupinus* sp.). The herbaceous layer is dominated by ripgut brome (*Bromus diandrus,* NL), Italian ryegrass (*Festuca perennis,* FAC), and dogtail grass.

Photograph 9. Photograph depicting San Mateo tree lupine (*Lupinus arboreus* var. *eximius*) flowers from a plant observed in the vicinity of the proposed soil stockpile area.

Photograph 10. Photograph depicting San Mateo tree lupine individuals observed in disturbed coastal scrub habitat south of the proposed stockpile area.