PERMIT # CEQA 2019-0003

PLANNING PUBLIC HEARING – APPLICATION

ARCHITECTURAL & SITE REVIEW BOARD/PLANNING COMMISSION

Town of Woodside
2955 Woodside Road
Woodside, California 94062
650 851.6790
www.woodsidetown.org

Property Address: 2300 Woodside Road **APN #:** _____

Property Owner: Menlo Country Club **Applicant:** Menlo Country Club

Owner Address: 2300 Woodside Road **Applicant Address:** 2300 Woodside Road

Phone Number: (650) 366-1145 **Phone Number:** (650) 366-1145

Email: crobinson@menlocc.com **Email:** crobinson@menlocc.com

REQUEST FOR PUBLIC HEARING: (check all that apply)

- ☐ ASRA Design Review
- ☐ ASRB Conceptual Design Review
- ☐ ASRB Formal Design Review
- ☐ ASRB Formal Design Review w/ Staff
- ☐ Variance
- ☐ Lot Merger
- ☐ Lot Line Adjustment
- ☐ Subdivision/Land Division
- ☒ CEQA Review
- ☐ Exception to site development regulations specify which exception: _____
- ☐ Exception to setback
- ☐ Exception to maximum residence size
- ☐ Conditional Use Permit (new, amendment, or renewal)
- ☐ Amendment to Zoning Ordinance
- ☐ Amendment to General Plan
- ☒ Other Creek Bank Restoration

Description of Project:

Restoration of Creek Bank in two location, along Redwood Creek within the Menlo Country Club property

AFFIDAVIT

I declare that I am the owner (or authorized agent*) of the property involved in this application, and that the foregoing is true and correct in accordance with the requirements listed in Sections 153.914 of the Woodside Municipal Code. In order for this application to be complete, **the story poles are required to be erected at least 14 days prior to the meeting date**. If the story poles are not erected by that time, the application will be deemed incomplete, in which case the application will be considered by the Board at a later date.

Government Code Section 65105: Entry on land by planning agency personnel – In the performance of their functions, planning agency personnel may enter upon any land and make examinations and surveys, provided that the entries, examinations, and surveys do not interfere with the use of the land by those persons lawfully entitled to the possession thereof.

Signature of Owner: Robinson **Date:** 6/10/19

*Authorized agent must provide written verification from the property owner.

FOR STAFF TO COMPLETE

Fee: $_____ **Deposit:** _____ **Receipt #:** _____ **Received By:** _____ **Date:** _____

PERMIT # CUSE2019-0002

USE PERMIT – APPLICATION

Town of Woodside
2955 Woodside Road
Woodside, California 94062
650 851.6790
www.woodsidetown.org

Property Address: 2300 Woodside Road **APN #:** 069-161-020/030

Property Owner: Menlo Country Club **Applicant:** Clifford Bechtel

Owner Address: 2300 Woodside Road **Applicant Address:** 901 Waltermire St, Belmont

Phone Number: (650) 366-1145 **Phone Number:** (650) 333-0103

Email: crobinson@menlocc.com **Email:** cliffbechtel1@comcast.net

FINDINGS FOR USE PERMITS

(Section 153.927)

(A) After a public hearing, the Planning Commission may authorize a conditional use in any zoning district in which such use is permitted by the provisions of this chapter provided the facts presented at the public hearing allow the Planning Commission to make all of the following findings:

(1) Explain why the proposed use at such location is necessary or desirable to provide a facility or service which will contribute to the general well being of the neighborhood or community or which needs to be located where proposed due to the operating requirements of a public utility or service:

Project scope is to stabilize and repair a failed creek bank, at two locations, on the Menlo Country Club property. The failed areas have created a safety concern for the general operation of the golf course, as well as they are contributing to an increase in sediment (i.e. erosion) in the Redwood Creek Corridor.

These improvements will greatly benefit the neighborhood creek corridor by creating safe creek banks for golf course operations, eliminate the transmission of sediment downstream, improve hydraulic flow through the repaired areas, and create additional environmental habitat.

(2) Explain why the proposed use at the particular location will be consistent with the intent, purpose, and objectives of this chapter and the General Plan:

Protection and retention of a stable and environmental freindly creek cooridor is

(3) Explain why the proposed use in such location will not be detrimental to the health, safety, or general welfare of persons residing or working in the vicinity of such use or be injurious to property or improvements in the vicinity:

The work proposed is an enhancement to the creek corridor and will improve the health and safety of the creek.

(4) Provide specific information to show that the site for the proposed use is adequate in size, shape and topography to accommodate the proposed use:

The proposed restoration will be consistent with the upstream and downstream sections of the existing creek. The proposed grading will conform to the surround grades (see grading and drainage plans).

(5) Provide specific information to show that the site for the proposed use can be served by roads of adequate width and design to accommodate the quantity and type of traffic generated by such use:

The proposed creek bank restoration will have no traffic impact. There is no change to the existing use.

(6) Provide specific information to show that adequate utilities and other services required for such use exists or can be provided:

Not applicable.

I, Chris Robinson,MCC, hereby certify that I have read and understand the provisions of Section 153.920 of the Woodside Municipal Code, pertaining to Conditional Uses as it relates to the property herein under consideration and that the foregoing ~~is true and~~ correct to the best of my knowledge.

Owner's Signature: Robinson **Date:** 5/30/19

(B) If the facts do not establish that the proposed use meets the findings and qualifications set forth in this section, the Planning Commission shall deny the application for a conditional use.

CONDITIONS REQUIRED (Section 153.928):

(A) When authorizing any use permit, the Planning Commission shall prescribe such conditions, in addition to those specifically required by this chapter, as are, in the opinion of the Planning Commission, necessary to secure the objectives of this chapter and the General Plan. Special conditions which may be required shall include, but not be limited to, the provision of special yards and open spaces, the provision of landscaping and fencing, the surfacing of parking areas, the dedication of easements, and the regulation of signs, noise, odors, hours of operation, and other appropriate elements.

(B) The Planning Commission may also require the applicant or the property owner to provide such guarantees as the Planning Commission deems necessary to ensure compliance with the conditions imposed.

(C) The Planning Commission may also impose a time limitation and/or periodic review requirement for any use permit.

LAPSE OF APPROVAL (Section 153.917):

(A) Any approval by the Planning Director, Architectural and Site Review Administrator, or Planning Commission, given pursuant to the provisions of this Chapter 153 shall lapse and shall become null and void two years following the date on which the approval became effective, unless, prior to the expiration of two years, the approval has been acted upon (i.e., a Building Permit has been issued or the use has commenced). Approvals may be extended for an additional period of one year provided that, prior to the expiration of the initial two year approval period, an application for the renewal of the approval is filed with the Planning Director. The Planning Director may grant an extension for a period not exceeding one year where no change in conditions or requirements has occurred, but an application involving a change deemed to be significant by the Planning Director shall be treated as a new application, subject to all the provisions of this chapter.

(B) Exception. A use permit (excluding those issued under § 153.444) shall lapse and become null and void one year following the date on which the use permit became effective, unless, prior to the expiration of one year, the use has commenced; a Building Permit has been issued; a certificate of occupancy has been issued; or the use permit has been renewed for as additional period not to exceed one year by the Planning Commission upon the filing of a written request by the applicant.

BIOLOGICAL RESOURCES REPORT FOR THE MENLO COUNTRY CLUB BANK STABILIZATION PROJECT, WOODSIDE, SAN MATEO COUNTY, CALIFORNIA

June 2019

Prepared for:

Menlo Country Club
2300 Woodside Road
Woodside, CA 94062

Prepared by:

MOSAIC ASSOCIATES
1690 SAN PABLO AVENUE, SUITE D
PINOLE, CA 94564
PHONE: (510) 964-0394

ATTACHMENT 2

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APPENDICES

1.0 Introduction

This report contains the findings of a biological resources assessment that was conducted for the bank stabilization project adjacent to Holes 3 and 16 at the Menlo Country Club in Woodside, CA (Figure 1). The Study Area encompasses two reaches of Redwood Creek where active bank erosion is threatening the adjacent Holes 3 and 16 greens, sand traps and fairways. The Study Area is located within the Menlo Country Club property south of Alameda de las Pulgas and west of Woodside Road, in Woodside.

The purpose of this biological resources report is to characterize the habitats that are present within the Study Area, evaluate the impact of the proposed project on biological resources, and describe avoidance/minimization/mitigation measures to reduce potential impacts of the project on biological resources. This report is suitable for review and inclusion in the California Environmental Quality Act (CEQA) evaluation of the project's effects on biological resources that will be conducted by the Town of Woodside as the lead agency.

2.0 Project Description

The proposed project consists of the repair of two reaches of Redwood Creek adjacent to Holes 3 and 16 (Figures 2A and 2B). The existing, steeply incised and eroding creek banks will be graded back to create a gentler slope than the existing near-vertical banks, as well as a widened floodway. Emergent wetland vegetation in the bed of the channel, and ruderal species on the banks will be removed to facilitate construction. Large boulders will be installed along the toe of the slope in short sections of the bank repair area and adjacent to existing golf cart bridges to stabilize the repaired creek banks and protect existing oaks. The banks will be revegetated with appropriate wetland and riparian vegetation. During construction, the reaches of Redwood Creek subject to construction will be temporarily dewatered with cofferdams and bypass pipes. Approximately 136 linear feet of creek bed and bank at Hole 3 and 158 linear feet at Hole 16 will be disturbed during construction. Greens and roughs adjacent to the reaches of creek subject to construction as well as existing golf course maintenance areas will be used for staging and construction access. Construction equipment will be positioned at the creek top of bank.

3.0 Methods and Limitations

A background literature search and reconnaissance-level survey was conducted to determine whether special-status species (see definitions in Section 4) have potential to inhabit the Study Area based on documented occurrences, range distribution and suitable habitat. The primary sources for the search included the California Natural Diversity Data Base (CNDDB) and the online California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants. Special-status species were analyzed for their potential to occur in the Study Area based on the availability of suitable habitat. Appendix A (plants) and B (wildlife) describe special-status

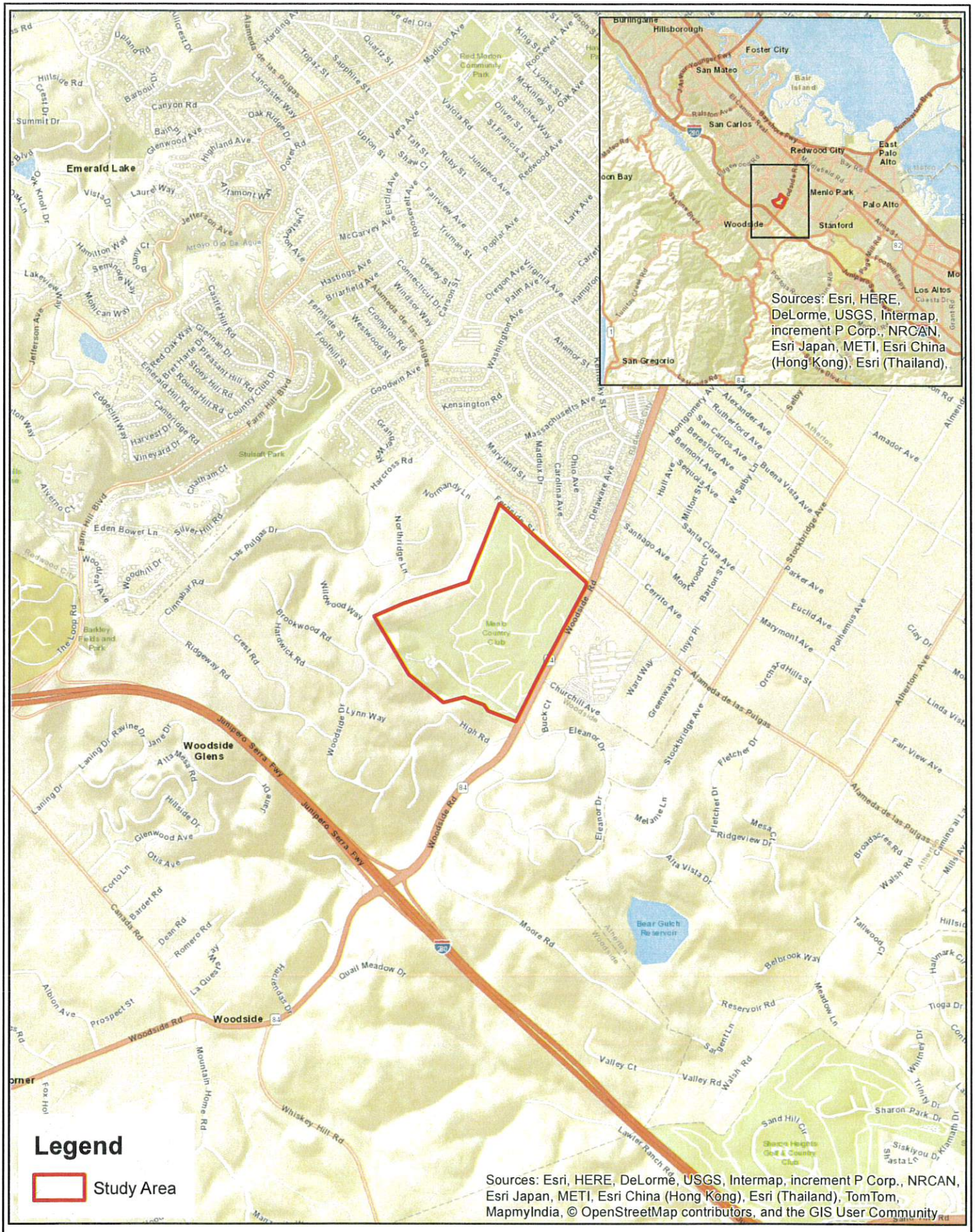
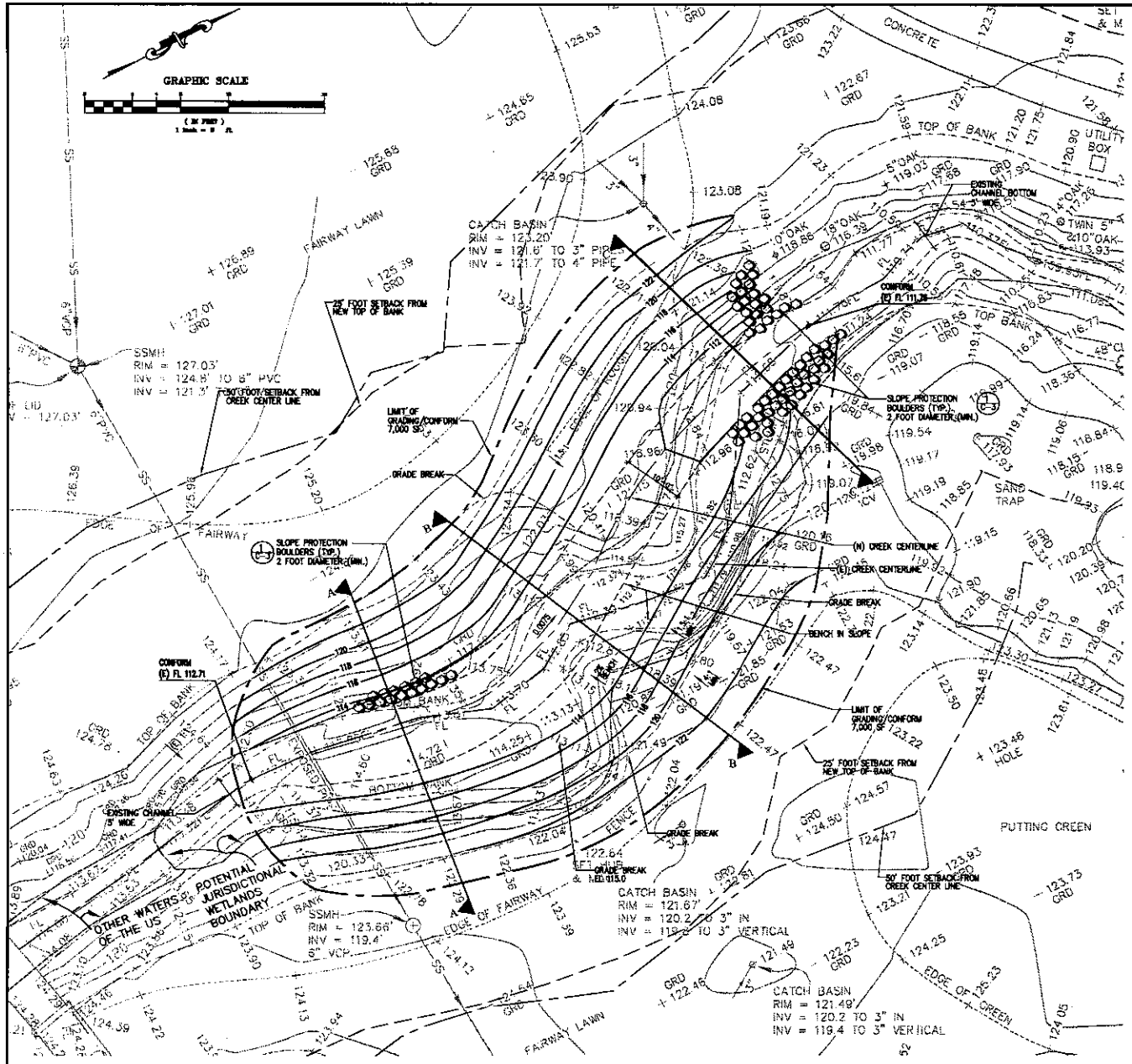
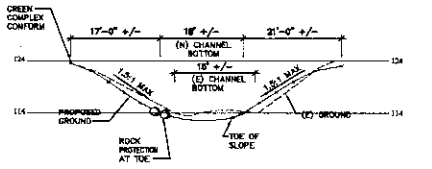


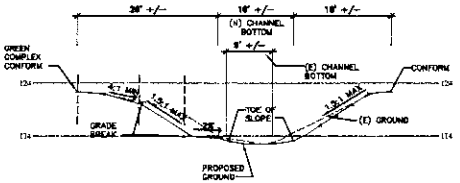
Figure 1. Study area locality map.



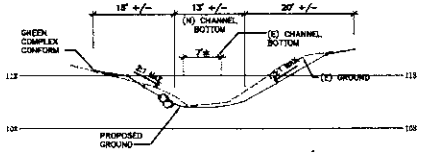
GRADING PLAN – HOLE #3 1/8"=1'-0"



SECTION A-A HOLE #3
SCALED 3/32" = 1'-0"



SECTION B-B HOLE #3
SCALED 3/32" = 1'-0"



SECTION C-C HOLE #3
SCALED 3/32" = 1'-0"

EARTHWORK TABLE	CUT	FILL
WORK	880 CY	900 CY
TOTAL	880 CY	900 CY
EXPORT	20 CY	

EXCESS MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A LEGAL MANNER. EARTHWORK QUANTITIES HAVE BEEN PROVIDED FOR PLANNING PURPOSES ONLY. CONTRACTOR SHALL ESTIMATE HIS/HER OWN QUANTITIES TO COMPLETE JOB PER CONTRACT WITH OWNER.

FIGURE 2A

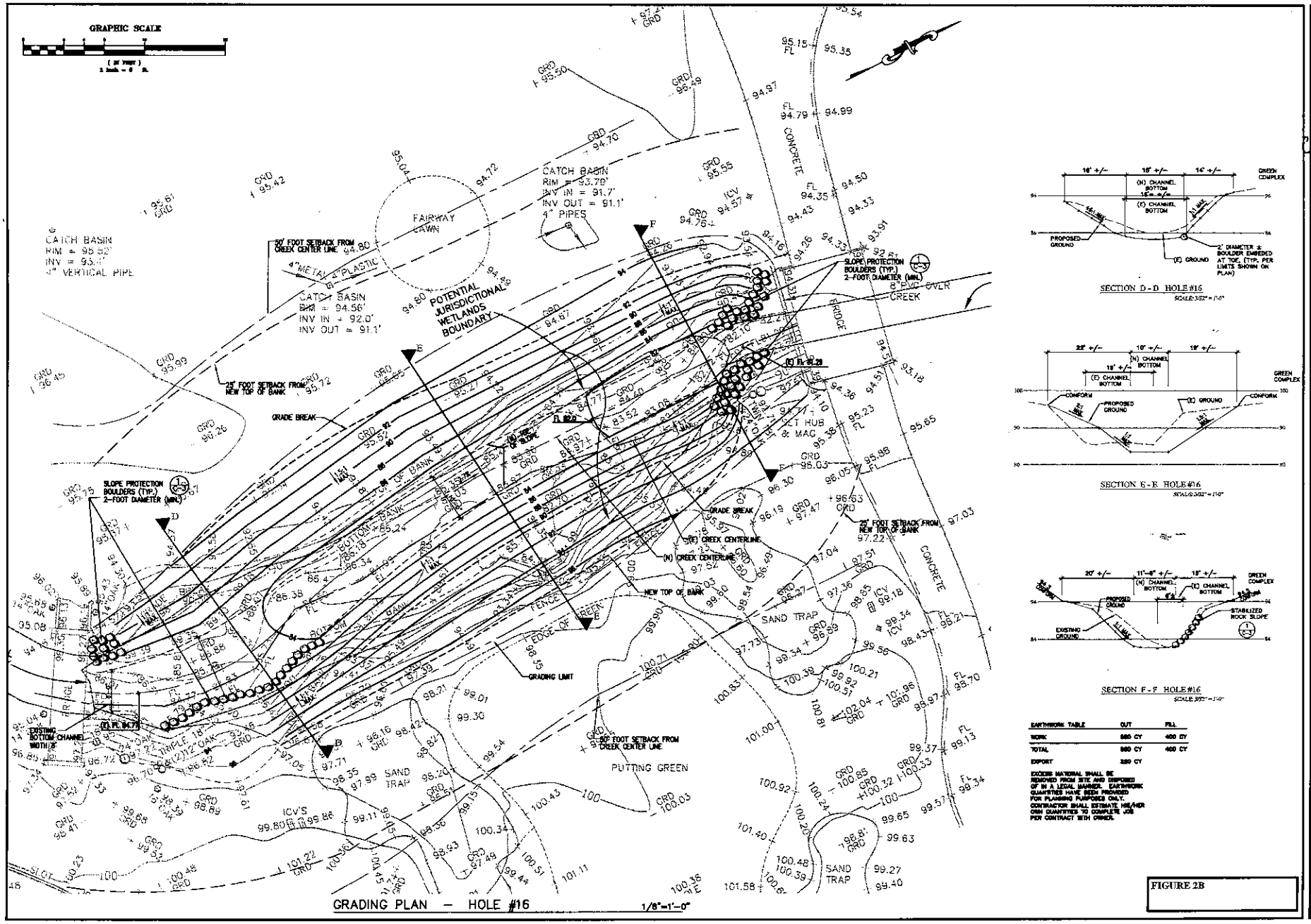
CLIFFORD BECHTEL AND ASSOCIATES
CLIFFORD BECHTEL PE

Menlo Country Club - Creek Bank Restoration
2900 WOODSIDE ROAD
SAN MATEO COUNTY
Woodside California

CONTENTS:
HOLE #3 GRADING PLAN

DATE 05/15/19
SCALE AS NOTED
REVISIONS:

DRAWN J.G.
CHECKED C.B.
JOB No. 2018643
SHEET NO. C-1.0
OF 11 SHEETS



GRADING PLAN – HOLE #16 1/8"=1'-0"

SECTION D - D HOLE #16

SCALE: 3/32" = 1'-0"

SECTION E - E HOLE #16

SCALE: 3/32" = 1'-0"

SECTION F - F HOLE #16

SCALE: 3/32" = 1'-0"

EARTHWORK TABLE	CUT	FILL
WORK	800 CY	400 CY
TOTAL	800 CY	400 CY
EXPORT	330 CY	

EXCESS MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A LEGAL MANNER. EARTHWORK QUANTITIES HAVE BEEN PROVIDED FOR PLANNING PURPOSES ONLY. CONTRACTOR SHALL ESTIMATE HIS/HER OWN QUANTITIES TO COMPLETE JOB PER CONTRACT WITH OWNER.

FIGURE 2B

CLIFFORD RECHTEL AND ASSOCIATES

CLIFFORD RECHTEL, PE

Menlo Country Club - HOLE 16 CREEK STABILIZATION
2900 WOODSIDE ROAD
SAN MATEO COUNTY
Woodside California

CONTENTS:

HOLE #16 GRADING PLAN

DATE 05/15/19

SCALE AS NOTED

REVISIONS:

DRAWN J.G.

CHECKED C.R.

JOB No. 3018643

SHEET NO.

C-1.1

OF 11 SHEETS

species documented to occur in the Study Area region and describes the potential for occurrence within the project site.

A reconnaissance-level survey of the Study Area was conducted by Judy Bendix of Mosaic Associates on August 27, 2018. The Study Area was surveyed on foot during daylight hours to document habitat conditions and assess the potential occurrence of special-status plant and wildlife species. The suitability of habitat conditions in the Study Area to support special-status species was assessed based on the presence of habitat characteristics, documented records from the region and the surveyor's knowledge of the habitat requirements of target species. Surrounding lands outside the Menlo Country Club were scanned with binoculars but were not physically surveyed.

An aquatic resources delineation was conducted (Appendix C) and land cover was mapped (Figure 3) by Tom Mahony of Coast Range Biological on July 16, 2018. An unpublished biological resources analysis by Monk & Associates (2017) for an earlier bank stabilization concept was reviewed. The results of California red-legged frog surveys conducted by Monk & Associates at the Menlo Country Club in 2010, 2011 and 2017, as well as an additional survey by MIG TRA Environmental Sciences on September 24, 2018 were reviewed and are reported in Section 6.2.

The analysis of impacts on biological resources is based on implementation of the project as described in Section 2, and detailed on Figures 2A and 2B.

4.0 Regulatory Background

The following sections describe the relevant regulatory context for this biological resources assessment, including applicable laws and regulations that were applied to the field investigation and the analysis of potential impacts of the project on biological resources.

4.1 Federal and State Threatened and Endangered Species Acts

State and federal legislation has provided the California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS) with mechanisms for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. The Federal Endangered Species Act (FESA) protects listed animal species from harm or "take" which is broadly defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Take can also include habitat modification or degradation that results in death or injury to a listed species. The USFWS has jurisdiction over federally listed threatened and endangered wildlife and plant species under FESA.

The California Endangered Species Act (CESA) prohibits the take of any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. "Take" is defined by the state of California as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill". The CDFW has jurisdiction over State-listed species, and also maintains lists of "Species of Special Concern" that are defined as species that appear to be vulnerable to

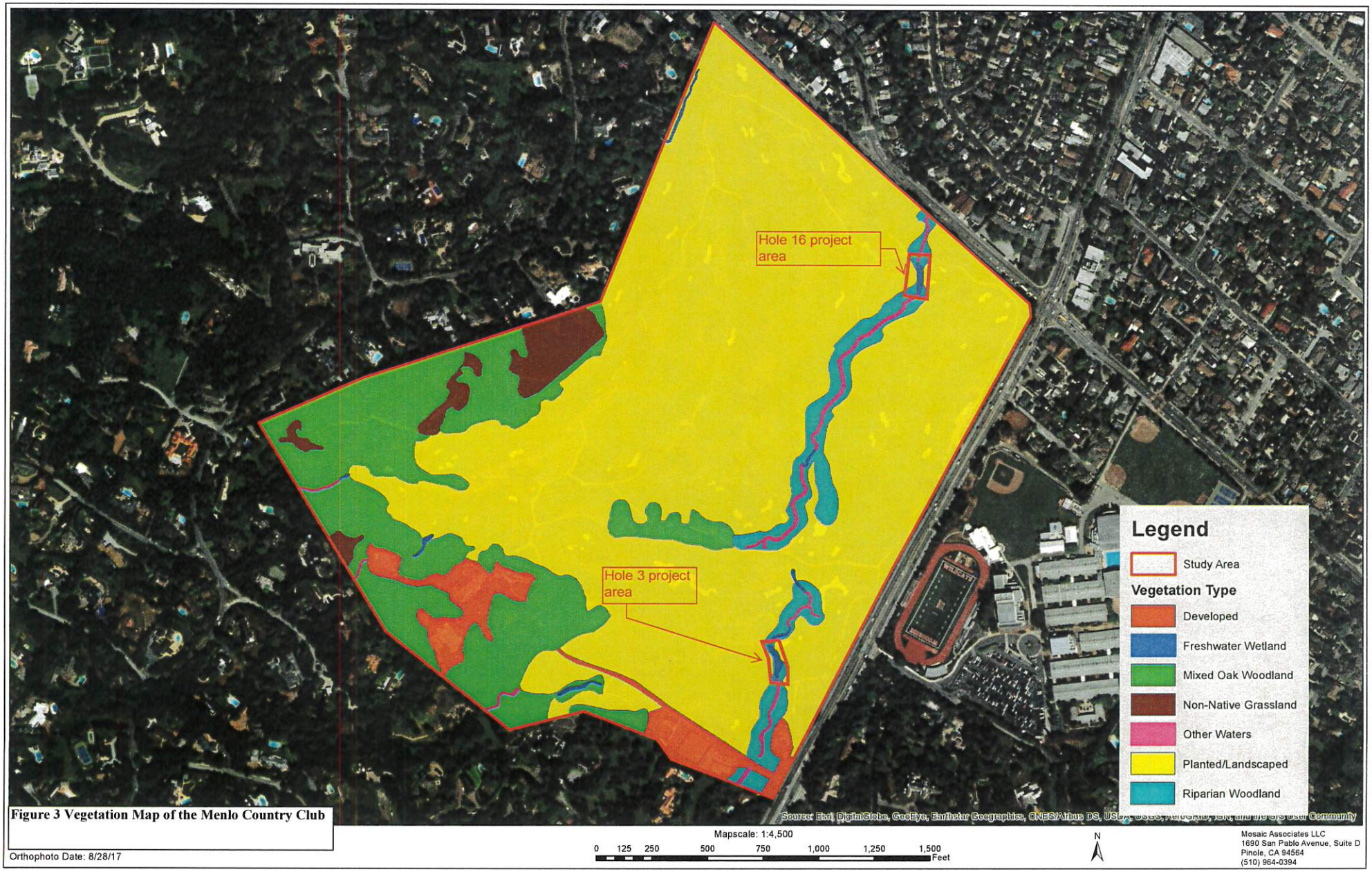


Figure 3 Vegetation Map of the Menlo Country Club

Orthophoto Date: 8/28/17

Mosaic Associates LLC
1690 San Pablo Avenue, Suite D
Pinole, CA 94564
(510) 964-0394

extinction because of declining populations, limited ranges, and/or continuing threats. California also protects animals classified as Fully Protected from take. Most but not all fully protected species are also listed under CESA.

Authorization may be required from the USFWS and/or CDFW if activities associated with a proposed project will result in the "take" of a listed species. Federal authorization for incidental take of a listed species is afforded through the Section 7 or the Section 10 process. The basis for incidental take authorization under CESA is described in Section 2081 (b) and (c) of California Fish and Game Code, while Section 2080.1 provides for a consistency determination when a federal incidental take statement has been issued pursuant to Section 7 or Section 10 of FESA.

The CDFW and the USFWS are responsible agencies under the California Environmental Quality Act (CEQA). Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

4.2 Special-Status Species

Special-status species are defined here to include: (1) all plants and animals that are listed under the Federal or State Endangered Species Acts as rare, threatened or endangered; (2) all federal and state candidates for listing; (3) CDFW Species of Special Concern; (4) plants that qualify under the definition of "rare" in the California Environmental Quality Act (CEQA), section 15380; (5) all plants with a Rare Plant Rank of 1 and 2 (and Lists 3 and 4 when they meet the CEQA definition of "rare") in CNPS (2019); (6) animal species that are "fully protected" in California Fish and Game Codes 3511, 4700, 5050, and 5515, (7) migratory nongame birds of management concern listed by the U.S. Fish and Wildlife Service; and (8) bat species that are designated on the Western Bat Working Group's (WBWG) Regional Bat Species Priority Matrix as "Red or High". The WBWG justifies this priority ranking as "Based on available information on distribution, status, ecology and known threats, this designation should result in these bat species being considered the highest priority for funding, planning, and conservation actions. Information about status and threats to most species could result in effective conservation actions being implemented should a commitment to management exist. These species are imperiled or are at high risk of imperilment."

Appendices A (plants) and B (animals) list special-status species known to occur in the Study Area region. While occurrences of special-status plants and wildlife are documented within three miles of the Study Area, no special-status species are likely to occur within it. Section 6 provides the context for this conclusion.

4.3 Native Plant Protection Act

The California Native Plant Protection Act (NPPA) was enacted in 1977 and allows the Fish and Game Commission to designate plants as rare or endangered. There are 64 species, subspecies, and varieties of plants that are protected as rare under the NPPA (Fish and Game Code section 1900 et seq.). The NPPA prohibits take of endangered or rare native plants, but includes some exceptions for agricultural and nursery operations; emergencies; and after properly notifying

CDFW for vegetation removal from canals, roads, and other sites, changes in land use, and in certain other situations.

4.4 Special-Status Natural Communities

Special-status natural communities are those that are considered rare in the region, support special-status plant or wildlife species, or receive regulatory protection (*i.e.,* Section 404 and 401 of the Clean Water Act, the CDFW Section1600 *et seq.* of the California Fish and Game Code, and/or the Porter-Cologne Act). In addition, the California Natural Diversity Data Base (CNDDB) has designated a number of communities as rare; these communities are given the highest inventory priority (Holland 1986, Sawyer et al. 2009). Three special-status natural communities, including northern coastal salt marsh, serpentine bunchgrass grassland and valley oak woodland are documented to occur in the region, but none are found within the Menlo Country Club.

4.5 Migratory Birds

State and federal law protect most bird species. The Migratory Bird Treaty Act (MBTA: 16 U.S.C., scc. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, their occupied nests and eggs.

Migratory birds are likely to be present and nest in or near the Study Area.

4.6 Birds of Prey

Birds of prey are protected in California under provisions of the State Fish and Game Code, Section 3503.5 (1992), which states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW.

Birds of prey may be present and nest in or near the Study Area.

4.7 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 U.S.C., scc. 668-668c) prohibits the take of bald or golden eagles, including their parts, nests, or eggs, unless authorized under a federal permit. The act prohibits any disturbance that directly affects an eagle or an active eagle nest as well as any disturbance caused by humans around a previously used nest site during a time when eagles are not present such that it agitates or bothers an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

Bald and golden eagles are not expected to nest in or near the Study Area.

4.8 Waters of the U.S. and State

Section 404 of the Clean Water Act (CWA) of 1972 regulates activities that result in the discharge of dredged or fill material into waters of the U.S., including wetlands. The primary intent of the CWA is to authorize the U.S. Environmental Protection Agency (EPA) to regulate water quality through the restriction of pollution discharges. The U.S. Army Corps of Engineers (USACE) has the principal authority to regulate discharges of dredged or fill material into waters of the U.S.

Pursuant to Section 401 of the Clean Water Act, an applicant for a federal permit to conduct any activity which may result in discharge into navigable waters must provide a certification from the Regional Water Quality Control Board (RWQCB) that such discharge will comply with the state water quality standards (Cal. Code Regs. Tit. 23, §§3830 *et seq.*).

Under the Porter-Cologne Water Quality Control Act (Cal. Water Code §§13000-14920), the RWQCB is authorized to regulate the discharge of waste that could affect the quality of the State's waters. "Waste" is broadly defined by the Porter-Cologne Act to include "sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation of whatever nature...." (Cal. Water Code §13050).

The CDFW exercises jurisdiction over wetland and riparian resources associated with rivers, streams, and lakes under California Fish and Game Code Section 1602. CDFW has the authority to regulate work that will substantially divert, obstruct, or change the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed. Areas subject to CDFW's jurisdiction over rivers, streams, creeks or lakes are usually bounded by the top-of-bank or the outermost edges of riparian vegetation. California Fish and Game Code Sections 5650 and 5652 generally prohibit disposal of waste within 150 feet of the top of bank, or placement where they may pass into waters of the state.

Discharges of fill material into the potentially jurisdictional wetlands and other waters of the U.S. would be regulated by the USACE and RWQCB, while CDFW would regulate work in riparian habitat and the bed, channel or bank of the drainage within the Study Area. Redwood Creek supports waters of the U.S. and State, including potentially jurisdictional wetlands. Because the bank stabilization project will require excavation and fill of waters of the U.S. and state, authorizations from the USACE, RWQCB and CDFW will be required.

4.9 Local Policies

The Woodside Town Council adopted a revised "General Plan 2012" in 2012. The General Plan has Open Space and Conservation Elements which are pertinent to the Menlo Country Club.

4.9.1 Open Space Element

The Menlo Country Club has a zoning Designation as "ORM" which is Open Space for Medium Intensity Outdoor Recreation. The proposed project is in compliance or consistent with all Policies and Strategies in the Open Space Element.

4.9.2 Conservation Element

The Conservation Element defines conservation goals, policies, and strategies for the conservation and utilization of natural resources, and protection of the aesthetic qualities of the community. Under the Conservation Elements of the General Plan, Policy CV 1.2 protects riparian corridors and water quality. This policy specifies that particular attention shall be given to protection of the natural water regimen in the planning, environmental review, and completion of all land development, land divisions, or land alteration projects. It also requires enforcement of riparian setbacks to maintain and buffer the riparian corridor during the review of projects, and the use of best management practices during construction to minimize water quality impacts.

4.9.3 Tree Protection

The Town of Woodside Ordinance 2007-534 (§153.170-§153.178) requires a tree destruction permit for all trees that are to be removed.

No trees will be removed or impacted by the proposed project. Trees adjacent to the construction area will be protected from disturbance by the establishment of tree protection zones, marked with orange construction fencing.

4.9.4 Stream Corridor Protection Ordinance 2006-534 (Section 153.205-209)

The Town of Woodside Ordinance 2006-534 (§153.205-§153.209) prescribes limitations to land use in stream corridors. A stream or creek bank is defined as the pint at which the break in slope occurs, and a stream corridor is defined as a horizontal distance of 50 feet, measured from each side of the center line of the stream or a horizontal distance of 25 feet, measured from the top of the stream or creek bank, whichever is greater. The Planning Commission may establish greater horizontal measurements for specific stream corridors. The proposed project is consistent with the Stream Corridor Protection Ordinance. The project would abate a source of erosion and sedimentation into Redwood Creek.

5.0 Study Area Description

The Menlo Country Club, originally developed in 1911, is located west of the intersection of Alameda de las Pulgas and Woodside Road in Woodside, CA (Figure 1). The Study Area encompasses approximately 0.9 acres of the Menlo Country Club golf course property including two reaches of Redwood Creek on which bank stabilization is proposed (Figure 3). The project site includes bank stabilization in an approximately 0.4-acre work area adjacent to Hole 3 near

the southeast corner of the golf course and a 0.5-acre work area adjacent to Hole 16 near the northeast corner of the course. The Study Area consists of manicured golf greens and the Redwood Creek channel and banks. Vegetation types within the study area include planted/landscaped (golf greens and associated features), freshwater wetland and other waters, and riparian woodland. The golf course surrounds the bank stabilization project Study Areas. Land uses surrounding the Country Club include single family residential development and Woodside High School.

5.1 Vegetation

Three vegetation types are present in the Study Area: Planted/Landscaped, Freshwater Wetland including Other Waters, and Riparian Woodland. A description of those vegetation types as well as associated wildlife use is provided below.

Planted/landscaped habitat consists of vegetated areas on and adjacent to the golf course that are planted and regularly watered and mowed, including fairways, tees, and greens composed of irrigated turfgrass, adjacent roughs seeded with native and non-native herbaceous species including Italian ryegrass (*Festuca perennis*[1]) and creeping wildrye (*Elymus triticoides*). This habitat also includes unvegetated areas such as golf cart paths and sand bunkers. Wildlife use of these areas is limited to occasional foraging by common species adapted to disturbed environments.

Freshwater Wetland occurs along Redwood Creek and is dominated by hydrophytic plant species including narrow-leafed cattail (*Typha angustifolia*), water cress (*Nasturtium officinale*), tall flatsedge (*Cyperus eragrostis*), spreading rush (*Juncus patens*), soft rush (*Juncus effusus*), iris-leaved rush (*Juncus xiphioides*), hairy willow herb (*Epilobium ciliatum*), rabbitsfoot grass (*Polypogon monspeliensis*), seep monkeyflower (*Mimulus guttatus*), and false waterpepper (*Persicaria hydropiperoides*). Wildlife found in this habitat include bullfrog (*Lithobates catesbeiana*), Pacific tree frog (*Pseudacris regilla*) and aquatic invertebrates.

Unvegetated other waters are present in Redwood Creek where hydrophytic plants (plants adapted to inundation or soil saturation) and/or hydric soils (soils formed under conditions of saturation, flooding or ponding) were lacking.

Riparian Woodland, consisting of the *Quercus agrifolia* Woodland Alliance[2] and the *Quercus lobata* Woodland Alliance, are present along Redwood Creek, and is dominated by a canopy of coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), California buckeye (*Aesculus californica*), willow (*Salix* spp.), and acacia (*Acacia* sp.), with an understory of native and non-native shrubs and herbaceous species, including poison oak (*Toxicodendron diversiloba*), snowberry (*Symphoricarpos sp.*), toyon (*Heteromeles arbutifolia*), California figwort (*Scrophularia californica*), California rose (*Rosa californica*), Himalaya blackberry (*Rubus armeniacus*), English ivy (*Hedera helix*), and cotoneaster (*Cotoneaster* sp.). Numerous bird species utilize this woodland habitat, including acorn woodpecker (*Melanerpes formicivorus*),

1 Botanical nomenclature follows Baldwin et al. (2012) and The Jepson Flora Project (2019).
2 Alliance nomenclature follows Sawyer et al. (2009).

Bewick's wren (*Thryomanes bewickii*), oak titmouse (*Baeolophus inornatus*), ruby-crowned kinglet (*Regulus calendula*), great horned owl (*Bubo virginianus*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*) and western screech owl (*Otus kennicottii*).

5.2 Geology, Climate and Soils

The Study Area is located between the eastern foothills of the Santa Cruz Mountains and San Francisco Bay, between ~81 and ~127 feet elevation (USGS 1961) (Figure 2). The majority of the study area is underlain by marine sedimentary rocks (shale, sandstone, conglomerate, and minor limestone; mostly well consolidated) of Eocene age, with the northern portion of the study area underlain by marine and non-marine (continental) sedimentary rocks of Pleistocene age (older alluvium, lake, playa, and terrace deposits) (California Geological Survey 2010). Average annual precipitation in the area is 29.59 inches, occurring primarily between October and May (Western Regional Climate Center 2018).

One soil type has been mapped on the study area in the Web Soil Survey (NRCS 2018a):

121—Orthents, cut and fill, 0 to 15 percent slopes

Orthents, cut and fill, 0 to 15 percent slopes is well drained, derived from alluvium and sandstone, and is found on alluvial fans, hills, and terraces. The soil profile is variable from 0 to 60 inches. The depth to water table and a restrictive feature is >80 inches below the surface.

This soil type is not listed as hydric for San Mateo County (NRCS 2018b). A soil map of the study area is included in the Aquatic Resources Delineation in Appendix C.

5.3 Hydrology

The principal hydrologic sources for the study area are direct precipitation, surface sheet flow from surrounding uplands, near-surface flow and groundwater discharge, golf course irrigation, and drainage through Redwood Creek. Redwood Creek originates southwest of Highway 280, drains northbound under Highway 280 and west of Woodside Road, then flows onto the Country Club property. Redwood Creek drains generally northbound in the Study Area, and exits the property just north of Hole 16, by discharging into a ~12-foot diameter concrete culvert under Alameda da las Pulgas. Redwood Creek emerges downstream of the culvert as a concrete flood control channel, where it continues through dense residential development before discharging into San Francisco Bay, approximately 3.5-miles north of the Study Area.

A map of aquatic resources is included in the aquatic resources delineation report in Appendix C.

6.0 Results

6.1 Special-status Plants

Based on searches of the CNDDB and CNPS Inventory of Rare and Endangered Plants (CNPS 2019), 33 special-status plant species are documented to occur in the Study Area region. A list of these species, their status, and typical habitats is presented in Appendix A. Figure 4 shows special-status plants occurring within three miles of the Study Area, including San Mateo thorn-mint (*Acanthomintha duttonii)* (FE, SE, 1B.1*)*, Franciscan onion (*Allium peninsulare* var. *franciscanum*) (1B.2), bent-flowered fiddleneck (*Amsinckia lunaris*)(1B.2), Kings Mountain manzanita (*Arctostaphylos regismontana*)(1B.2), fountain thistle (*Cirsium fontinale* var. *fontinale*)(FE, SE, 1B.1), San Francisco collinsia (*Collinsia multicolor*)(1B.2), western leatherwood (*Dirca occidentalis*)(1B.2), Hoover's button celery (*Eryngium aristulatum* var. *hooveri*)(1B.1), fragrant fritillary (*Fritillaria liliacia*)(1B.2),Marin western flax (*Hesperolinon congestum*)(FT, ST, 1B.1), woodland woolythreads (*Monolopia gracilens*)(1B.2), white-rayed pentachaeta (*Pentachaeta bellidiflora*)(FE, SE, 1B.1), San Francisco campion (*Silene verecunda* subsp. *verecunda*)(1B.2), and showy Rancheria clover (*Trifolium amoenum*)(FE, 1B.1). The Study Area is not located within any designated critical habitat for federally-listed plant species (ECOS accessed online, 4/5/19).

While many special-status plants are documented to occur nearby, including a record of San Mateo thorn-mint described to occur near the Menlo Golf Club (Figure 4), the project site lacks habitat suitable for special-status plants. Golf course features in the planted and landscaped portions of the Study Area are irrigated, mowed and maintained continuously. The Redwood Creek wetlands and stream channel as well as the riparian woodlands along the creek are surrounded by the grounds of the highly managed golf course, and are also subject to maintenance. With the level of landscape management to maintain the golf course, the Study Area does not provide habitat suitable for special-status plants. Accordingly, the project would not result in impact to special-status plants.

6.2 Special-status Wildlife

Based on a review of the CNDDB, 25 special-status wildlife species and seven non-special-status species with global or state rarity ratings are documented to occur within the region surrounding the Study Area. A list of these species, their status, and typical habitats is presented in Appendix B. Figure 5 shows the location of the 18 special-status animals documented to occur within three miles of the Study Area. In addition to these records from the CNDDB, three records of the federal and state endangered San Francisco garter snake (*Thamnophis sirtalis tetrataenia*) have been documented to occur within three miles of the Study Area (personal communication, Brian Acord CDFW, 4/3/1019). Because location information for this species is suppressed in the CNDDB, documented occurrences are not shown on Figure 5, but the nearest are about 2.5 miles south of the Study Area.

The Study Area is not located within any designated critical habitat for federally-listed wildlife species (ECOS accessed online, 4/5/19).

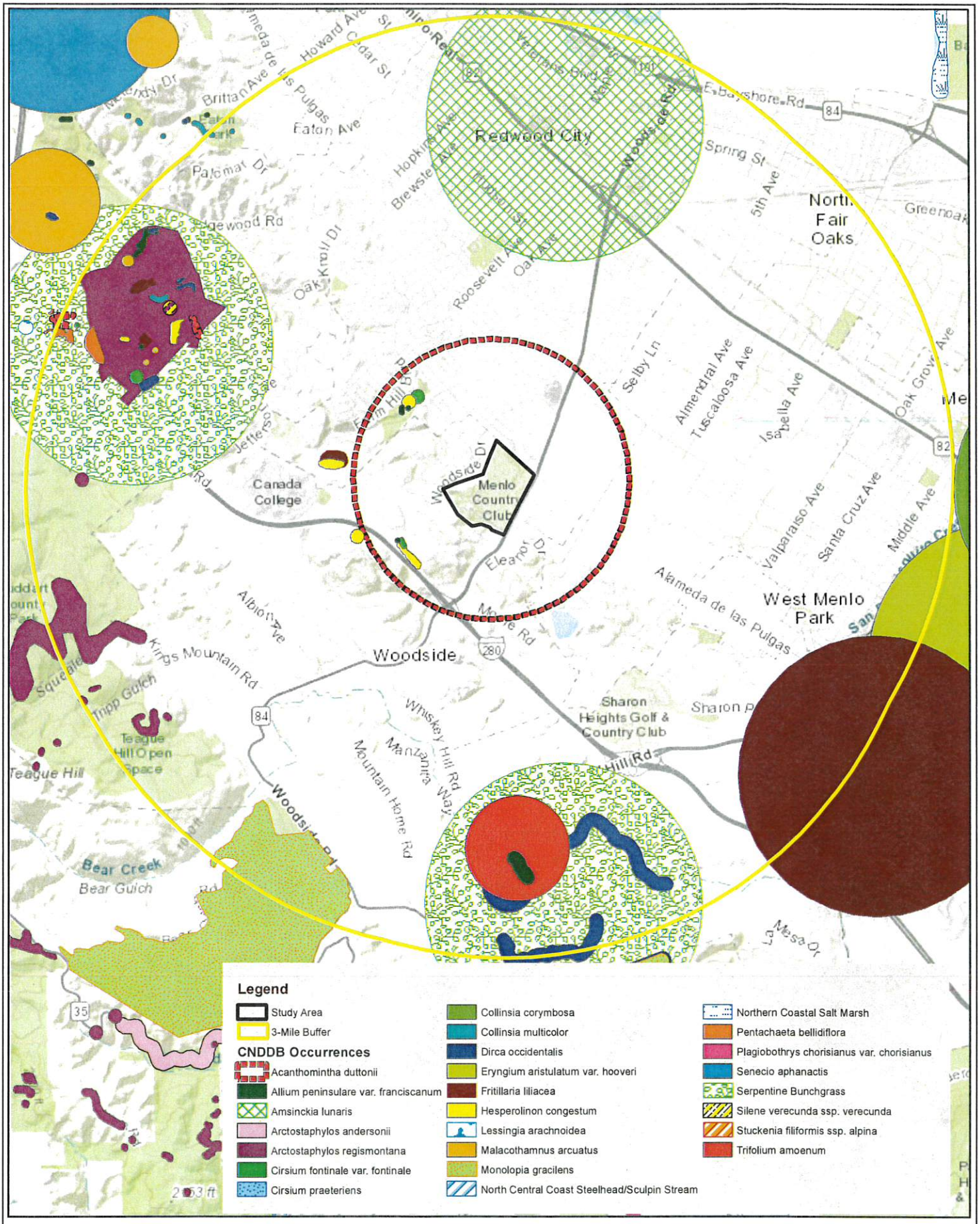


Figure 4. CNDDB map of special-status plant occurrences in the study area region.
Data Source: CNDDB (CDFW 2019).

Mapscale 1:55,000
0 0.5 1 2 Miles

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Mosaic Associates LLC
1690 San Pablo Avenue, Suite D
Pinole, CA 94564
(510) 964-0394

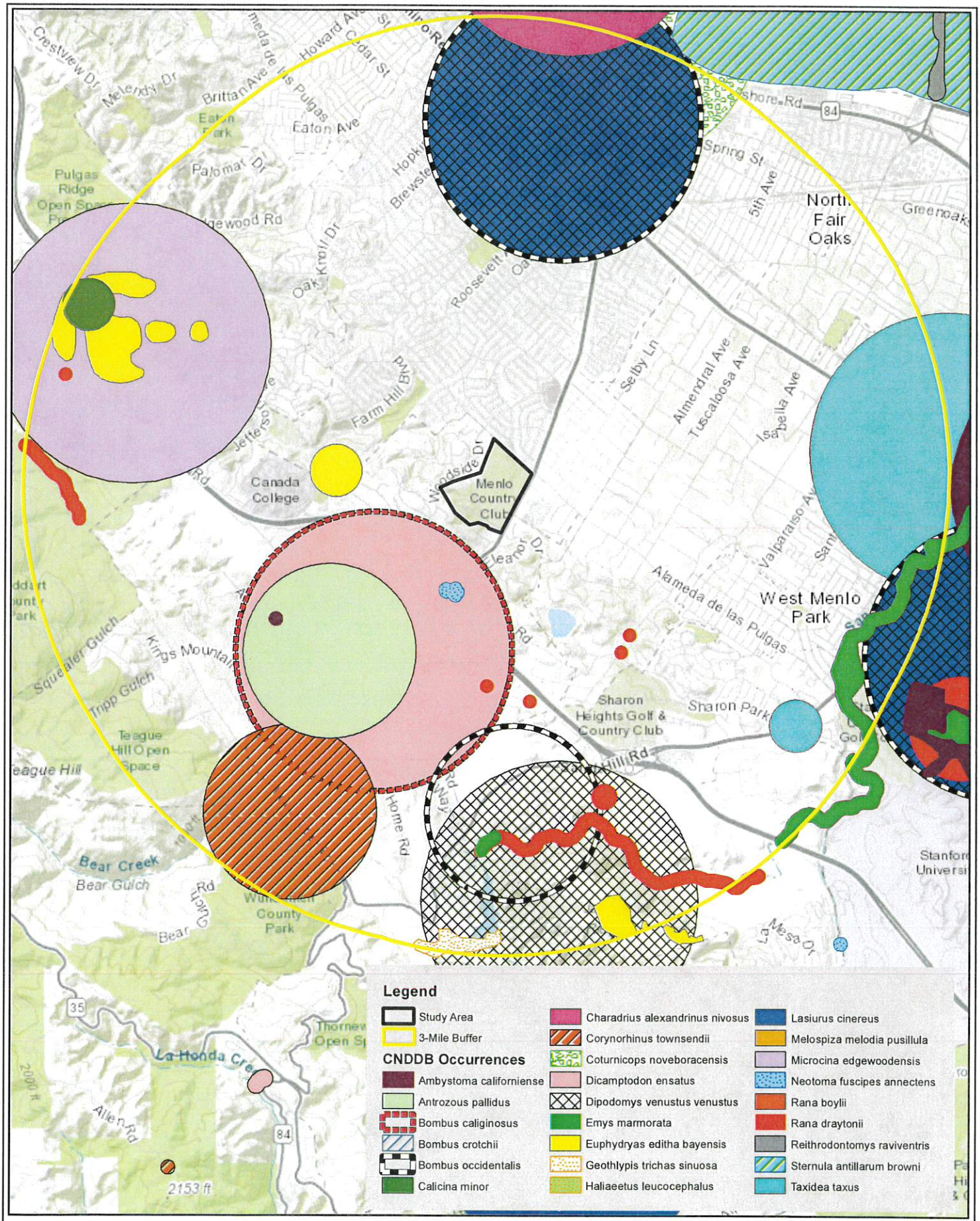

Figure 5. CNDDB map of special-status animal occurrences in the study area region.
Data Source:CNDDB (CDFW 2019).

Mosaic Associates LLC
1690 San Pablo Avenue, Suite D
Pinole, CA 94564
(510) 964-0394

Only two special-status wildlife species known from the region required further investigation to determine if they could be directly or indirectly affected by the proposed project. One is the California red-legged frog (*Rana draytonii*), a federally listed threatened species protected pursuant to the FESA. The other is the western pond turtle (*Emys marmorata*), a CDFW designated California species of special concern. Additional information on these species is provided below.

In addition, trees, shrubs, and herbaceous vegetation in the Study Area provide nesting habitat for other bird species afforded protection under the Migratory Birds Treaty Act (MBTA) and California Fish and Game codes.

The remaining special-status wildlife species described in Appendix B are considered absent or unlikely to inhabit the Study Area due to a lack of suitable habitat.

California Red-legged Frog (*Rana draytonii*), Federal Status: Threatened; State Status: Species of Special Concern

The California red-legged frog (CRLF) is a large (85-138 mm), nocturnal species that historically occupied much of central and southern California. The species requires still or slow-moving water during the breeding season, where it deposits large egg masses, usually attached to submerged or emergent vegetation. Breeding typically occurs between December and April, depending on annual environmental conditions and locality. Eggs require 6 to 12 days before hatching and metamorphosis occurs 3.5 to 7 months after hatching (Stebbins 2003). Following metamorphosis between July and September, juveniles generally do not travel far from aquatic habitats. Movements of individuals generally begin with the first rains of the weather-year, in response to receding water or following the breeding season (Fellers and Kleeman 2007). Radio-telemetry data indicates that individuals generally engage in straight-line movements irrespective of riparian corridors and can move up to two miles (Bulger et al. 2003; Fellers and Kleeman 2007). California red-legged frogs utilize a variety of water sources during the non-breeding season, and females are more likely than males to depart from perennial ponds shortly after depositing eggs (Fellers and Kleeman 2007). They may take refuge in small mammal burrows, leaf litter or other moist areas during periods of inactivity or whenever it is necessary to avoid desiccation (Rathbun et al. 1993; Jennings and Hayes 1994). Occurrence of this frog has shown to be negatively correlated with presence of introduced bullfrogs (Moyle 1973; Hayes and Jennings 1986, 1988), but both species coexist at some locations, particularly along the coast.

There are no recorded observations of California red-legged frog within one mile of the Menlo Country Club. The closest known records for California red-legged frog are located roughly 1.2 miles south of the project site and Highway 280, and southeast of the project site and Bear Gulch Reservoir (Figure 5). These records are from different watersheds than the Study Area. The intervening habitats between the project site and these record locations consists of moderately dense residential development and many busy streets. Two of the records are west of Highway 280. The residential development, busy streets and Highway 280 would constitute significant geographic barriers to overland California red-legged frog movements. As such, California red-legged frogs at these location would not likely ever migrate to Redwood Creek on the project site.

The Menlo Country Club has been surveyed in multiple years for the presence of the California red-legged frog. Two diurnal and two nocturnal California red-legged frog surveys were completed by Geoff Monk of Monk & Associates in 2010 and 2011 and again on September 21, 2017 (Monk & Associates 2017). The surveys were conducted over the entire reach of Redwood Creek above, on, and below the Menlo Country Club. No California red-legged frog egg masses, larvae, sub-adults, or adults were observed during these surveys which were conducted from 300 above to 50 feet below the Country Club, where Redwood Creek enters a concrete box channel which extends approximately five miles downstream before discharging into the tidal waters of the San Francisco Bay. The downstream habitats do not constitute suitable habitat for red-legged frog. An additional survey of Redwood Creek within the Study Area was conducted by MIG-TRA biologist Autumn Meisel on September 24, 2018. No red-legged frogs were detected.

During all surveys, bullfrogs were identified in Redwood Creek. Bullfrogs were scarce in most of Redwood Creek (ibid.). Mr. Monk concluded that the few that were observed were migrating frogs. He concluded that the creek is too shaded over much of its reach on the golf course to support bullfrogs and/or California red-legged frogs. Based on the negative survey findings for this species and the lack of connectivity between the project site and the closest occurrence of California red-legged frog, Mosaic Associates concurs with Monk & Associates' conclusion that California red-legged frogs are not present on or adjacent to the project site. The proposed project is not expected to adversely affect the California red-legged frog.

Western Pond Turtle (*Emys marmorata*), CA Species of Special Concern

Suitable breeding and rearing habitat for western pond turtle is generally characterized by warmer (15°C-35°C), slack, or slow-water habitats that have abundant basking sites and underwater refugia (Jennings 2000). These aquatic turtles can be present in intermittent and perennial streams, as well as small ponds to large reservoirs (Stebbins 2003). They also require upland areas for burrowing habitat where it digs nests and buries its eggs. The nests can be between 52 and 1210 feed from aquatic habitat (Jennings and Hayes 1992). Upland nest sites are typically found in area with sparse vegetation. Shady riparian habitat and planted agricultural fields do not provide suitable habitat (ibid.)

Pond turtles appear to be most abundant where there are large ponded bodies of water with dense stands of submergent or emergent vegetation, abundant aquatic invertebrate resources, suitable nearby nesting sites and the lack of native and exotic predators (Bury 1972, Jennings and Hayes 1994).

The closest western pond turtle record is located 2.1 miles south of the project site, in San Francisquito Creek (Figure 5). San Francisquito Creek is not hydrologically connected to Redwood Creek. There is no suitable western pond turtle habitat (e.g. pools, basking habitat, upland nesting habitat) within the Study Area. Monk & Associates conducted surveys for western pond turtles in Redwood Creek during the multiple years of surveys for California red-legged frogs and no western pond turtles were ever observed Monk & Associates (2017). They concluded that western pond turtles do not occur within the project site. Mosaic Associates concurs with Monk & Associates assessment of habitat for western pond turtle. Western pond

turtles are presumed to be absent from the Study Area and would not be impacted by the proposed project.

Other Nesting Native Bird Species

Suitable nesting habitat for other, non-listed bird species protected under the Migratory Bird Treaty Act (MBTA) and Fish and Game Codes occurs in trees and shrubs on the Study Area. Avoidance and Minimization Measures to address potential impacts to nesting birds during project development are included in Section 7.

7.0 Potential Impacts and Mitigation Measures

Impacts of the project and suggested mitigation measures are listed below. Impacts of the project would be rendered less-than-significant with implementation of the mitigation measures described below.

7.1 Significance Criteria

CEQA Guidelines section 15065 creates certain "mandatory findings of significance" that function as significance thresholds affecting certain biological resources. Pursuant to that section, a project will have a significant environmental effect if the project would:

- Substantially 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
- Substantially reduce the number or restrict the range of an endangered, rare or threatened species.

In addition, based upon the criteria presented in Appendix G of the *CEQA Guidelines,* implementation of the proposed project would have a significant impact if it were to cause any of the following:

- A substantial adverse effect, either directly or through habitat modifications, on any special-status species identified as a candidate, sensitive, or special-status species in local or regional plans, policies or regulations, or by the CDFW or USFWS.
- A substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFW or USFWS.
- 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.
- Substantial interference 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 impact analysis contained in this section assumes that the site will be developed in a manner and scale substantially similar to the depiction on Figures 2A and 2B.

7.2 Impacts to Special-status Plants

While records of special-status plants are documented to occur within three miles of the project site, the Study Area itself does not provide habitat suitable for special-status plants. This is due to the absence of habitat requirements that support rare plants (e.g. serpentine soils, vernal pools, valley and foothill grassland, among others), and the long history of active golf course management along Redwood Creek and in the manicured golf course landscape of the Study Area that will be impacted by the proposed bank stabilization project. Given the absence of suitable habitat within the Study Area, there is no potential for special-status plants to occur within the project site and rare plant surveys of the project site are not warranted. The project would have no impact on special-status plants. Accordingly, no mitigation is required.

7.3 Impacts to Special-status Animals

Due to the absence of suitable habitat and isolation of the Study Area from occupied habitats within three miles of the Study Area, none of the 25 special-status or seven non-special-status wildlife species documented to occur within the Study Area region are likely to occur within the project site. Accordingly, the proposed project would have no impact on special-status wildlife. Trees and shrubs within and adjacent to the Study Area do provide suitable nesting habitat for birds of prey and other migratory birds. Project construction has the potential to result in adverse impacts to active nests of birds of prey and passerine birds.

Impact BIO-1. Nesting Raptors (Birds of Prey) and Passerine Birds. Less than Significant with Mitigation

Suitable nesting habitat for sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*Accipiter cooperii*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), western screech-owl (*Otus kennicottii*), and great horned owl (*Bubo virginianus*) is present in and near the Study Area. These raptors and their active nests would be protected by the Migratory Bird Treaty Act. In addition, all nesting birds, their eggs and young would be protected under California Fish and Game Code sections that protect nesting birds (§3503). Similarly, most common songbirds that frequent the Menlo Country Club would be protected pursuant to the Migratory Bird Treaty Act and California Fish and Game Code (Sections 3503, 3503.5) that protect nesting birds. Construction of the project during the nesting season (February 1 – August 31) has the potential to result in the direct loss of an active nest or "take" of tree-, shrub- or ground-nesting migratory birds and/or birds of prey or create disturbance that could result in nest abandonment. This would be a significant impact. With implementation of the mitigation measure below, project impacts on special-status birds and non-special-status migratory birds and birds of prey would be less than significant.

Mitigation Measure BIO-1. If site disturbance for the proposed project commences between February 1 and August 31, a qualified biologist shall conduct a pre-construction bird nesting survey. If nests of either migratory birds or birds of prey are detected on or adjacent to the site, a no-disturbance buffer (generally 50 feet for passerines and 300 feet for raptors) in which no new site disturbance is permitted shall be observed until August 31, or the qualified biologist determines that the young are foraging independently. The size of the no-disturbance buffer shall be determined by a qualified biologist, and shall take into account local site features and existing sources of potential disturbance. If more than 14 days elapses between the survey and the start of construction, the survey shall be repeated.

7.4 Impacts to Riparian Trees, Wetlands and Other Waters

The project will not require the removal of any riparian or upland trees. Accordingly, the project will have no impact on riparian trees and no mitigation is warranted.

Impact BIO-2. Wetlands and Other Waters

The bank stabilization project site is situated along Redwood Creek, which supports both freshwater wetland habitat and unvegetated other waters in the stream channel. In order to repair the failing creek banks, project construction will require the reconstruction of approximately 294 linear feet of the bed and bank of Redwood Creek adjacent to Holes 3 and 16. Impacts to wetland and ruderal riparian vegetation on the creek banks are detailed in Table 1.

Table 1. Impacts to Wetland & Ruderal Riparian Habitat, (P) Permanent, (T) Temporary

Jurisdictional Area	Area of Fill ac (acres), SF (square feet)	Area of Excavation ac (acres), SF (square feet)
Potentially Jurisdictional Wetlands[1] (waters of the U.S. & State)	0.07 ac (3,014 SF) (P) 0.003 ac (116 SF) (T)	0.07 ac (2,920 SF) (P)
Ruderal Riparian Habitat (waters of the State)	0.02 ac (968 SF) (P)	0.05 ac (2,056 SF) (P)

[1] Subject to determination by U.S. Army Corps of Engineers; mapping based on Aquatic Resources Delineation Report (Appendix C)

Creek bank repairs will require the excavation of 0.07 acres (2,920 SF) of soil, and discharge of 0.07 acres (3,014 SF) of earthen and rock fill material in the freshwater wetlands adjacent to Holes 3 and 16. Sandbag cofferdams used to dewater the work area will require the temporary discharge of 0.003 acres (116 SF) of fill in the channel. Wetland vegetation growing in the bed and on the banks of Redwood Creek, as well as ruderal and native plants on the creek banks within the project construction area will be removed during construction.

Authorization for the discharge of fill into waters of the U.S. and state will be required under Sections 401 (RWQCB) and 404 of the Clean Water Act (Corps of Engineers), and Section 1600 of the California Fish and Wildlife Code (CDFW). The removal of riparian vegetation is also

regulated by CDFW under Section 1600 of Fish and Wildlife Code. State and federal agencies will require avoidance, minimization and compensatory mitigation for the loss of wetland habitat.

The discharge of fill material into freshwater wetlands and disturbance of ruderal riparian vegetation along Redwood Creek would be significant, but implementation of the mitigation measures described below would reduce this impact to a less than significant level.

Mitigation Measure BIO-2(a). The removal of riparian vegetation will be avoided and minimized to the extent feasible. Mitigation to compensate for the construction-related disturbance and loss of riparian vegetation will be accomplished through the restoration of riparian vegetation along the banks of the reaches of Redwood Creek disturbed during construction.

A riparian restoration plan detailing the following elements shall be prepared:

- The number, species and location of riparian mitigation plantings that will be planted in the restoration area;
- Performance standards that will be required for the restoration effort to be deemed a success, including survival, vigor and growth of riparian plantings;
- The time of year for planting and method of supplemental watering during the establishment period;
- The monitoring period, which shall be not less than five years to ensure that restoration plantings and natural recruits are established;
- Adaptive management and maintenance activities, including weeding, supplemental irrigation, site protection; and
- Responsibility for maintaining, monitoring and ensuring the preservation of the mitigation site in perpetuity.

Mitigation Measure BIO-2(b). The fill of jurisdictional wetlands will be avoided and minimized to the extent feasible. Authorization for the fill of waters of the U.S. and state shall be obtained by the applicant prior to the start of construction. Mitigation for the fill of wetlands shall be accomplished through the restoration of freshwater wetlands at not less than a 1:1 replacement to loss ratio within the bank stabilization project area or elsewhere along Redwood Creek within the Menlo Country Club, or at an approved wetland mitigation bank. The mitigation goal should be to create and enhance wetland and aquatic habitat with habitat functions and values greater than or equal to those that will be impacted by the proposed project.

Wetland mitigation within the Menlo Country Club would be described in a wetland mitigation plan that would:

- Be prepared consistent with the Final Regional Compensatory Mitigation and Monitoring Guidelines (USACE 2015) and the Compensatory Mitigation for Losses of Aquatic Resources: Final Rule (USACE 2008);
- Define the location of all restoration activities;
- Describe measures that would ensure that adjacent land uses would not adversely affect the restored wetland habitat.

- Provide evidence of adequate hydrology to support restored wetland habitat;
- Identify the species, quantity, and location of plants to be installed in the restoration area;
- Identify the time of year for planting and method for supplemental watering, if any, during the establishment period;
- Identify the monitoring period, which shall be not less than five years for wetland restoration;
- Define success criteria that will be required for restoration efforts to be deemed a success;
- Define adaptive management and maintenance activities, including weeding, supplemental irrigation, site protection; and
- Define responsibility for maintaining, monitoring and ensuring the preservation of the mitigation site in perpetuity.

The project sponsor shall comply with all terms of the permits issued by these agencies, including mitigation requirements, and shall provide proof of compliance to the Town of Woodside prior to issuance of a grading permit.

Impact BIO-3 Water Quality

Project construction could result in the degradation of water quality in Redwood Creek on site and in downstream waters. Construction will require earthwork in the channel and on the creek banks that will leave the soil barren of vegetation and vulnerable to sheet or gully erosion. Eroded soil can be carried as sediment in surface runoff to be deposited in creeks. The deposition of sediment in sensitive habitats would be significant, but implementation of the mitigation measure described below would reduce this impact to a less than significant level.

Mitigation Measure BIO-3. Adverse impacts to water quality shall be avoided and minimized by implementing the following measures:

- Redwood Creek flow will be diverted around the project construction areas with the use of cofferdams and bypass pipes to ensure that construction activities do not occur in a live stream channel. The cofferdams and bypass pipes will be installed prior to any earthwork in the channel, and will be removed after construction activities are complete.
- Prior to the start of site disturbance activities, construction barrier and silt fencing shall be installed between the construction areas and adjacent Redwood Creek habitats to prevent the movement of construction equipment and inadvertent discharge of sediment outside of the work area. Any debris that is inadvertently deposited into these features during construction shall be removed in a manner that minimizes disturbance.
- Contractors shall be required to implement a Storm Water Pollution Prevention Plan (SWPPP) that describes Best Management Practices including the conduct of all work according to site-specific construction plans that minimize the potential for sediment input to the aquatic system, avoiding impacts to areas outside the staked and fenced limits of construction, covering bare areas prior to storm events and protecting disturbed areas with approved erosion control materials.

7.5 Interference with Movement of Native Fish, Wildlife, Established Wildlife Corridors

The project will not interfere with the movement of native fish or wildlife or interfere with an established wildlife corridor. The bank stabilization project areas are surrounded by the Menlo Country Club, which is surrounded by existing development. No impact to fish and wildlife movement or established wildlife corridors will occur, and thus no mitigation is required.

7.6 Conflict with Local Policies or Ordinances

The proposed project does not conflict with local policies or ordinances related to biological resources.

7.7 Conflict with Local, Regional or Statewide Habitat Conservation Plans

No local, regional or statewide habitat conservation plans have been adopted for the area in which the proposed project is located.

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APPENDIX A Special-Status Plants from Study Area Region

Appendix A. Special-Status Plants Documented to Occur in the Study Area Region[1]: CNDDB Rare Find and CNPS On-line Inventory (4/12/2019)

Species	Status	Habitat Requirements	Probability of Occurrence on Project Site
Acanthomintha duttonii San Mateo thorn-mint	FE, SE, 1B.1	Chaparral, valley and foothill grassland (serpentinite), 50-300 m. Blooms April-June.	None. Project site lacks suitable habitat.
Allium peninsulare var. *franciscanum* Franciscan onion	1B.2	Cismontane woodland, valley and foothill grassland (clay, often on serpentine), dry hillsides, 100-300 m. Blooms May-June.	None. Project site lacks suitable habitat.
Amsinckia lunaris bent-flowered fiddleneck	1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland, 3-500 m. Blooms March-June.	None. Project site lacks suitable habitat.
Arctostaphylos andersonii Santa Cruz manzanita	1B.2	Broadleafed upland forest, chaparral, North Coast coniferous forest (openings, edges), 60-730 m. Blooms November-April.	None. Project site lacks suitable habitat.
Arctostaphylos regismontana Kings Mountain manzanita	1B.2	Broadleafed upland forest, chaparral, North Coast coniferous forest, 305-730 m. Blooms January-April.	None. Project site lacks suitable habitat.
Astragalus pycnostachyus var. *pycnostachyus* coastal marsh milk-vetch	1B.2	Coastal dunes (mesic), coastal scrub, marshes and swamps (coastal salt, streamsides), 0-30 m. Blooms April-October.	None. Project site lacks suitable habitat.
California macrophylla round-leaved filaree	1B.2	Cismontane woodland, valley and foothill grassland, 15-1,200 m. Blooms March-May.	None. Project site lacks suitable habitat.
Centromadia parryi subsp. *congdonii* Congdon't tarplant	1B.1	Valley and foothill grassland (alkaline), 1-230 m. Blooms May-October.	None. Project site lacks suitable habitat.

[1] Search area included USGS quads for Palo Alto, Woodside, San Mateo, Redwood Point, Newark, Mountain View, La Honda, Mindego Hill, Cupertino

Species	Status	Habitat Requirements	Probability of Occurrence on Project Site
Chloropyron maritimum ssp. *palustre* Point Reyes salty bird's-beak	1B.2	Marshes and swamps (coastal salt), 0-10 m. Blooms June-October.	None. Project site lacks suitable habitat.
Cirsium fontinale var. *fontinale* fountain thistle	FE, SE, 1B.1	Chaparral (openings), valley and foothill grassland (serpentinite seeps), 90-175 m. Blooms June-October.	None. Project site lacks suitable habitat.
Collinsia multicolor San Francisco collinsia	1B.2	Closed-cone coniferous forest, coastal scrub (sometimes serpentinite), 30-250 m. Blooms March-May.	None. Project site lacks suitable habitat.
Dirca occidentalis western leatherwood	1B.2	Broadleafed upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, North Coast coniferous forest, riparian forest and woodland. Usually on brushy slopes, mesic sites in mixed evergreen and foothill woodland communities, 30-550 m. Deciduous shrub, blooms January-April.	None. Project site lacks suitable habitat.
Eriophyllum latilobum San Mateo wooly sunflower	FE, SE, 1B.1	Cismontane woodland (serpentine, often on roadcuts), 45-150 m. Blooms May-June.	None. Project site lacks suitable habitat.
Eryngium aristulatum var. *hooveri* Hoover's button-celery	1B.1	Vernal pools, 3-45 m. Blooms in July.	None. Project site lacks suitable habitat.
Eryngium jepsonii Jepson's coyote-thistle	1B.2	Valley and foothill grassland, vernal pools (clay), 3-300 m. Blooms April-August.	None. Project site lacks suitable habitat.
Fissidens pauperculus minute pocket moss	1B.2	North Coast coniferous forest (damp coastal soil), 10-1,024 m.	None. Project site lacks suitable habitat.
Fritillaria liliacea fragrant fritillary	1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland (often serpentinite), 3-410 m. Blooms February-April.	None. Project site lacks suitable habitat.
Hesperolinon congestum Marin western flax	FT, ST, 1B.1	Chaparral, valley and foothill grassland (serpentinite), 5-370 m. Blooms April-June.	None. Project site lacks suitable habitat.

Species	Status	Habitat Requirements	Probability of Occurrence on Project Site
Legenere limosa legenere	1B.1	Vernal pools, 1-880 m. Blooms April-June.	None. Project site lacks suitable habitat.
Lessingia arachnoidea Crystal Springs lessingia	1B.2	Cismontane woodland, coastal scrub, valley and foothill grassland (serpentinite), 60-200 m. Blooms July-October.	None. Project site lacks suitable habitat.
Malacothamnus arcuatus arcuate bush mallow	1B.2	Chaparral, 15-355 m. Blooms April-September.	None. Project site lacks suitable habitat.
Monolopia gracilens woodland woollythreads	1B.2	Broadleafed upland forest and chaparral openings, cismontane woodland, North Coast coniferous forest openings, valley and foothill grassland (serpentine), 100-1,200 m. Blooms March-July.	None. Project site lacks suitable habitat.
Pedicularis dudleyi Dudley's lousewort	1B.2, SR	Chaparral (maritime), cismontane woodland, North Coast coniferous forest, valley and foothill grassland, 60 to 900 m. Blooms April-June.	None. Project site lacks suitable habitat.
Pentachaeta bellidiflora white-rayed pentachaeta	FE, SE, 1B.1	Valley and foothill grassland. Open dry rocky slopes and grassy areas, often on soils derived from serpentine bedrock, 35-620 m. Blooms March-May.	None. Project site lacks suitable habitat.
Piperia candida white-flowered rein orchid	1B.2	Broadleafed upland forest, lower montane coniferous forest, North Coast coniferous forest (sometimes serpentinite), 30-1,310 m. Blooms May-September.	None. Project site lacks suitable habitat.
Plagiobothrys chorisianus var. *chorisianus* Choris's popcorn-flower	1B.2	Chaparral, coastal prairie, coastal scrub (mesic), 15-100 m. Blooms March-June.	None. Project site lacks suitable habitat.
Senecio aphanactis chaparral ragwort	2B.2	Chaparral, cismontane woodland, coastal scrub (sometimes alkaline), 15-800 m. Blooms January-May.	None. Project site lacks suitable habitat.
Silene verecunda subsp. *verecunda* San Francisco campion	1B.2	Coastal bluff scrub, chaparral, coastal prairie, coastal scrub, valley and foothill grassland (sandy), 30-645 m. Blooms March-June (sometimes into August).	None. Project site lacks suitable habitat.

Species	Status	Habitat Requirements	Probability of Occurrence on Project Site
Stuckenia filiformis subsp. *alpina* slender-leaved pondweed	2B.2	Marshes and swamps (assorted shallow freshwater), 300-2,150 m. Blooms May-July.	None. Project site lacks suitable habitat.
Trifolium amoenum showy rancheria clover	FE, 1B.1	Coastal bluff scrub, valley and foothill grassland (sometimes serpentinite), 5-415 m. Blooms April-June.	None. Project site lacks suitable habitat.
Trifolium buckwestiorum Santa Cruz clover	1B.1	Broadleafed upland forest, cismontane woodland, coastal prairie (gravelly, margins), 105-610 m. Blooms April-October.	None. Project site lacks suitable habitat.
Trifolium hydrophilum saline clover	1B.2	Marshes and swamps, valley and foothill grassland (mesic/alkaline), vernal pools, 0-300 m. Blooms April-June.	None. Project site lacks suitable habitat.
Triphysaria floribunda San Francisco owl's-clover	1B.2	Coastal prairie, coastal scrub, valley and foothill grassland (usually serpentinite), 10-160 m. Blooms April-June.	None. Project site lacks suitable habitat.

Key to Status:	
FE	Federally Endangered
FT	Federally Threatened
SE	California State Endangered
ST	California State Threatened
List 1B	CNPS list of plants rare, threatened, or endangered in California and elsewhere
List 2B	CNPS list of plants rare, threatened, or endangered in California but more common elsewhere.
.1/.2/.3	Seriously endangered in California/Fairly endangered in California/ Not very endangered in California

APPENDIX B Special-Status Wildlife from Study Area Region

Appendix B. Special-Status Wildlife Species Documented to Occur in the Study Area Region[1]: CNDDB Rare Find (4/2/2019)

Species	Status	Habitat Requirements	Probability of Occurrence on Project Site
Invertebrates			
Bombus caliginosus obscure bumble bee	none	Coastal areas from Santa Barbara County to North to WA state. Food plant genera include Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia.	None. Project site consists of manicured golf greens, bed and bank of Redwood Creek. Food plants are lacking.
Bombus crotchii Crotch bumble bee	none	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	None. Project site consists of manicured golf greens, bed and bank of Redwood Creek. Food plants are lacking.
Bombus occidentalis western bumble bee	none	Once common and widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.	None. Project site consists of manicured golf greens, bed and bank of Redwood Creek. Food plants are lacking.
Calicina minor Edgewood blind harvestman	none	Open grassland in areas of serpentine bedrock. Found on the underside of moist serpentine rocks near permanent springs.	None. No serpentine bedrock on project site.
Euphydryas editha bayensis Bay checkerspot butterfly	FE	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. *Plantago erecta* is primary host plant; *Orthocarpus densiflorus* and *O. purpurscens* are the secondary host plants	None. Site lacks serpentine grassland; no suitable habitat.
Hydrochara rickseckeri Ricksecker's water scavenger beetle	none	Aquatic. Habitat is not known for this species. Known from one 1954 record at Pulgas Water Temple, at the south end of Upper Crystal Springs Reservoir.	Unlikely. Habitat requirements not known.
Microsina edgewoodensis Edgewood Park micro-blind harvestman	none	Open grassland in xeric environments. Found beneath serpentine rocks in grassland adjacent to scrub oaks.	None. None. Project site consists of manicured golf greens, bed and bank of Redwood Creek. No serpentine on project site.

[1] Search area included USGS quads for Palo Alto and Woodside

Species	Status	Habitat Requirements	Probability of Occurrence on Project Site
Fishes			
Oncorhynchus mykiss irideus pop. 8 steelhead – central California coast DPS	FT	From Russian River, south to Swquel Creek and to, but not including, Pajaro River. Also San Francisco and San Pablo Bay basins.	None. No spawning or migration habitat is present in Redwood Creek on the project site. Redwood Creek downstream of project site is a flat-bottomed engineered concrete flood control channel.
Spirinchus thaleichthys longfin smelt	FC, ST CDFW SSC	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	None. No suitable habitat.
Amphibians			
Ambystoma californiense California tiger salamander	FT, ST CDFW SSC	Central valley DPS federally listed as threatened. Santa Barbara & Sonoma Counties DPS federally listed as endangered. Need underground refuges, especially pocket gopher and ground squirrel burrows for juveniles and adults; and vernal pools or other seasonal water sources for breeding.	None. No suitable breeding habitats within 1.3 miles of the project site. No suitable oversummering habitat. Project site is isolated from extant records by miles of dense urban development.
Aneides flavipunctatus niger Santa Cruz black salamander	CDFW SSC	Mixed deciduous and coniferous woodlands and coastal grasslands in San Mateo, Santa Cruz, and Santa Clara Counties. Adults found under rocks, talus, and damp woody debris.	None. Project site consists of manicured golf greens, bed and bank of Redwood Creek.
Dicamptodon ensatus California giant salamander	CDFW SSC	Known from wet coastal forests near streams and seeps from Mendocino Co. south to Monterey Co, and east to Napa Co. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	None. Project site consists of manicured golf greens, bed and bank of Redwood Creek. Riparian vegetation typically associated with this species is lacking from the project site.

Species	Status	Habitat Requirements	Probability of Occurrence on Project Site
Rana boylii foothill yellow-legged frog	CT CDFW SSC	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	None. Rocky substrate is absent from Redwood Creek within the golf course. Flow in Redwood Creek upstream is intermittent while downstream, it is a concrete-lined channel, both of which are unsuitable for this species.
Rana draytonii California red-legged frog	FT, CDFW SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to standing water every couple of days to hydrate. and requires aestivation habitat in riparian zones not subject to flood events.	None. Surveys for this species have been conducted in multiple years, with no detections. While bullfrogs have been detected, the creek is too shaded to support bullfrogs or CA red-legged frogs (unpublished surveys by Monk & Associates).
Reptiles			
Emys marmorata western pond turtle	CDFW SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, and plenty of invertebrate food resources. Need basking sites and suitable upland habitat (sandy banks or grassy open fields) up to 0.5 km from water for egg-laying. In smaller streams, suitable estivation habitat in the leaf litter of hillsides not subject to flood events is also required.	None. No suitable pool or basking habitat is present in Redwood Creek within the golf course property. No western pond turtles detected during Monk & Associates surveys.
Thamnophis sirtalis tetrataenia San Francisco gartersnake	FE, SE, CDFW FP	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 a least one foot. Upland areas near water are also very important.	None. Dense wetland marsh cover is lacking from study area and project site.
Birds			
Brachyramphus marmoratus marbled murrelet	FT, SE	Feeds near-shore; nests inland along coast from Eureka to Oregon border and from Half Moon Bay to Santa Cruz. Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas fir.	None. No suitable nesting or feeding habitat present on site.

Species	Status	Habitat Requirements	Probability of Occurrence on Project Site
Charadius alexandrinus nivosus western snowy plover	FT, CDFW SSC	Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	None. No suitable nesting or feeding habitat.
Coturnicops noveboracensis yellow rail	CDFW SSC BCC	Summer resident in eastern Sierra Nevada in Mono County. Freshwater wetlands.	None. No suitable bayside habitat present on the project site.
Geothlypis trichas sinuosa saltmarsh common yellowthroat	CDFW SSC BCC	Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	Unlikely. Redwood Creek is deeply incised, narrow, and distant from SF Bay and freshwater marsh habitats surrounding lakes where breeding pairs have been documented to occur.
Haliaeetus leucocephalus bald eagle	SE, CDFW FP BCC	Ocean shore, lake margins, & rivers for both nesting & wintering. Most nests within 1 mi of water. Nests in large, old-growth, or dominant live tree w/open branches, especially Ponderosa pine. Roosts communally in winter.	None. No suitable nesting habitat.
Laterallus jamaicensis coturniculus California black rail	ST CDFW FP BCC	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about one inch that do not fluctuate during the year and dense vegetation for nesting habitat.	None. No suitable nesting or foraging habitat (e.g. seasonal fluctuations in water depth, paucity of dense wetland vegetation).
Melospiza melodia pusillula Alameda song sparrow	CDFW 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.	Unlikely. Project site is distant from salt marsh habitats in baylands.
Rallus obsoletus obsoletus California Ridgway's rail	FE, SE	Salt water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay.	None. No suitable salt or brackish marsh habitat.
Sternula antillarum browni California least tern	FE, SE, CDFW FP	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare of sparsely vegetated, flat substrates; sand beaches, alkali flats, land fills, or paved areas.	None. No suitable habitat.

Species	Status	Habitat Requirements	Probability of Occurrence on Project Site
Mammals			
Antrozous pallidus Pallid bat	CDFW SSC WBWG-H	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	None. Suitable roost and maternity sites are lacking and high level of human disturbance would discourage occupancy.
Corynorhinus townsendii Townsend's big-eared bat	CDFW SSC WBWG-H	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	None. Suitable roost and maternity sites are lacking and high level of human disturbance would discourage occupancy.
Dipodomys venustus venustus Santa Cruz kangaroo rat	none	Silverleaf manzanita mixed chaparral in the Zayante Sand Hills ecosystem of the Santa Cruz mountains. Needs soft, well-drained sand.	None. No chaparral habitat; site is distant from documented records.
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	CDFW SSC	Forest habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats. Constructs nests of shredded grass, leaves and other material. May be limited by availability of nest-building materials.	None. The project site consists of manicured golf greens and the bed/bank of Redwood Creek, which lacks the brushy, wooded habitat favored by this species.
Reithrodontomys raviventris salt-marsh harvest mouse	FE, SE	Only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat, but may occur in other marsh vegetation types and in adjacent upland areas.	None. No suitable habitat is present.
Sorex vagrans halicoetes salt-marsh wandering shrew	CDFW SSC	Salt marshes of the south arm of San Francisco Bay. Medium high marsh 6-8 feet above sea level where abundant driftwood is scattered among Salicornia.	None. No suitable habitat is present.

Species	**Status**	**Habitat Requirements**	**Probability of Occurrence on Project Site**
Taxidea taxus American badger	CDFW SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils & open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	None. The project site consists of manicured golf greens and is surrounded by dense urbanization, which would prevent badgers from accessing the site.

*For key to status symbols, see table below.

Key to Status:	
FE	Federal Endangered
FT	Federal Threatened
SE	California State Endangered
ST	California State Threatened
CT	California Candidate for listing as Threatened
FC	Federal Candidate for ESA listing
CDFW:SSC	California Department of Fish and Wildlife Species of Special Concern
CDFW:FP	California Department of Fish and Wildlife Fully Protected Species
CDFW:WL	California Department of Fish and Wildlife Watch List
CDF:S	California Department of Forestry "Sensitive", warranting special protection during timber operations.
MMC SSC	Marine Mammal Commission Species of Special Concern
WBWG	Western Bat Working Group: Low, Medium High priority for funding, planning and conservation status.
USFWS BCC	U.S. Fish and Wildlife Service Birds of Conservation Concern

AQUATIC RESOURCE DELINEATION REPORT

MENLO COUNTRY CLUB
WOODSIDE, SAN MATEO COUNTY, CALIFORNIA

JULY 2018

Prepared for:

Judy Bendix
Mosaic Associates
1690 San Pablo Avenue, Suite D
Pinole, CA 94564
(510) 964-0394
jbendix@mosaicassociates.net

Prepared by:

Tom Mahony, MS, PWS
Certified Professional Wetland Scientist #2567
Coast Range Biological LLC
PO Box 1238
Santa Cruz, CA 95061
(831) 426-6226
coastrange@sbcglobal.net

COAST RANGE
BIOLOGICAL LLC

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APPENDICES

1.0 INTRODUCTION

Coast Range Biological LLC conducted an aquatic resource delineation to identify the location and extent of waters, including wetlands, potentially subject to jurisdiction by the U.S. Army Corps of Engineers (Corps) under Section 404 of the federal Clean Water Act (CWA) on the ~140-acre Menlo Country Club, located at 2300 Woodside Road in Woodside, San Mateo County, California ("study area") (Figure 1). The study area consists of the entire Menlo Country Club property, which includes an 18-hole golf course, club house facilities and infrastructure, and undeveloped areas on the western portion of the property. The Menlo Country Club is planning to undertake two projects along Redwood Creek in the near future: (1) repairing sections of eroding creek bank near Holes 3 and 16, and (2) construction of a water intake structure near the downstream limit of the creek on the study area south of Alameda de las Pulgas.

The CWA gives the Corps and Environmental Protection Agency (EPA) jurisdiction over "waters of the United States" which include lakes, rivers, streams (including intermittent or ephemeral streams) and wetlands. "Wetlands" are jointly defined by the Corps and EPA as:

> *"Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas"* (Federal Register 1980; Federal Register 1982).

2.0 METHODS

Prior to the field delineation, available reference materials were reviewed, including the Web Soil Survey (NRCS 2018a), the National Wetlands Inventory (USFWS 2018), the National Hydrography Dataset (USGS 2018), topographic maps (USGS 1961), geologic data (California Geological Survey 2010), and aerial imagery. A routine-level jurisdictional delineation was conducted on the study area on July 16, 2018. The study area was field-checked for indicators of hydrophytic vegetation, wetland hydrology, and hydric soils. Seventeen sample points were taken on the study area and recorded on Corps data forms provided in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* ("Arid West Manual") (USACE 2008a)[1]. Corps data forms are presented in Appendix A.

This aquatic resource delineation was conducted in accordance with the Arid West Manual and the *Corps of Engineers Wetlands Delineation Manual* (Corps Manual) (Environmental Laboratory 1987). Based on the presence or absence of field indicators—including vegetation, hydrology and soils—the limits of potential jurisdictional wetlands and other waters of the U.S. were determined. Potential jurisdictional wetlands were mapped in the field with a Trimble GPS unit (sub-meter accuracy), differentially corrected, and overlain on a digital orthophoto (dated 8/28/17, data in UTM Zone 10, NAD 83 format) using ArcGIS mapping software.

[1] The study area is located in close proximity to the boundary between the Arid West Supplement and the Western Mountains, Valleys, and Coast Region Supplement (though located within the Arid West Supplement boundary). The Arid West Supplement was chosen for the delineation rather than the Western Mountains, Valleys, and Coast Region Supplement because the study area's habitat and climatic conditions are more typical of San Francisco Bay Area conditions where the Arid West Supplement is used. As stated in the Arid West Supplement: *"The decision to use the Western Mountains, Valleys, and Coast Regional Supplement or the Arid West Regional Supplement on a particular field site should be based on landscape and site conditions, and not solely on map location."*

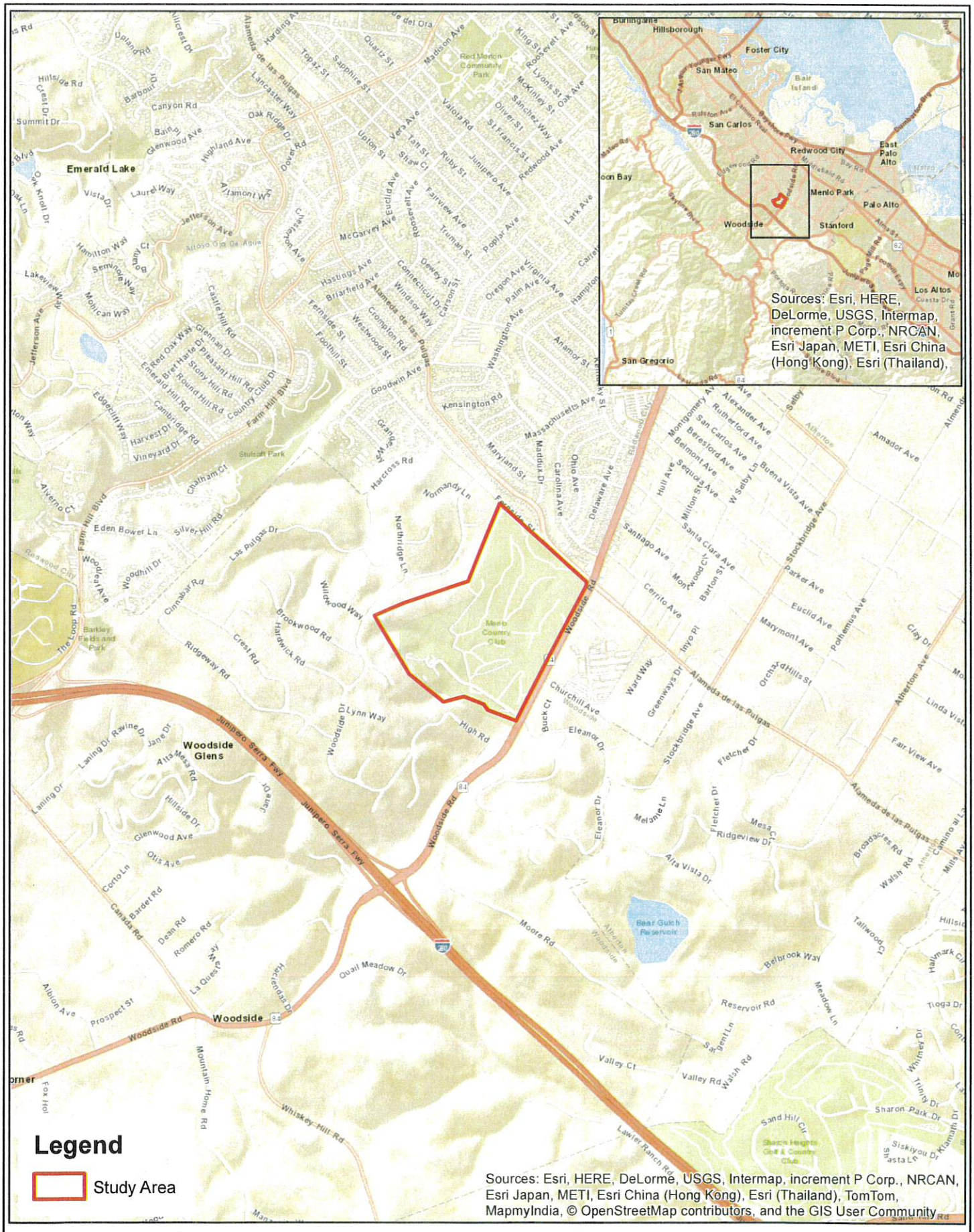

Figure 1. Study area locality map.

2.1 Hydrophytic Vegetation

Hydrophytic vegetation is defined as "the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present" (Environmental Laboratory 1987). In order to determine if hydrophytic vegetation is present, each plant species occurring in a sample plot is identified and assigned a wetland indicator status (Table 1) based on the *National Wetland Plant List* (Lichvar et al. 2016).

Table 1. Wetland Plant Indicator Status.

Indicator Status Rating	Designation	Qualitative Description (Lichvar et al. 2016)
Obligate (OBL)	Hydrophyte	Almost always occur in wetlands
Facultative Wetland (FACW)	Hydrophyte	Usually occur in wetlands, but may occur in non-wetlands
Facultative (FAC)	Hydrophyte	Occur in wetlands and non-wetlands
Facultative Upland (FACU)	Nonhydrophyte	Usually occur in non-wetlands, but may occur in wetlands
Upland (UPL)	Nonhydrophyte	Almost never occur in wetlands

Plants that have an indicator status of OBL, FACW, and FAC are considered to be typically adapted for life in anaerobic soils conditions, and qualify as hydrophytic species for Section 404 delineations. If more than 50 percent of the dominant plant species present in a sample plot are classified as hydrophytic species (e.g., FAC or wetter), the area has met the hydrophytic vegetation criterion. Dominant species are selected using the "50/20 rule" (USACE 2008a).

2.2 Wetland Hydrology

Wetland hydrology "encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season sufficient to create anaerobic and reducing conditions" (Environmental Laboratory 1987). The jurisdictional wetland hydrology criterion is satisfied if the area supports "*14 or more consecutive days of flooding or ponding, or a water table 12 in. (30 cm) or less below the soil surface, during the growing season at a minimum frequency of 5 years in 10 (50 percent or higher probability)*" (USACE 2008a). If recorded data—such as stream, tidal gauge, or hydrologic monitoring—are lacking, field indicators are used to determine the presence of wetland hydrology. Field indicators include primary indicators, such as observed inundation or saturation, biotic crust, and oxidized rhizospheres on living roots; or secondary indicators, such as drainage patterns and FAC-neutral test. The presence of one primary indicator, or two secondary indicators, is sufficient to conclude that an area has wetland hydrology (USACE 2008a).

2.3 Hydric Soils

Hydric soils are defined by the Natural Resources Conservation Service as "soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil" (Federal Register 1994). Nearly all hydric soils exhibit characteristic morphologies that result from repeated periods of saturation or inundation, or both, for more than a few days. Characteristic hydric soil indicators observable in the field include: histic epipedons; sulfidic material; aquic or preaquic moisture regime; reducing conditions; iron and manganese concretions; and soil colors (gleyed soils, soils with mottles and/or low chroma matrix). Color designations are determined by comparing a soil sample with a standard Munsell soil color chart (Gretag Macbeth 2000). The presence of any one of the above listed field indicators is considered sufficient to meet the hydric soil criterion.

(*Quercus douglasii*). The understory consists of native and non-native shrubs and herbaceous species, including poison oak (*Toxicodendron diversilobum*), snowberry (*Symphoricarpos albus*), toyon (*Heteromeles arbutifolia*), coyote brush (*Baccharis pilularis*), French broom (*Genista monspessulana*), wood fern (*Dryopteris arguta*), honeysuckle (*Lonicera hispidula*), goose grass (*Galium aparine*), soap plant (*Chlorogalum pomeridianum*), sticky monkeyflower (*Mimulus aurantiacus*), and field hedge-parsley (*Torilis arvensis*).

Riparian Woodland, consisting of the *Quercus agrifolia* Woodland Alliance and the *Quercus lobata* Woodland Alliance, occurs primarily along Redwood Creek, and is dominated by a canopy of coast live oak, valley oak, California bay, California buckeye, willow (*Salix* spp.), and acacia (*Acacia* sp.), with an understory of native and non-native shrubs and herbaceous species, including poison oak, snowberry, toyon, blue elderberry (*Sambucus nigra*), California figwort (*Scrophularia californica*), California rose (*Rosa californica*), Himalayan blackberry (*Rubus armeniacus*), English ivy (*Hedera helix*), and cotoneaster (*Cotoneaster* sp.). Freshwater Wetland occurs along Redwood Creek and other drainages and swales on the study area, and is dominated by hydrophytic plant species including narrow-leafed cattail (*Typha angustifolia*), water cress (*Nasturtium officinale*), tall flatsedge (*Cyperus eragrostis*), spreading rush (*Juncus patens*), soft rush (*Juncus effusus*), iris-leaved rush (*Juncus xiphioides*), hairy willow herb (*Epilobium ciliatum*), rabbitsfoot grass (*Polypogon monspeliensis*), seep monkeyflower (*Mimulus guttatus*), false waterpepper (*Persicaria hydropiperoides*), and giant chain fern (*Woodwardia fimbriata*).

Non-Native Grassland occurs in several areas in the western portion of the study area, and consists of non-native grasses and forbs adapted to disturbance, including ripgut brome (*Bromus diandrus*), Italian ryegrass (*Festuca perennis*), wild oats (*Avena* sp.), Italian thistle (*Carduus pycnocephalus*), English plantain (*Plantago lanceolata*), barley (*Hordeum murinum* subsp. *leporinum*), cutleaf geranium (*Geranium dissectum*), petty spurge (*Euphorbia peplus*), bull thistle (*Cirsium vulgare*), milk thistle (*Silybum marianum*), red brome (*Bromus madritensis* subsp. *rubens*), little quaking grass (*Briza minor*), rattlesnake grass (*Briza maxima*), yellow star-thistle (*Centaurea solstitialis*), rose clover (*Trifolium hirtum*), poison hemlock (*Conium maculatum*), and silver hair grass (*Aira caryophyllea*).

Planted/Landscaped habitat consists of vegetated areas on and adjacent to the golf course that are planted and regularly watered and mowed, including fairways, tees, and greens composed of irrigated turfgrass, adjacent roughs seeded with native and non-native herbaceous species including Italian ryegrass, creeping wildrye (*Elymus glaucus*) and meadow barley (*Hordeum brachyantherum*), and areas planted with native and non-native trees including redwood (*Sequoia sempervirens*), weeping willow (*Salix babylonica*), deodar cedar (*Cedrus deodara*), plum (*Prunus* sp.), juniper (*Juniperus* sp.), and pine (*Pinus* spp.). This habitat also includes unvegetated areas such as golf cart paths, sand bunkers, and bathrooms and other minor facilities located within the golf course perimeter. Developed habitat consists of development associated with Menlo Country Club facilities, including buildings, parking areas, roads, pools, and storage areas, as well as associated landscaping.

3.2 Geology, Climate, and Soils

The study area is located between the eastern foothills of the Santa Cruz Mountains and San Francisco Bay, between ~100 and ~300 feet elevation (USGS 1961) (Figure 2). The study area slopes primarily toward the north and east, and consists of mountainous terrain in the west and more level or gently sloping terrain in the east. The majority of the study area is underlain by marine sedimentary rocks (shale, sandstone, conglomerate, and minor limestone; mostly well consolidated) of Eocene age, with the northern portion of the study area underlain by marine and non-marine (continental) sedimentary rocks of Pleistocene age (older alluvium, lake, playa, and terrace deposits) (California Geological

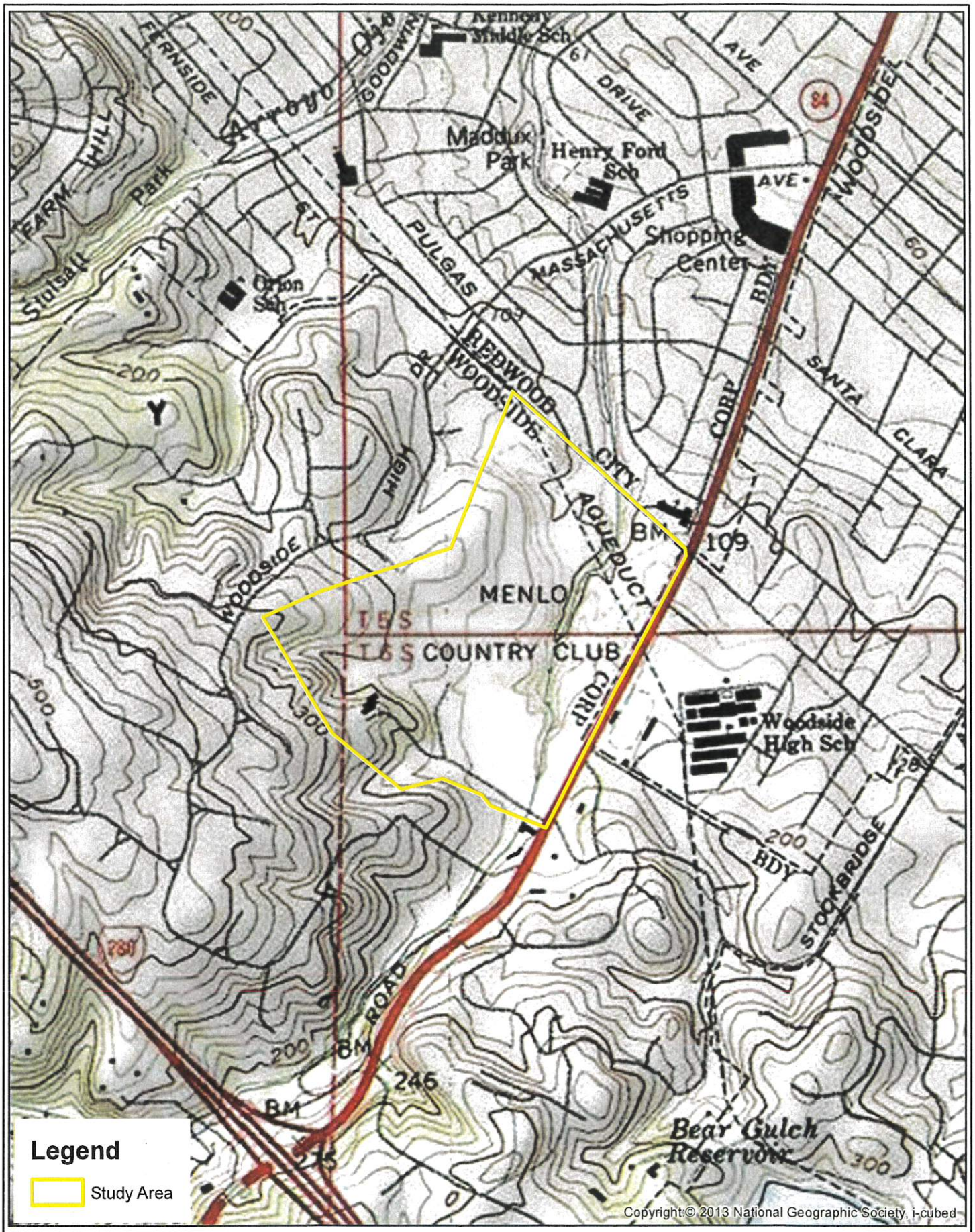

Figure 2. Topographic map of the study area.

Basemap: USGS 7.5' Palo Alto, CA Quad
Study Area: T6S,R3W,sec6/T5S,R3W,sec31
Lat/Lon: 37.4460° N, 122.2358° W

Survey 2010). Average annual precipitation in the area is 29.59 inches, occurring primarily between October and May (Western Regional Climate Center 2018).

Three soil types have been mapped on the study area in the Web Soil Survey (NRCS 2018a):

102—Accelerator-Fagan-Urban land complex, 5 to 15 percent slopes
121—Orthents, cut and fill, 0 to 15 percent slopes
132—Urban land-Orthents, cut and fill complex, 0 to 5 percent slopes

Accelerator-Fagan-Urban land complex, 5 to 15 percent slopes, is well drained, derived from residuum weathered from sandstone, siltstone, and/or shale, and is found on hills. Accelerator Series soils are Fine-loamy, mixed, active, thermic Typic Haploxeralfs. The Accelerator component consists of loam from 0 to 23 inches, clay loam from 23 to 29 inches, gravelly clay loam from 29 to 41 inches, and weathered bedrock from 41 to 45 inches of soil profile. The depth to water table is >80 inches below the surface, and the depth to a restrictive feature (paralithic bedrock) is 40 to 60 inches. Fagan Series soils are Fine, smectitic, thermic Typic Argixerolls. The Fagan component consists of loam from 0 to 5 inches, clay loam from 5 to 26 inches, clay from 26 to 43 inches, and weathered bedrock from 43 to 47 inches of soil profile. The depth to water table is >80 inches below the surface, and the depth to a restrictive feature (paralithic bedrock) is 40 to 60 inches.

Orthents, cut and fill, 0 to 15 percent slopes is well drained, derived from alluvium and sandstone, and is found on alluvial fans, hills, and terraces. The soil profile is variable from 0 to 60 inches. The depth to water table and a restrictive feature is >80 inches below the surface. Urban land-Orthents, cut and fill complex, 0 to 5 percent slopes, consists of a mixture of Urban land and Orthents and similar soils. The Urban land component is derived from alluvium and is found on alluvial fans and marine terraces. The Orthents component is similar to the Orthents, cut and fill, 0 to 15 percent slopes described above.

None of these soils are listed as hydric soils for San Mateo County (NRCS 2018b). A soil map of the study area is included in Appendix B.

3.3 Hydrology

The principal hydrologic sources for the study area are direct precipitation, surface sheet flow from surrounding uplands, near-surface flow and groundwater discharge, golf course irrigation, and drainage through Redwood Creek and several smaller intermittent or ephemeral drainages in the western portion of the study area. Redwood Creek originates southwest of Highway 280, drains northbound under Highway 280 and west of Woodside Road, then flows onto the study area. Redwood Creek drains generally northbound in the eastern portion of the study area, and exits the northeastern portion of the study area by discharging into a ~12-foot diameter concrete culvert under Alameda da las Pulgas. Redwood Creek emerges downstream of the culvert as a concrete flood control channel, where it continues through dense residential development before discharging into San Francisco Bay, a Traditional Navigable Water (TNW), ~3.5-miles north of the study area. The intermittent/ephemeral drainages enter the western portion of the study area from surrounding hills, drain generally eastbound through mountainous terrain toward the golf course as natural channels, and then end abruptly at the golf course boundary by flowing into a network of buried culverts under the golf course, which eventually discharge into Redwood Creek.

Redwood Creek is mapped as an intermittent stream in the USGS Palo Alto 7.5' topographic quadrangle (USGS 1961) and in the National Hydrography Dataset (NHD) (USGS 2018). The other intermittent/ephemeral drainages are not mapped in the NHD. Redwood Creek is mapped as a Riverine Wetland in the National Wetlands Inventory (NWI) (USFWS 2018b) (Figure 3). In addition,

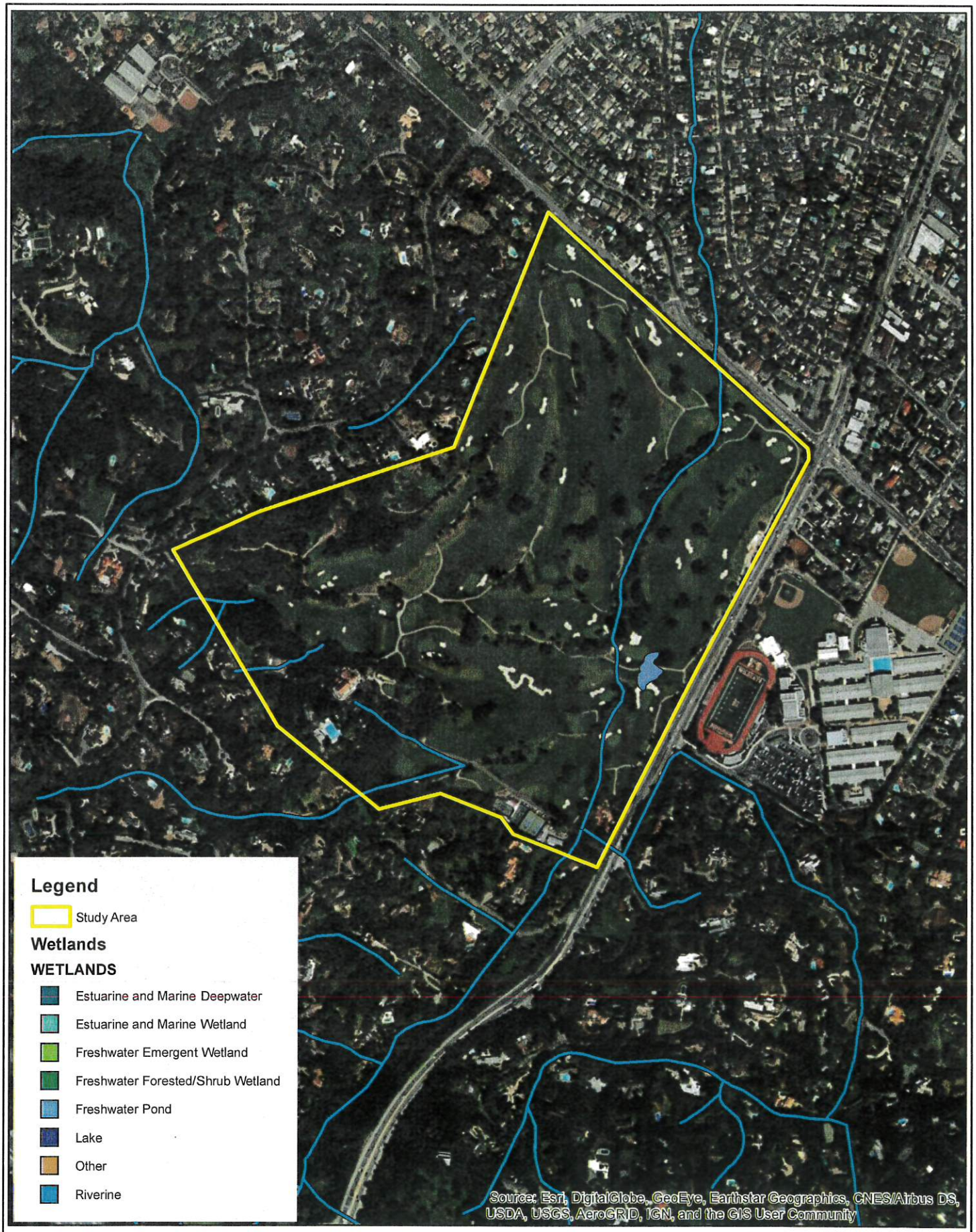

Figure 3. National Wetlands Inventory map of the study area.

Data Source: NWI (USFWS 2018).

Mapscale: 1:8,000

0 250 500 1,000 Feet

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COAST RANGE BIOLOGICAL LLC

the intermittent/ephemeral drainages and one Freshwater Pond have previously been mapped on the study area in the NWI. Due to past development associated with the golf course, the Freshwater Pond and portions of the drainages have been converted to golf course or other development, with areas of the former drainages now flowing through buried culverts (Figure 3).

4.0 RESULTS

4.1 Aquatic Resources

Eight potential jurisdictional wetlands and 11 potential jurisdictional "other waters" were delineated on the study area during the July 16, 2018 delineation. These features are discussed below, summarized in Table 2, and are shown on maps in Figures 4, 5, and 6. Delineation datasheets are included in Appendix A, study area photographs are included in Appendix C, and a list of all plant species observed on the study area, and their wetland indicator status, is included in Appendix D.

4.1.1 Potential Jurisdictional Wetlands

Wetlands 1, 2, 3, and 4

Wetlands 1, 2, 3, and 4 occur within the Redwood Creek channel (Table 2; Figure 4, 5, 6; Appendix C-1, C-2). These wetlands were differentiated from other creek reaches mapped as "other waters" by the presence of positive indicators of all three wetland parameters within the channel. Wetlands 1-4 are dominated by hydrophytic vegetation, including narrow-leaved cattail, tall flatsedge, water cress, hairy willow-herb, and false waterpepper (Sample Points 1b, 2, 3, 4). Hydric soil indicators are present throughout Wetlands 1-4, such as Redox Dark Surface (F6). The portions of Redwood Creek at Wetlands 1-4 contained 4 to 6 inches of ponded or flowing water during the field visit, and wetland hydrology indicators were observed, including Surface Water (A1), High Water Table (A2), Saturation (A3), Water Marks (B1), Sediment Deposits (B2), and Drift Deposits (B3). Adjacent uplands occur on slopes above the creek, and are dominated by upland species such as English ivy, snowberry, poison oak, and little robin (*Geranium purpureum*). These uplands lack wetland hydrology and hydric soil indicators (Sample Point 1c).

Wetlands 1-4 are located within the Redwood Creek channel. Redwood Creek drains off the study area and eventually into San Francisco Bay, a TNW.

Wetland 5

Wetland 5 covers 1,989 ft^2 (0.046-acre) and occurs in a drainage channel that emerges from west of the study area, drains north along the study area boundary, and discharges into a culvert under the golf course (Table 2; Figure 6; Appendix C-3). Wetland 5 is dominated by hydrophytic vegetation, including water cress, tall flatsedge, and rabbitsfoot grass (Sample Point 5a). Hydric soil indicators are present throughout Wetland 5, such as Redox Dark Surface (F6), as well as wetland hydrology indicators, including Drainage Patterns (B10), Biotic Crust (B12), and Oxidized Rhizospheres along Living Roots (C3). Adjacent uplands occur on a terrace above the drainage, and are dominated by upland species such as English ivy and red brome, and lack wetland hydrology and hydric soil indicators (Sample Point 5b).

Wetland 5 drains northbound along the study area boundary before entering a culvert draining under the golf course (Figure 6). Though the discharge point of the culvert was not determined during

Table 2. Aquatic Resources Delineated on the Study Area.

Feature Name	Area (ft^2)	Length (ft)	Ave. Width (ft)	Sample Point	Hydric Soils	Wetland Hydro	Hydro-phytic Veg	Significant Nexus to TNW	Cowardin Class	Lat/Lon
Potential Jurisdictional Wetlands										
Wetland 1	2,978	N/A	N/A	1b	X	X	X	Redwood Creek drains into SF Bay, a TNW	PEM1[4]	37.449027, -122.233572
Wetland 2	842	N/A	N/A	2	X	X	X	Redwood Creek drains into SF Bay, a TNW	PEM1	37.446866, -122.235250
Wetland 3	1,205	N/A	N/A	3	X	X	X	Redwood Creek drains into SF Bay, a TNW	PEM1	37.445262, -122.235483
Wetland 4	4,152	N/A	N/A	4	X	X	X	Redwood Creek drains into SF Bay, a TNW	PEM1	37.444643, -122.235840
Wetland 5	1,989	N/A	N/A	5a	X	X	X	Drains into culvert and likely Redwood Creek	PEM1	37.451559, -122.237051
Wetland 6	1,402	N/A	N/A	7a	X	X	X	Drains into culvert, and into Redwood Creek	PEM1	37.445801, -122.241282
Wetland 7	330	N/A	N/A	8a	X	X	X	Drains into culvert, and into Redwood Creek	PEM1	37.446673, -122.242454
Wetland 8	2,003	N/A	N/A	10a	X	X	X	Drains into culvert, and into Redwood Creek	PEM1	37.444046, -122.238751
Potential Jurisdictional Other Waters										
OW 1a	1,612	230	7.0	1a		X		Redwood Creek drains into SF Bay, a TNW	R4SB[5]	37.449852, -122.233424
OW 1b	10,879	951	11.4			X		Redwood Creek drains into SF Bay, a TNW	R4SB	37.448665, -122.233877
OW 1c	6,489	594	10.9			X		Redwood Creek drains into SF Bay, a TNW	R4SB	37.446499, -122.235375
OW 1d	1,611	309	5.2			X		Redwood Creek drains into SF Bay, a TNW	R4SB	37.445001, -122.235304
OW 1e	3,021	384	7.9			X		Redwood Creek drains into SF Bay, a TNW	R4SB	37.443950, -122.235801
OW 1f	1,189	96	12.4			X		Redwood Creek drains into SF Bay, a TNW	R4SB	37.442896, -122.236290
OW 2	1,099	203	5.4	9		X		Drains into culvert, and into Redwood Creek	R4SB	37.443770, -122.240231
OW 3	737	200	3.7	8b		X		Drains into culvert, and into Redwood Creek	R4SB	37.446502, -122.242924
OW 4	382	115	3.3	11		X		Drains into culvert, and presumably into Redwood Creek	R4SB	37.445445, -122.242293
Culverted WOTUS 1	552	69	8			X		Redwood Creek drains into SF Bay, a TNW		37.443069, -122.236139
Culverted WOTUS 2	486	162	3			X		Redwood Creek drains into SF Bay, a TNW		37.445599, -122.235738

[4] Palustrine Emergent, Persistent

[5] Streambed, Intermittent, Riverine

Figure 4. Delineation map of the study area.
Menlo Country Club Study Area, Woodside, San Mateo County.
T6S,R3W,sec6/T5S,R3W,sec31; 37.4460° N, 122.2358° W

Coast Range Ecological

Map Prepared by: T. Mahony
Map Date: 7/18/18
Orthophoto Date: 8/28/17

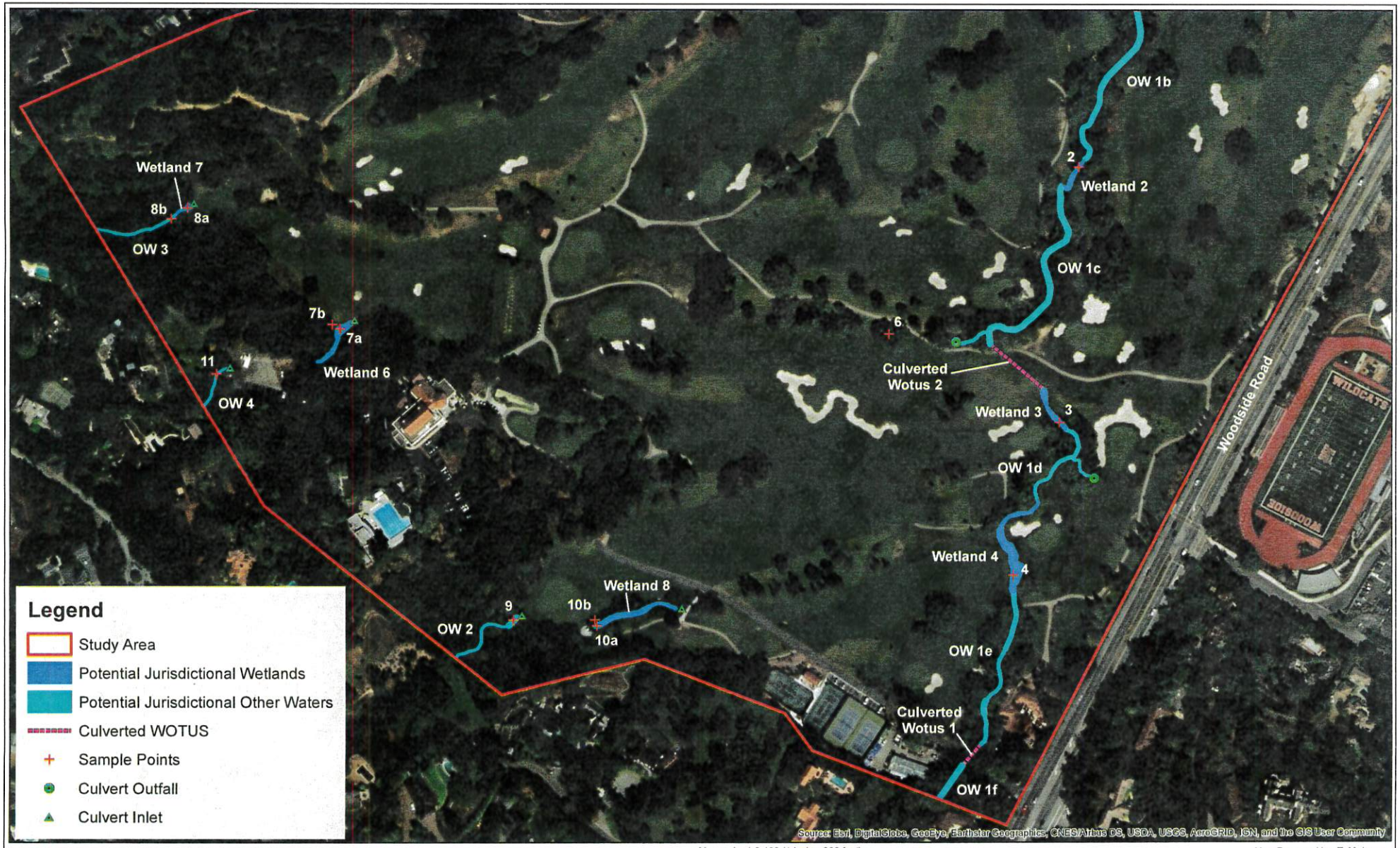

Figure 5. Delineation map of the southern portion of the study area.
Menlo Country Club Study Area, Woodside, San Mateo County.
T6S,R3W,sec6/T5S,R3W,sec31; 37.4460° N, 122.2358° W

Coast Range Biological

Mapscale: 1:2,400 (1 inch = 200 feet)

0 125 250 500 750 1,000 Feet

N

Map Prepared by: T. Mahony
Map Date: 7/18/18
Orthophoto Date: 8/28/17

Figure 6. Delineation map of the northern portion of the study area.
Menlo Country Club Study Area, Woodside, San Mateo County.
T6S,R3W,sec6/T5S,R3W,sec31; 37.4460° N, 122.2358° W

Coast Range Biological

Mapscale: 1:2,400 (1 inch = 200 feet)

0 125 250 500 750 1,000 Feet

N

Map Prepared by: T. Mahony
Map Date: 7/18/18
Orthophoto Date: 8/28/17

the field visit, it presumably discharges into Redwood Creek, which flows eventually into San Francisco Bay, a TNW.

Wetland 6

Wetland 6 covers 1,402 ft^2 (0.032-acre) and occurs in a drainage channel that emerges from a seep emerging from a hillside to the west (Table 2; Figure 5; Appendix C-4). Wetland 6 is dominated by hydrophytic vegetation, including tall flatsedge, meadow barley, and Dallis grass (*Paspalum dilatatum*) (Sample Point 7a). Hydric soil indicators are present throughout Wetland 6, such as Redox Dark Surface (F6), as well as wetland hydrology indicators, including Surface Water (A1), High Water Table (A2), Saturation (A3), and Drainage Patterns (B10). Adjacent uplands occur on slopes above the drainage, and are dominated by upland species such as ripgut brome, French broom, and Italian thistle, and lack wetland hydrology and hydric soil indicators (Sample Point 7b).

Wetland 6 discharges into a culvert at the edge of the driving range on the golf course. The culvert drains under the golf course and into Redwood Creek, which flows eventually into San Francisco Bay, a TNW.

Wetland 7

Wetland 7 covers 330 ft^2 (0.008-acre) and occurs at the bottom of a drainage channel that enters the study area and drains westbound (Other Waters 3, discussed below) (Table 2; Figure 5; Appendix C-5). Wetland 7 is dominated by hydrophytic vegetation, including tall flatsedge, seep monkeyflower, and rabbitsfoot grass (Sample Point 8a). Hydric soil indicators are present throughout Wetland 7, such as Redox Dark Surface (F6), as well as wetland hydrology indicators, including Surface Water (A1), High Water Table (A2), Saturation (A3), Water Marks (B1), Sediment Deposits (B2), and Drift Deposits (B3). Adjacent uplands occur on slopes above the drainage, and are dominated by upland species and lack wetland hydrology and hydric soil indicators.

Wetland 7 discharges into a culvert at the edge of the driving range on the golf course. The culvert drains under the golf course and into Redwood Creek, which flows eventually into San Francisco Bay, a TNW.

Wetland 8

Wetland 8 covers 2,003 ft^2 (0.046-acre) and occurs in a swale along the golf course (Table 2; Figure 5; Appendix C-6). Wetland 8 is dominated by hydrophytic vegetation, including tall flatsedge and Italian ryegrass (Sample Point 10a). Hydric soil indicators are present throughout Wetland 8, such as Redox Dark Surface (F6), as well as wetland hydrology indicators, including Drainage Patterns (B10), Shallow Aquitard (D3), and FAC-Neutral Test (D5). Adjacent uplands occur on slopes above the swale, and are dominated by upland species and lack wetland hydrology indicators, but contain hydric soil indicators, presumably due to golf course irrigation (Sample Point 10b).

Wetland 8 drains into a series of culverts under the golf course that discharge into Redwood Creek, which flows eventually into San Francisco Bay, a TNW.

4.1.2 Potential Jurisdictional Other Waters

Other Waters 1a, 1b, 1c, 1d, 1e, and 1f

Other Waters 1a-1f occur as reaches of Redwood Creek located between instream wetlands (Table 2; Figure 4, 5, 6; Appendix C-7, C-8, C-9). Redwood Creek contains a bed, bank, and OHWM, and areas

within the creek channel up to the OHWM were mapped as "other waters" rather than wetlands when one or more wetland indicators were lacking. Wetland hydrology indicators are present throughout the creek, including Surface Water (A1), High Water Table (A2), Saturation (A3), Water Marks (B1), Sediment Deposits (B2), and Drift Deposits (B3), but vegetation and hydric soil indicators are lacking (Sample Point 1a). Adjacent uplands occur on slopes above the creek, and lack wetland indicators (Sample Point 1c). At two locations on the study area, Redwood Creek drains into a culvert under the golf course, and these areas were mapped as "Culverted Waters of the U.S." (Table 2; Figure 5).

Other Waters 1a-1f in Redwood Creek drain off the study area and eventually into San Francisco Bay, a TNW.

Other Waters 2

Other Waters 2 occurs in an intermittent/ephemeral drainage channel with a bed, bank, and OHWM, and covers 1,099 ft^2 (0.025-acre), with a length of 203 feet and an average width of 5.4 feet (Table 2; Figure 5; Appendix C-10). Wetland hydrology indicators are present throughout Other Waters 2, including Surface Water (A1), Water Marks (B1), Sediment Deposits (B2), and Drift Deposits (B3) (Sample Point 9), but hydrophytic vegetation and hydric soil indicators are lacking. Adjacent uplands occur on slopes above the drainage, and lack wetland indicators. Other Waters 2 drains into a culvert under the golf course, which discharges into Redwood Creek and eventually into San Francisco Bay, a TNW.

Other Waters 3

Other Waters 3 occurs in an intermittent/ephemeral channel with a bed, bank, and OHWM, and covers 737 ft^2 (0.017-acre), with a length of 200 feet and an average width of 3.7 feet (Table 2; Figure 5; Appendix C-11). Wetland hydrology indicators are present throughout Other Waters 3, including Surface Water (A1), High Water Table (A2), Saturation (A3), Water Marks (B1), Sediment Deposits (B2), and Drift Deposits (B3), but hydrophytic vegetation and hydric soil indicators are lacking (Sample Point 8b). Adjacent uplands occur on slopes above the drainage, and lack wetland indicators. Other Waters 3 drains into Wetland 7 and subsequently into a culvert under the golf course, which discharges into Redwood Creek and eventually San Francisco Bay, a TNW.

Other Waters 4

Other Waters 4 occurs in a ditch along a dirt road that receives seep discharge from the adjacent slope. The ditch appears to be a man-made drainage ditch with a narrow bed, bank, and OHWM, and covers 382 ft^2 (0.009-acre), with a length of 115 feet and an average width of 3.3 feet (Table 2; Figure 5; Appendix C-12). Wetland hydrology indicators are present throughout Other Waters 4, including Surface Water (A1), High Water Table (A2), Saturation (A3), Water Marks (B1), Sediment Deposits (B2), and Drift Deposits (B3) (Sample Point 11), but hydrophytic vegetation and hydric soil indicators are lacking. Adjacent uplands occur on slopes above the drainage, and lack wetland indicators. Other Waters 4 drains into a culvert, which potentially discharges downslope at Wetland 6, which drains into a culvert under the golf course, discharging into Redwood Creek and eventually San Francisco Bay, a TNW. Though Other Waters 4 appears to be a man-made drainage ditch, it could be replacing a former drainage that was present prior to development of the road.

5.0 POTENTIAL CORPS JURISDICTION

Eight potential jurisdictional wetlands and 11 potential jurisdictional "other waters" were delineated on the study area during the July 16, 2018 delineation (Table 2; Figure 4, 5, 6). These features drain either directly or indirectly (via a system of culverts under the golf course) into Redwood Creek, which discharges into San Francisco Bay, a TNW.

Discharge of dredged or fill material within Corps jurisdiction normally requires a permit under Section 404 of the federal CWA. In addition, the Corps, under Section 401 of the federal CWA, is required to meet state water quality regulations prior to granting a Section 404 permit. This is accomplished by application to the local Regional Water Quality Control Board (RWQCB) for Section 401 certification (or waiver) that requirements have been met. In addition, the RWQCB could have jurisdiction over "isolated" or other wetlands exempt from Corps jurisdiction under the Porter-Cologne Water Quality Control Act. Streams, rivers, and lakes up to the top-of-bank or dripline of riparian vegetation (whichever is greater) also fall within the jurisdiction of the California Department of Fish and Wildlife (CDFW). Work within CDFW jurisdiction typically requires a Streambed Alteration Agreement.

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APPENDIX A

CORPS DELINEATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Menlo Country Club City/County: Woodside, San Mateo County Sampling Date: 7/16/18

Applicant/Owner: Menlo Country Club State: CA Sampling Point: 1a

Investigator(s): T. Mahony, Coast Range Biological LLC Section, Township, Range: T5S,R3W,sec31; Mt. Diablo

Landform (hillslope, terrace, etc.): creek Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): LRR C Lat: 37.449329 Long: -122.233585 Datum: NAD 83

Soil Map Unit Name: Orthents, cut and fill, 0 to 15 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Seasonal wetland hydrology naturally problematic. Located in Redwood Creek. Potential jurisdictional "other waters" due to the presence of bed, bank, OHWM, and wetland hydrology, and lack of hydrophytic vegetation and hydric soils.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus agrifolia	80	Y	UPL
2.			
3.			
4.			
	80 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

Quercus agrifolia overhanging creek and not rooted in channel. No vegetation in channel. No hydrophytic vegetation present.

SOIL

Sampling Point: 1a

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/3	100	none				sand	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: hardpan

Depth (inches): 4"

Hydric Soil Present? Yes ___ No ✓

Remarks:

Unconsolidated sand/alluvium over hardpan.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 6"

Water Table Present? Yes ✓ No ___ Depth (inches): 0"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ___

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

None

Remarks:

Located in Redwood Creek channel with bed, bank, and OHWM. Drains into culvert under Alameda de las Pulgas.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Menlo Country Club City/County: Woodside, San Mateo County Sampling Date: 7/16/18

Applicant/Owner: Menlo Country Club State: CA Sampling Point: 1b

Investigator(s): T. Mahony, Coast Range Biological LLC Section, Township, Range: T5S,R3W,sec31; Mt. Diablo

Landform (hillslope, terrace, etc.): creek Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): LRR C Lat: 37.449281 Long: -122.233583 Datum: NAD 83

Soil Map Unit Name: Orthents, cut and fill, 0 to 15 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Seasonal wetland hydrology naturally problematic. Located in Redwood Creek. All three wetland parameters met. Potential jurisdictional wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1. Typha angustifolia	80	Y	OBL
2. Persicaria hydropiperoides	10	N	OBL
3. Cyperus eragrostis	5	N	FACW
4. Geranium purpureum	2	N	UPL
5. Hedera helix	2	N	FACU
6.			
7.			
8.			
	99 = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

Sample point dominated by hydrophytic vegetation.

SOIL

Sampling Point: 1b

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	95	10YR 5/6	5	C	M	sndy loam	
4-20	5Y 4/1	95	10YR 4/6	5	C	M	sndy loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: none

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hydric soil indicators observed, primarily on the edge of creek channel in areas of greater soil development. Unconsolidated alluvium in center of channel.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 6"

Water Table Present? Yes ✓ No ___ Depth (inches): 0"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ___

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

None

Remarks:

Located in Redwood Creek channel with bed, bank, and OHWM. Drains into culvert under Alameda de las Pulgas.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Menlo Country Club City/County: Woodside, San Mateo County Sampling Date: 7/16/18

Applicant/Owner: Menlo Country Club State: CA Sampling Point: 1c

Investigator(s): T. Mahony, Coast Range Biological LLC Section, Township, Range: T5S,R3W,sec31; Mt. Diablo

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 70

Subregion (LRR): LRR C Lat: 37.449305 Long: -122.233640 Datum: NAD 83

Soil Map Unit Name: Orthents, cut and fill, 0 to 15 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Seasonal wetland hydrology naturally problematic. Located on slope above creek. No wetland parameters met.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus agrifolia	60	Y	UPL
2.			
3.			
4.			
	60 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1. Symphoricarpos albus	20	Y	FACU
2. Toxicodendron diversilobum	20	Y	FACU
3.			
4.			
5.			
	40 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Hedera helix	30	Y	FACU
2. Geranium purpureum	5	N	UPL
3. Scrophularia californica	5	N	FAC
4. Paspalum dilatatum	5	N	FAC
5. Solanum sp.	5	N	
6.			
7.			
8.			
	50 = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

Sample point not dominated by hydrophytic vegetation.

SOIL

Sampling Point: 1c

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/2	100	none				loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: none

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): none

Water Table Present? Yes ___ No ✓ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): none

Wetland Hydrology Present? Yes ___ No ✓

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

None

Remarks:

Located on slope above creek. No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Menlo Country Club City/County: Woodside, San Mateo County Sampling Date: 7/16/18

Applicant/Owner: Menlo Country Club State: CA Sampling Point: 2

Investigator(s): T. Mahony, Coast Range Biological LLC Section, Township, Range: T5S,R3W,sec31; Mt. Diablo

Landform (hillslope, terrace, etc.): creek Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): LRR C Lat: 37.446901 Long: -122.235251 Datum: NAD 83

Soil Map Unit Name: Orthents, cut and fill, 0 to 15 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Seasonal wetland hydrology naturally problematic. Located in Redwood Creek. All three wetland parameters met. Potential jurisdictional wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5')			
1. Nasturtium officinale	80	Y	OBL
2. Epilobium ciliatum	5	N	FACW
3. Cyperus eragrostis	5	N	FACW
4. Helenium puberulum	2	N	FACW
5.			
6.			
7.			
8.			
	92 = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

Sample point dominated by hydrophytic vegetation.

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	95	10YR 5/6	5	C	M	sndy loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: hardpan

Depth (inches): 6"

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hydric soil indicators observed, primarily on the edge of creek channel in areas of greater soil development.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 4"

Water Table Present? Yes ✓ No ___ Depth (inches): 0"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ___

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

None

Remarks:

Located in Redwood Creek channel with bed, bank, and OHWM. Drains into culvert under Alameda de las Pulgas.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Menlo Country Club City/County: Woodside, San Mateo County Sampling Date: 7/16/18

Applicant/Owner: Menlo Country Club State: CA Sampling Point: 3

Investigator(s): T. Mahony, Coast Range Biological LLC Section, Township, Range: T6S,R3W,sec6, Mt. Diablo

Landform (hillslope, terrace, etc.): creek Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): LRR C Lat: 37.445229 Long: -122.235428 Datum: NAD 83

Soil Map Unit Name: Orthents, cut and fill, 0 to 15 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Seasonal wetland hydrology naturally problematic. Located in Redwood Creek. All three wetland parameters met. Potential jurisdictional wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1. Nasturtium officinale	5	N	OBL
2. Typha angustifolia	80	Y	OBL
3. Cyperus eragrostis	5	N	FACW
4. Persicaria hydropiperoides	2	N	OBL
5.			
6.			
7.			
8.			
	92 = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

Sample point dominated by hydrophytic vegetation.

SOIL

Sampling Point: 3

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	95	10YR 5/6	5	C	M	sndy loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: hardpan

Depth (Inches): 6"

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hydric soil indicators observed, primarily on the edge of creek channel in areas of greater soil development. Unconsolidated alluvium in center of creek channel.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 4"

Water Table Present? Yes ✓ No ___ Depth (inches): 0"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ___

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

None

Remarks:

Located in Redwood Creek channel with bed, bank, and OHWM. Drains into culvert under Alameda de las Pulgas.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Menlo Country Club City/County: Woodside, San Mateo County Sampling Date: 7/16/18

Applicant/Owner: Menlo Country Club State: CA Sampling Point: 4

Investigator(s): T. Mahony, Coast Range Biological LLC Section, Township, Range: T6S,R3W,sec6, Mt. Diablo

Landform (hillslope, terrace, etc.): creek Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): LRR C Lat: 37.444241 Long: -122.235815 Datum: NAD 83

Soil Map Unit Name: Orthents, cut and fill, 0 to 15 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Seasonal wetland hydrology naturally problematic. Located in Redwood Creek. All three wetland parameters met. Potential jurisdictional wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1. Rubus armeniacus	5	N	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Nasturtium officinale	10	N	OBL
2. Typha angustifolia	75	Y	OBL
3. Cyperus eragrostis	1	N	FACW
4. Phalaris aquatica	2	N	FACU
5. Helminthotheca echioides	5	N	FAC
6.			
7.			
8.			
	93 = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

Sample point dominated by hydrophytic vegetation.

SOIL

Sampling Point: 4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	95	10YR 5/6	5	C	M	sndy loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: hardpan

Depth (inches): 6"

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hydric soil indicators observed, primarily on the edge of creek channel in areas of greater soil development. Unconsolidated alluvium in center of creek channel.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 6"

Water Table Present? Yes ✓ No ___ Depth (inches): 0"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ___

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

None

Remarks:

Located in Redwood Creek channel with bed, bank, and OHWM. Drains into culvert under Alameda de las Pulgas.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Menlo Country Club City/County: Woodside, San Mateo County Sampling Date: 7/16/18

Applicant/Owner: Menlo Country Club State: CA Sampling Point: 5a

Investigator(s): T. Mahony, Coast Range Biological LLC Section, Township, Range: T5S,R3W,sec31; Mt. Diablo

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): concave Slope (%): 5

Subregion (LRR): LRR C Lat: 37.451040 Long: -122.237319 Datum: NAD 83

Soil Map Unit Name: Orthents, cut and fill, 0 to 15 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Seasonal wetland hydrology naturally problematic. Located in a drainage channel that emerges from west of the study area, drains north along the study area boundary, and discharges into a culvert under the golf course. All three wetland parameters met. Potential jurisdictional wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1. Rubus armeniacus	5	N	FAC
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Nasturtium officinale	40	Y	OBL
2. Cyperus eragrostis	40	Y	FACW
3. Polypogon monspeliensis	5	N	FACW
4. Helminthotheca echioides	5	N	FAC
5.			
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

Sample point dominated by hydrophytic vegetation.

SOIL

Sampling Point: 5a

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	85	10YR 5/6	15	C	M/PL	clay loam	
4-20	10YR 3/1	75	10YR 5/6	25	C	M/PL		sandy clay loam

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: none

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ✓ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): none

Water Table Present? Yes ___ No ✓ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): none

Wetland Hydrology Present? Yes ✓ No ___

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

None

Remarks:

Located in a ditch that enters the study area from the west via a culvert, drains north along the study area boundary, then discharges into a culvert under the golf course. Culvert presumably drains into stormdrain or other system which discharges into Redwood Creek.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Menlo Country Club City/County: Woodside, San Mateo County Sampling Date: 7/16/18

Applicant/Owner: Menlo Country Club State: CA Sampling Point: 5b

Investigator(s): T. Mahony, Coast Range Biological LLC Section, Township, Range: T5S,R3W,sec31; Mt. Diablo

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRR C Lat: 37.451047 Long: -122.237368 Datum: NAD 83

Soil Map Unit Name: Orthents, cut and fill, 0 to 15 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Seasonal wetland hydrology naturally problematic. Located on terrace above ditch. No wetland parameters met.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus agrifolia	30	Y	UPL
2.			
3.			
4.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5')			
1. Rubus armeniacus	20	Y	FAC
2.			
3.			
4.			
5.			
	20	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Hedera helix	40	Y	FACU
2. Bromus madritensis	10	N	UPL
3. Cynodon dactylon	5	N	FACU
4. Paspalum dilatatum	5	N	FAC
5. Torilis arvensis	5	N	UPL
6.			
7.			
8.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

Sample point not dominated by hydrophytic vegetation.

SOIL

Sampling Point: 5b

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 2/2	100	none				clay loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: none

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): none

Water Table Present? Yes ___ No ✓ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): none

Wetland Hydrology Present? Yes ___ No ✓

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

None

Remarks:

Located on terrace above creek. No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Menlo Country Club City/County: Woodside, San Mateo County Sampling Date: 7/16/18

Applicant/Owner: Menlo Country Club State: CA Sampling Point: 6

Investigator(s): T. Mahony, Coast Range Biological LLC Section, Township, Range: T6S,R3W,sec6; Mt. Diablo

Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 5

Subregion (LRR): LRR C Lat: 37.445806 Long: -122.236796 Datum: NAD 83

Soil Map Unit Name: Orthents, cut and fill, 0 to 15 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Seasonal wetland hydrology naturally problematic. Located in swale. No wetland parameters met.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus agrifolia	50	Y	UPL
2.			
3.			
4.			
	50 = Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1. Festuca perennis	40	Y	FAC
2. Unknown Grasses	35	Y	
3.			
4.			
5.			
6.			
7.			
8.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 25 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

Sample point not dominated by hydrophytic vegetation. However, grasses present that were not identifiable due to recent mowing.

SOIL

Sampling Point: 6

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/2	100	none				loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: hardpan

Depth (inches): 6"

Hydric Soil Present? Yes ____ No ✓

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): none

Water Table Present? Yes ____ No ✓ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): none

Wetland Hydrology Present? Yes ____ No ✓

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

None

Remarks:

Located in swale that drains into Redwood Creek. Swale likely conveys sheet flow during brief periods during rainy season, but no bed/bank/OHWM present, nor were any wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Menlo Country Club City/County: Woodside, San Mateo County Sampling Date: 7/16/18

Applicant/Owner: Menlo Country Club State: CA Sampling Point: 7a

Investigator(s): T. Mahony, Coast Range Biological LLC Section, Township, Range: T6S,R3W,sec6; Mt. Diablo

Landform (hillslope, terrace, etc.): drainage/seep Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): LRR C Lat: 37.445876 Long: -122.241243 Datum: NAD 83

Soil Map Unit Name: Orthents, cut and fill, 0 to 15 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Seasonal wetland hydrology naturally problematic. Located in drainage channel that emerges from a seep upslope. Drainage discharges into a culvert that drains into Redwood Creek. All three wetland parameters met. Potential jurisdictional wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1. Cyperus eragrostis	60	Y	FACW
2. Paspalum dilatatum	10	N	FAC
3. Hordeum brachyantherum	10	N	FACW
4. Cirsium vulgare	10	N	FACU
5. Aira caryophyllea	5	N	FACU
6.			
7.			
8.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

Sample point dominated by hydrophytic vegetation.

SOIL

Sampling Point: 7a

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	95	10YR 4/6	5	C	M/PL	clay loam	
6-16	10YR 3/2	90	10YR 5/6	10	C	M/PL	clay	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: none

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 1"

Water Table Present? Yes ✓ No ___ Depth (inches): 0"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ___

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

None

Remarks:

Located in a channel that receives input from seep discharging from hillside upslope. Drains into culvert under golf course driving range, which discharges into Redwood Creek.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Menlo Country Club City/County: Woodside, San Mateo County Sampling Date: 7/16/18

Applicant/Owner: Menlo Country Club State: CA Sampling Point: 7b

Investigator(s): T. Mahony, Coast Range Biological LLC Section, Township, Range: T6S,R3W,sec6; Mt. Diablo

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRR C Lat: 37.445906 Long: -122.241298 Datum: NAD 83

Soil Map Unit Name: Orthents, cut and fill, 0 to 15 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Seasonal wetland hydrology naturally problematic. Located on slope above channel. No wetland parameters met.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1. Genista monspessulana	30	Y	UPL
2.			
3.			
4.			
5.			
	30 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Bromus diandrus	50	Y	UPL
2. Carduus pycnocephalus	15	N	UPL
3. Cirsium vulgare	5	N	FACU
4. Torilis arvensis	5	N	UPL
5.			
6.			
7.			
8.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

Sample point not dominated by hydrophytic vegetation.

SOIL

Sampling Point: 7b

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100	none				clay loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: none

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): none

Water Table Present? Yes ___ No ✓ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): none

Wetland Hydrology Present? Yes ___ No ✓

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

None

Remarks:

Located on slope above drainage. No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Menlo Country Club City/County: Woodside, San Mateo County Sampling Date: 7/16/18

Applicant/Owner: Menlo Country Club State: CA Sampling Point: 8a

Investigator(s): T. Mahony, Coast Range Biological LLC Section, Township, Range: T6S,R3W,sec6; Mt. Diablo

Landform (hillslope, terrace, etc.): drainage/seep Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): LRR C Lat: 37.446634 Long: -122.242470 Datum: NAD 83

Soil Map Unit Name: Accelerator-Fagan-Urban land complex, 5 to 15 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Seasonal wetland hydrology naturally problematic. Located in drainage channel downstream of Other Waters 3. Drainage discharges into a culvert that drains into Redwood Creek. All three wetland parameters met. Potential jurisdictional wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1. Rubus armeniacus	10	N	FAC
2.			
3.			
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Cyperus eragrostis	30	Y	FACW
2. Mimulus guttatus	30	Y	OBL
3. Polypogon monspeliensis	25	Y	FACW
4. Sonchus asper	5	N	FAC
5.			
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust _____

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)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

Sample point dominated by hydrophytic vegetation.

SOIL

Sampling Point: 8a

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/1	90	10YR 4/6	10	C	M/PL	clay loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: none

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 3"

Water Table Present? Yes ✓ No ___ Depth (inches): 0"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ___

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

None

Remarks:

Located in a drainage channel downstream of Other Waters 3. Drains into 18" culvert under golf course driving range, which discharges into Redwood Creek.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Menlo Country Club City/County: Woodside, San Mateo County Sampling Date: 7/16/18

Applicant/Owner: Menlo Country Club State: CA Sampling Point: 8b

Investigator(s): T. Mahony, Coast Range Biological LLC Section, Township, Range: T6S,R3W,sec6; Mt. Diablo

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): concave Slope (%): 5

Subregion (LRR): LRR C Lat: 37.446595 Long: -122.242597 Datum: NAD 83

Soil Map Unit Name: Accelerator-Fagan-Urban land complex, 5 to 15 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Seasonal wetland hydrology naturally problematic. Potential jurisdictional "other waters" due to the presence of bed, bank, OHWM, and wetland hydrology, and lack of hydrophytic vegetation and hydric soils.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Ficus carica	30	Y	FACU
2. Umbellularia californica	50	Y	FAC
3.			
4.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5')			
1. Genista monspessulana	5	N	UPL
2. Toxicodendron diversilobum	5	N	FACU
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 90 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

Sample point not dominated by hydrophytic vegetation. Trees overhanging channel and not rooted within drainage. Channel bed mostly devoid of vegetation.

SOIL

Sampling Point: 8b

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: none

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

No hydric soil indicators observed. Soil composed of sandy/rocky alluvium with minimal soil development.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 1"

Water Table Present? Yes ✓ No ___ Depth (inches): 0"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ___

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

None

Remarks:

Located in a channel with bed/bank/OHWM, that drains into Wetland 7 and then 18" culvert under golf course driving range, which discharges into Redwood Creek.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Menlo Country Club City/County: Woodside, San Mateo County Sampling Date: 7/16/18

Applicant/Owner: Menlo Country Club State: CA Sampling Point: 9

Investigator(s): T. Mahony, Coast Range Biological LLC Section, Township, Range: T6S,R3W,sec6; Mt. Diablo

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): concave Slope (%): 5

Subregion (LRR): LRR C Lat: 37.443970 Long: -122.239859 Datum: NAD 83

Soil Map Unit Name: Accelerator-Fagan-Urban land complex, 5 to 15 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Seasonal wetland hydrology naturally problematic. Potential jurisdictional "other waters" due to the presence of bed, bank, OHWM, and wetland hydrology, and lack of hydrophytic vegetation and hydric soils.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Umbellularia californica	80	Y	FAC
2.			
3.			
4.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. Hedera helix	5	N	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 95 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

Sample point composed of 95 percent bare ground. Umbellularia californica not rooted in channel, but overhanging. Hydrophytic vegetation not present.

SOIL

Sampling Point: 9

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: asphalt/riprap

Depth (inches): 0"

Hydric Soil Present? Yes ___ No ✓

Remarks:

No hydric soil indicators observed. No soil present. Channel bed composed of asphalt/riprap.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 1"

Water Table Present? Yes ___ No ✓ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): none

Wetland Hydrology Present? Yes ✓ No ___

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

None

Remarks:

Located in a channel with bed/bank/OHWM, that drains into wetland and then 24" culvert under golf course, which discharges into Redwood Creek.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Menlo Country Club City/County: Woodside, San Mateo County Sampling Date: 7/16/18

Applicant/Owner: Menlo Country Club State: CA Sampling Point: 10a

Investigator(s): T. Mahony, Coast Range Biological LLC Section, Township, Range: T6S,R3W,sec6; Mt. Diablo

Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): LRR C Lat: 37.443918 Long: -122.239187 Datum: NAD 83

Soil Map Unit Name: Accelerator-Fagan-Urban land complex, 5 to 15 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Seasonal wetland hydrology naturally problematic. Located in swale that drains through series of culverts that drain into Redwood Creek. All three wetland parameters met. Potential jurisdictional wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5')			
1. Cyperus eragrostis	35	Y	FACW
2. Festuca perennis	30	Y	FAC
3. Aira caryophyllea	10	N	FACU
4. Sonchus asper	2	N	FAC
5. Agrostis sp.	10	N	
6. Plantago major	5	N	FAC
7. Rumex sp.	5	N	
8.			
	97 = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

Sample point dominated by hydrophytic vegetation.

SOIL

Sampling Point: 10a

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	90	10YR 5/6	10	C	M/PL	sndy loam	
4-16	10YR 3/2	85	10YR 5/6	15	C	M/PL	clay	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: clay

Depth (inches): 4"

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): none

Water Table Present? Yes ___ No ✓ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): none

Wetland Hydrology Present? Yes ✓ No ___

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

None

Remarks:

Located in a swale that drains through a series of culverts under golf course which discharge eventually into Redwood Creek.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Menlo Country Club City/County: Woodside, San Mateo County Sampling Date: 7/16/18

Applicant/Owner: Menlo Country Club State: CA Sampling Point: 10b

Investigator(s): T. Mahony, Coast Range Biological LLC Section, Township, Range: T6S,R3W,sec6; Mt. Diablo

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 25

Subregion (LRR): LRR C Lat: 37.443956 Long: -122.239196 Datum: NAD 83

Soil Map Unit Name: Accelerator-Fagan-Urban land complex, 5 to 15 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Seasonal wetland hydrology naturally problematic. Located on slope above swale. Hydric soil indicators present, likely due to golf course irrigation, but wetland hydrology and hydrophytic vegetation lacking. Not located in potential jurisdictional wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1. Cynodon dactylon	60	Y	FACU
2. Festuca perennis	10	N	FAC
3. Aira caryophyllea	10	N	FACU
4. Agrostis sp.	10	N	
5. Unknown grasses	10	N	
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 1 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

Sample point not dominated by hydrophytic vegetation. Some grasses not identifiable due to mowing.

SOIL

Sampling Point: 10b

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	95	10YR 5/6	5	C	M/PL	sndy loam	

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: none

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hydric soil indicators observed, likely due to golf course irrigation. Soils likey non-native from golf course.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): none

Water Table Present? Yes ___ No ✓ Depth (inches): none

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): none

Wetland Hydrology Present? Yes ___ No ✓

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

None

Remarks:

Located on slope above swale. No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Menlo Country Club City/County: Woodside, San Mateo County Sampling Date: 7/16/18

Applicant/Owner: Menlo Country Club State: CA Sampling Point: 11

Investigator(s): T. Mahony, Coast Range Biological LLC Section, Township, Range: T6S,R3W,sec6; Mt. Diablo

Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave Slope (%): 10

Subregion (LRR): LRR C Lat: 37.445583 Long: -122.242245 Datum: NAD 83

Soil Map Unit Name: Accelerator-Fagan-Urban land complex, 5 to 15 percent slopes NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology ✓ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Seasonal wetland hydrology naturally problematic. Located in narrow (2' wide) ditch along dirt road that receives seep discharge from adjacent slope. Drains along road and into culvert. Man-made ditch along road, but likely replacing former natural drainage. Potential jurisdictional "other waters".

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10')	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus agrifolia	40	Y	UPL
2. Umbellularia californica	30	Y	FAC
3.			
4.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5')			
1. Festuca perennis	1	N	FAC
2. Cyperus eragrostis	1	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	2	= Total Cover	
Woody Vine Stratum (Plot size: 5')			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 98 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 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:

Sample point not dominated by hydrophytic vegetation. Minimal vegetation in channel. Most cover comes from overhanding canopy rooted outside channel.

SOIL

Sampling Point: 11

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR C)**
- ___ 1 cm Muck (A9) **(LRR D)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ ~~Vernal Pools (F9)~~

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: none

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

No hydric soil indicators observed. Soil composed of sandy/rocky alluvium with minimal soil development.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) **(Nonriverine)**
- ___ Sediment Deposits (B2) **(Nonriverine)**
- ___ Drift Deposits (B3) **(Nonriverine)**
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 3"

Water Table Present? Yes ✓ No ___ Depth (inches): 0"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ___

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

None

Remarks:

Located in narrow (2' wide) ditch along dirt road that receives seep discharge from adjacent slope. Man-made ditch along road, but likely replacing former natural drainage. Broken pipes in channel. Drains along road and into culvert. Possibly discharges into Wetland 6 upstream of Sample Point 7a.

APPENDIX B

SOIL MAP OF THE STUDY AREA

Soil Map—San Mateo County, Eastern Part, and San Francisco County, California
(menloCC_studyarea)

Map Scale: 1:8,190 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 350 700 1400 2100

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

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

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

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

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

Soil Survey Area: San Mateo County, Eastern Part, and San Francisco County, California
Survey Area Data: Version 13, Sep 11, 2017

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

Date(s) aerial images were photographed: Oct 26, 2010—Nov 3, 2013

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
102	Accelerator-Fagan-Urban land complex, 5 to 15 percent s lopes	21.3	15.2%
121	Orthents, cut and fill, 0 to 15 percent slopes	115.9	82.8%
132	Urban land-Orthents, cut and fill complex, 0 to 5 percent slopes	2.8	2.0%
Totals for Area of Interest		**139.9**	**100.0%**

APPENDIX C

PHOTOGRAPHS OF THE STUDY AREA

Appendix C-1. Wetland 1 at Sample Point 1b in Redwood Creek.

Appendix C-2. Wetland 2 at Sample Point 2 in Redwood Creek.

Appendix C-3. Wetland 5 at Sample Point 5a.

Appendix C-4. Wetland 6 at Sample Point 7a.

Appendix C-5. Wetland 7 at Sample Point 8a.

Appendix C-6. Wetland 8 at Sample Point 10a.

Appendix C-7. Other Waters 1a at Sample Point 1a in Redwood Creek.

Appendix C-8. Other Waters 1b in Redwood Creek.

Appendix C-9. The downstream reach of Redwood Creek, where it exits the study area through a concrete culvert under Alameda de las Pulgas.

Appendix C-10. Other Waters 2 at Sample Point 9.

Appendix C-11. Other Waters 3 at Sample Point 8b.

Appendix C-12. Other Waters 4 at Sample Point 11.

APPENDIX D

PLANT SPECIES OBSERVED ON THE STUDY AREA AND THEIR WETLAND INDICATOR STATUS

Appendix D. Plant species observed on the study area and their wetland indicator status.

Scientific Name	Common Name	Wetland Indicator Status (Lichvar et al. 2016)
Acacia sp.*	acacia	UPL
Aesculus californica	California buckeye	UPL
Agrostis sp.	bent grass	
*Aira caryophyllea**	silver hair grass	FACU
Avena sp.*	wild oats	UPL
Baccharis pilularis	coyote brush	UPL
*Bellis perennis**	English daisy	UPL
*Briza maxima**	rattlesnake grass	FAC
*Briza minor**	little quaking grass	FAC
*Bromus catharticus**	rescue grass	UPL
*Bromus diandrus**	ripgut brome	UPL
Bromus madritensis subsp. *rubens**	red brome	UPL
*Capsella bursa-pastoris**	shepherd's purse	FACU
*Carduus pycnocephalus**	Italian thistle	UPL
Carex spp.	sedge	
*Cedrus deodara**	deodar cedar	UPL
*Centaurea solstitialis**	yellow star-thistle	UPL
Chlorogalum pomeridianum	soap plant	UPL
*Cirsium vulgare**	bull thistle	FACU
Claytonia perfoliata	miner's lettuce	FAC
*Conium maculatum**	poison hemlock	FACW
*Cortaderia jubata**	pampas grass	FACU
Cotoneaster sp.*	cotoneaster	UPL
*Cynodon dactylon**	Bermuda grass	FACU
Cyperus eragrostis	tall flatsedge	FACW
Datura wrightii	Jimson weed	UPL
*Delairea odorata**	cape ivy	UPL
Dryopteris arguta	wood fern	UPL
Elymus triticoides	creeping wild rye	FAC
Epilobium ciliatum	hairy willow herb	FACW
Erigeron canadensis	horseweed	FACU
*Erodium moschatum**	whitestem filaree	UPL
*Euphorbia peplus**	petty spurge	UPL
*Festuca perennis**	Italian ryegrass	FAC
*Ficus carica**	edible fig	FACU
Galium aparine	goose grass	FACU
*Genista monspessulana**	French broom	UPL
*Geranium dissectum**	cutleaf geranium	UPL
*Geranium purpureum**	little robin	UPL
*Hedera helix**	English ivy	FACU
Helenium puberulum	sneezeweed	FACW
*Helminthotheca echioides**	bristly ox-tongue	FAC
Heteromeles arbutifolia	toyon	UPL
Hordeum brachyantherum	meadow barley	FACW
Hordeum murinum subsp. *leporinum**	barley	FACU
Juncus effusus	soft rush	FACW
Juncus patens	spreading rush	FACW

Scientific Name	Common Name	Wetland Indicator Status (Lichvar et al. 2016)
Juncus xiphioides	iris-leaved rush	OBL
Juniperus sp.*	juniper	UPL
*Lactuca serriola**	prickly lettuce	FACU
Lonicera hispidula	hairy honeysuckle	FACU
Malva sp.*	mallow	UPL
*Matricaria discoidea**	pineapple weed	FACU
Mimulus aurantiacus	sticky monkeyflower	UPL
Mimulus guttatus	seep monkeyflower	OBL
Nasturtium officinale	water cress	OBL
*Nerium oleander**	oleander	UPL
*Oxalis pes-caprae**	Bermuda buttercup	UPL
*Paspalum dilatatum**	Dallis grass	FAC
Persicaria hydropiperoides	false waterpepper	OBL
*Phalaris aquatica**	Harding grass	FACU
Pinus spp.*	pine	UPL
*Plantago lanceolata**	English plantain	FAC
*Plantago major**	common plantain	FAC
*Poa annua**	annual bluegrass	FAC
*Polypogon monspeliensis**	rabbitsfoot grass	FACW
Prunus sp.*	plum	
*Pseudognaphalium luteoalbum**	annual cudweed	FAC
Quercus agrifolia	coast live oak	UPL
Quercus douglasii	blue oak	UPL
Quercus lobata	valley oak	FACU
*Raphanus sativus**	wild radish	UPL
*Ricinus communis**	castor bean	FACU
Rosa californica	California rose	FAC
*Rubus armeniacus**	Himalayan blackberry	FAC
*Rumex crispus**	curly dock	FAC
*Salix babylonica**	weeping willow	FAC
Salix spp.	willow	
Sambucus nigra	blue elderberry	FACU
Scrophularia californica	California figwort	FAC
*Senecio vulgaris**	common groundsel	FACU
Sequoia sempervirens	coast redwood	UPL
*Silybum marianum**	milk thistle	UPL
Solanum sp.	nightshade	
Sonchus asper subsp. *asper**	prickly sow thistle	FAC
Symphoricarpos albus	snowberry	FACU
*Taraxacum officinale**	common dandelion	FACU
*Torilis arvensis**	field hedge-parsley	UPL
Toxicodendron diversilobum	poison oak	FACU
*Trifolium hirtum**	rose clover	UPL
Typha angustifolia	narrow-leaved cattail	OBL
Umbellularia californica	California bay	FAC
*Vinca major**	periwinkle	UPL
Woodwardia fimbriata	giant chain fern	FACW
* = non-native species		

APPENDIX D Photos of the Study Area

Appendix D. Photos of the Bank Stabilization Project Site

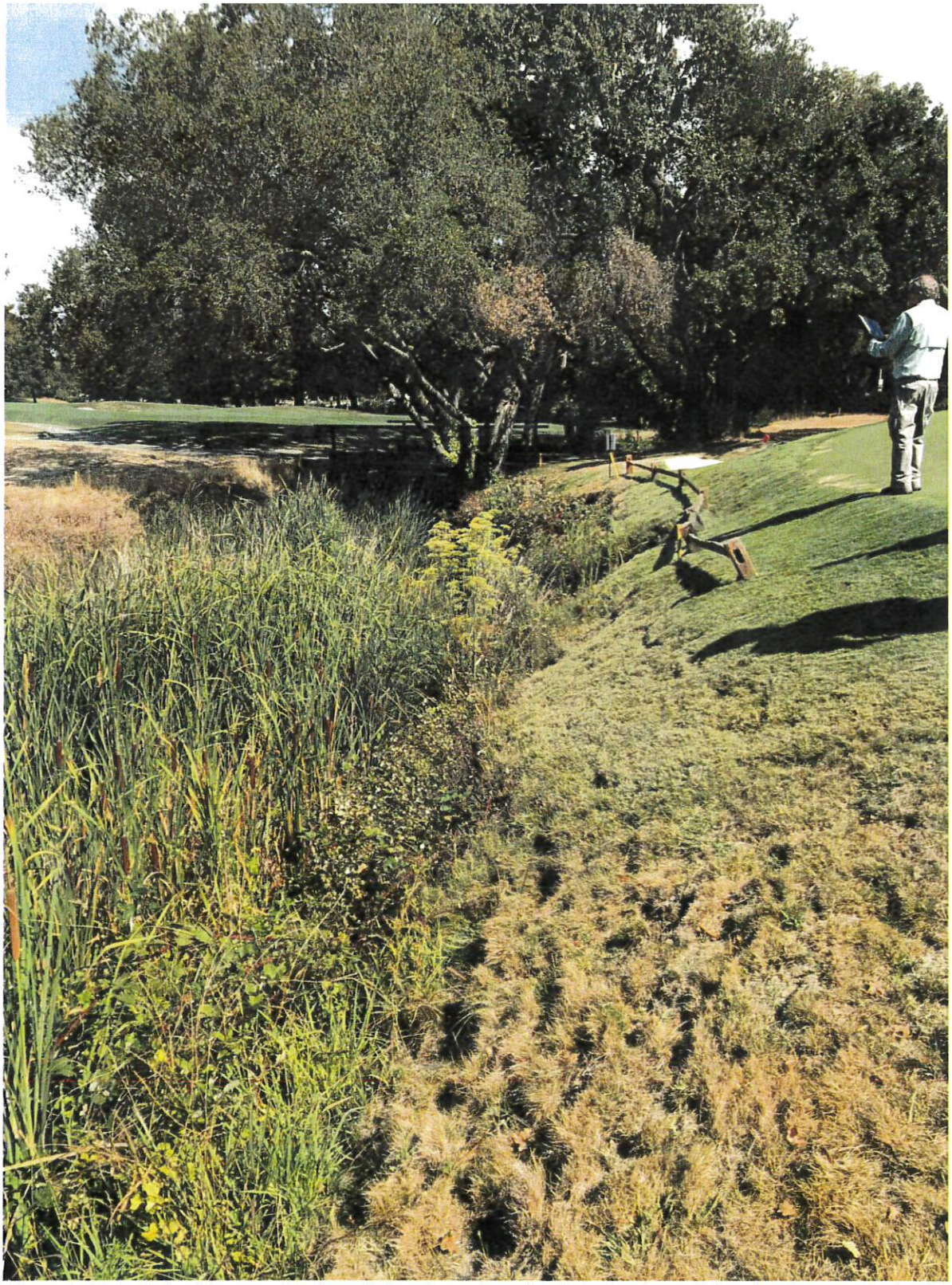

Photo 1. Hole 3, looking north. Cattail-dominated wetlands in Redwood Creek. Note pocked soil in foreground and tilting fence, with bank failure below in upper right (8/27/2018).

Photo 2. Hole 3 bank failure (8/27/2018), view to the north.

Photo 3. Hole 3, view of Redwood Creek and failing bank looking south (8/27/2018).

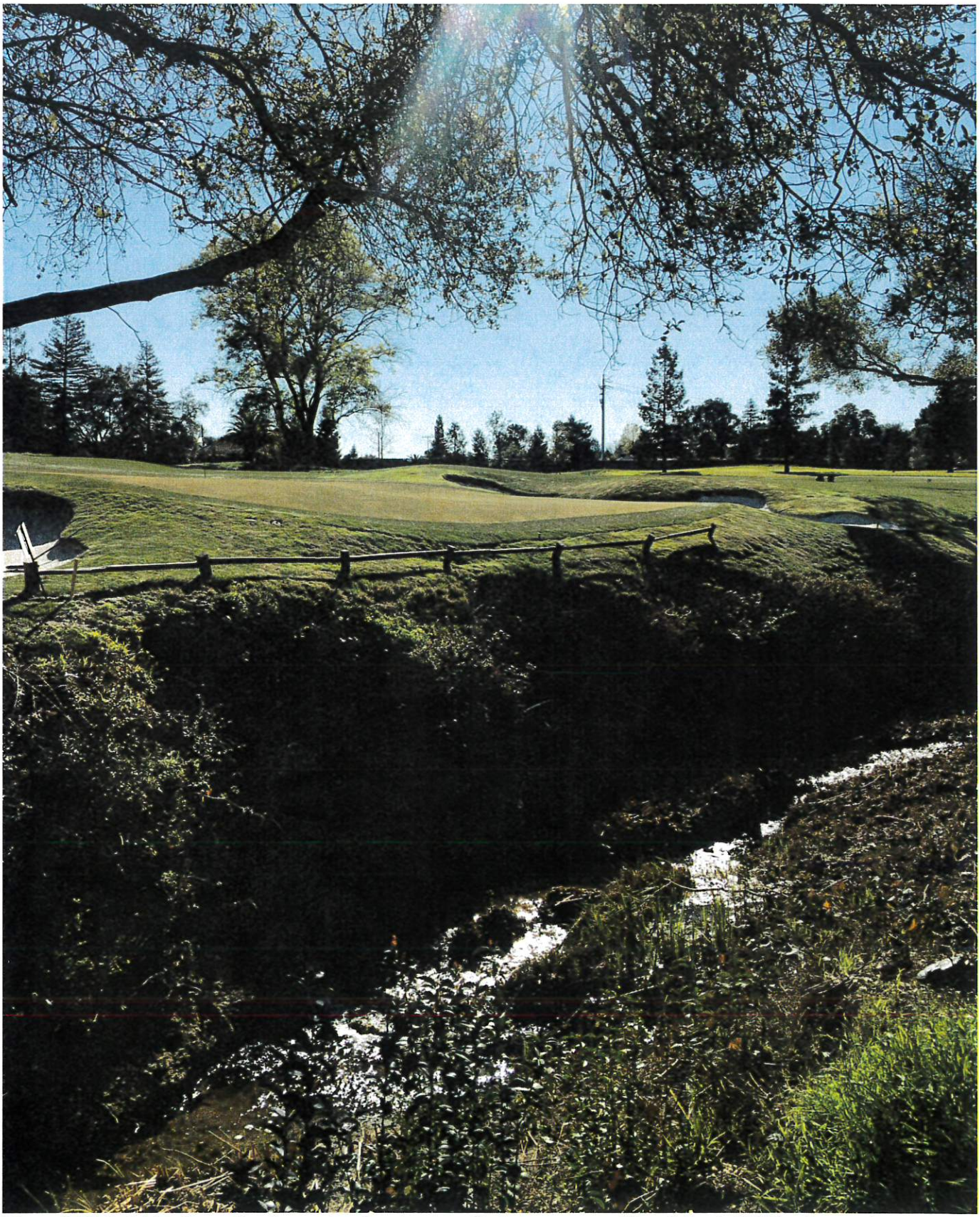

Photo 4. Hole 16 bank erosion is nearing fencing installed to protect golfers (March 2019), view to the southeast.

Photo 5. Hole 16. Redwood Creek and eroding bank, looking south (8/27/2018).

Photo 6. Hole 16, failing east bank, view to the north (8/27/2018).

Wetland and Riparian Habitat Restoration Plan
Menlo Country Club Bank Stabilization Project, Woodside, CA

Prepared for:
Menlo Country Club
2300 Woodside Road
Woodside, CA 94062

Prepared by:

MOSAIC ASSOCIATES
1690 SAN PABLO AVENUE, SUITE D
PINOLE, CA 94564
PHONE: (510) 964-0394

June 2019

ATTACHMENT 3

TABLE OF CONTENTS

1.0 INTRODUCTION

Menlo Country Club, originally developed in 1911, consists of approximately 140 acres of recreational facilities including an 18-hole golf course, club house facilities and infrastructure, and undeveloped areas on the western portion of the property located at 2300 Woodside Road in Woodside, CA (Figure 1). Redwood Creek flows through the golf course in a northerly direction through the eastern side of the property. Bank erosion adjacent to Holes 3 and 16 is threatening developed golf course features. The Country Club is planning to repair the eroding banks at Holes 3 and 16. This Wetland and Riparian Habitat Restoration Plan (HRP) describes wetland and riparian restoration activities that are proposed by the Country Club to mitigate for the effects of bank repair and restore wetlands and riparian habitat along Redwood Creek. Restoration activities to mitigate for unavoidable impacts to wetlands and riparian habitat will occur in the areas that will be impacted by the bank repair project.

2.0 PROJECT DESCRIPTION

The proposed project consists of the repair of the banks in two reaches of Redwood Creek adjacent to Holes 3 and 16 (Figures 2A and 2B). The existing, steeply incised and eroding creek banks will be graded back to create a gentler slope than the existing near-vertical, actively eroding banks, and the channel will be widened. During construction, the reaches of Redwood Creek subject to construction will be temporarily dewatered with cofferdams and bypass pipes. Approximately 136 linear feet of creek bed and bank at Hole 3 and 158 linear feet at Hole 16 will be disturbed during construction. Emergent wetland vegetation in the bed of channel, and ruderal species on the banks will be removed to facilitate construction. No tree removals are required. Large boulders will be installed along the toe of the slope in short sections of the bank repair area and adjacent to existing golf cart bridges to stabilize the repaired creek banks and prevent erosion in the transitions between the widened channel in the project areas and the narrower, existing channel. The approximately 294 linear feed of Redwood Creek disturbed during construction will be revegetated with appropriate wetland and riparian vegetation. Greens and roughs adjacent to the reaches of creek subject to construction will be used for staging and construction access as well as existing golf course maintenance areas. Construction equipment will be positioned at the creek top of bank.

Wetland and riparian restoration planting and seeding will be implemented in the fall, after bank stabilization earthwork is complete.

3.0 BASELINE INFORMATION

3.1 Vegetation in Restoration Area

The restoration area encompasses the reaches of Redwood Creek adjacent to Holes 3 and 16 that will be disturbed by earthwork (Figure 3). The golf course surrounds the bank stabilization

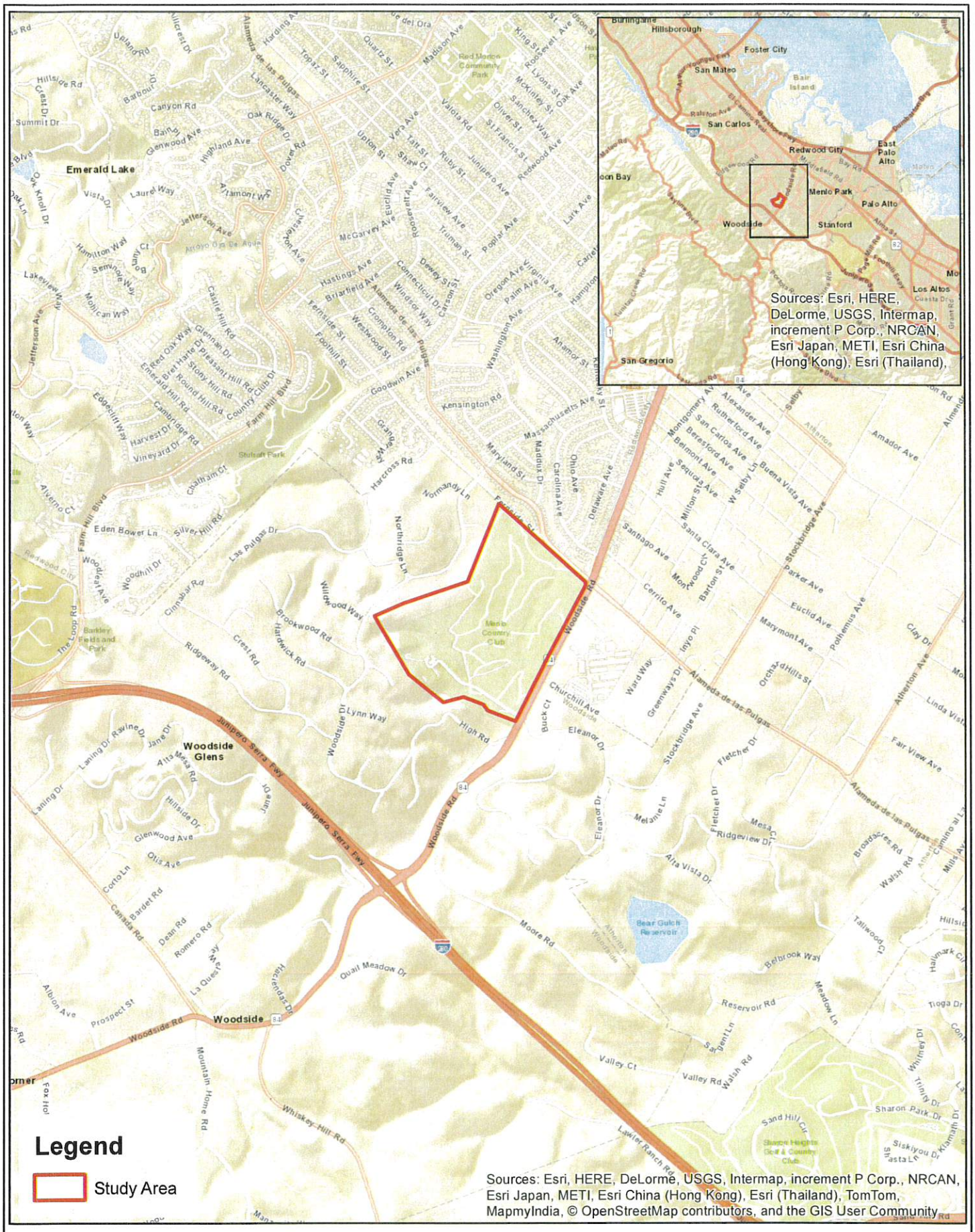

Figure 1. Study area locality map.

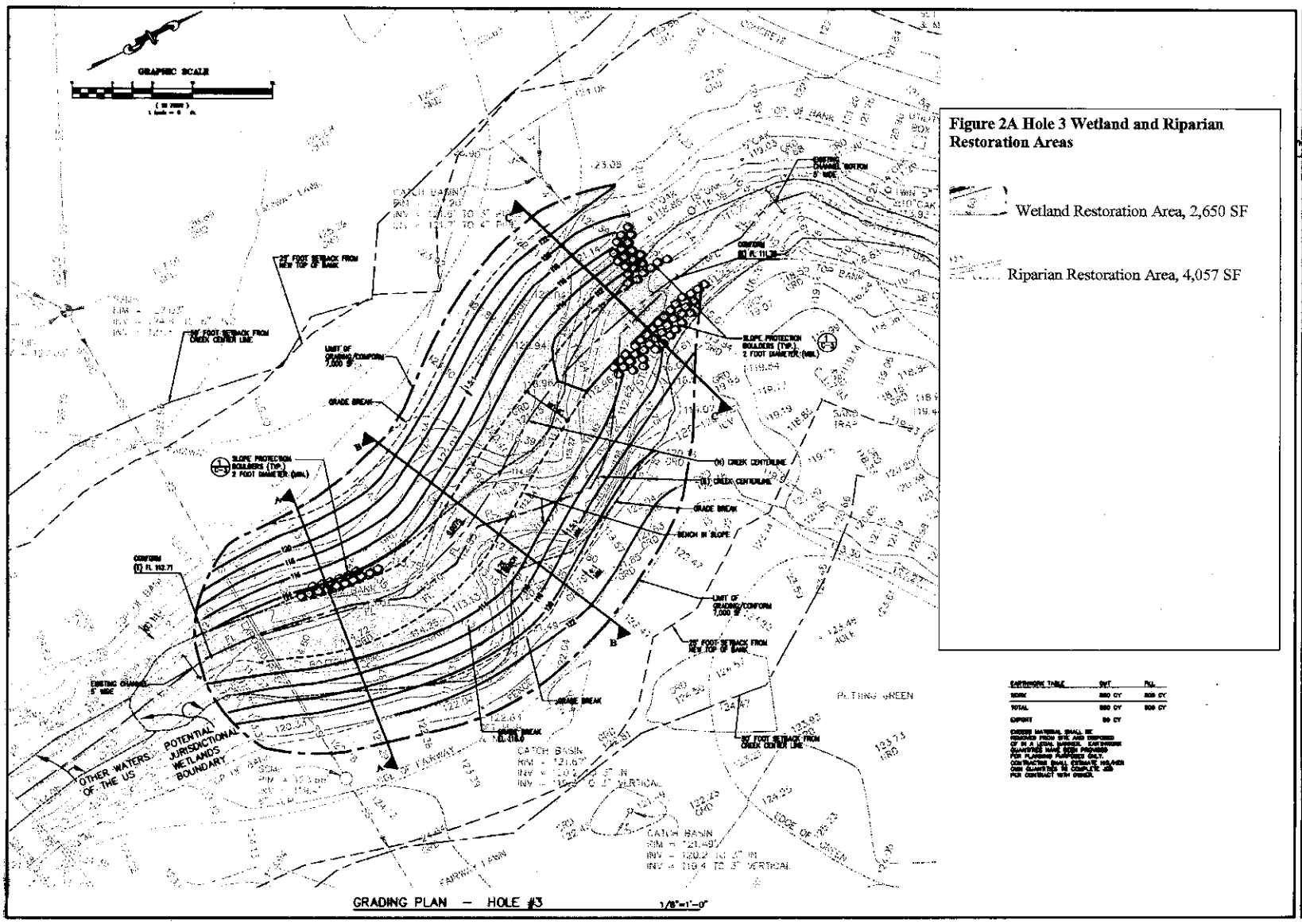

Figure 2A Hole 3 Wetland and Riparian Restoration Areas

Wetland Restoration Area, 2,650 SF

Riparian Restoration Area, 4,057 SF

Menlo Country Club - Creek Bank Restoration
2900 WOODSIDE ROAD
SAN MATEO COUNTY
California
Woodside

CONTENTS:
HOLE #3 GRADING PLAN

DATE 05/15/19
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OF 11 SHEETS

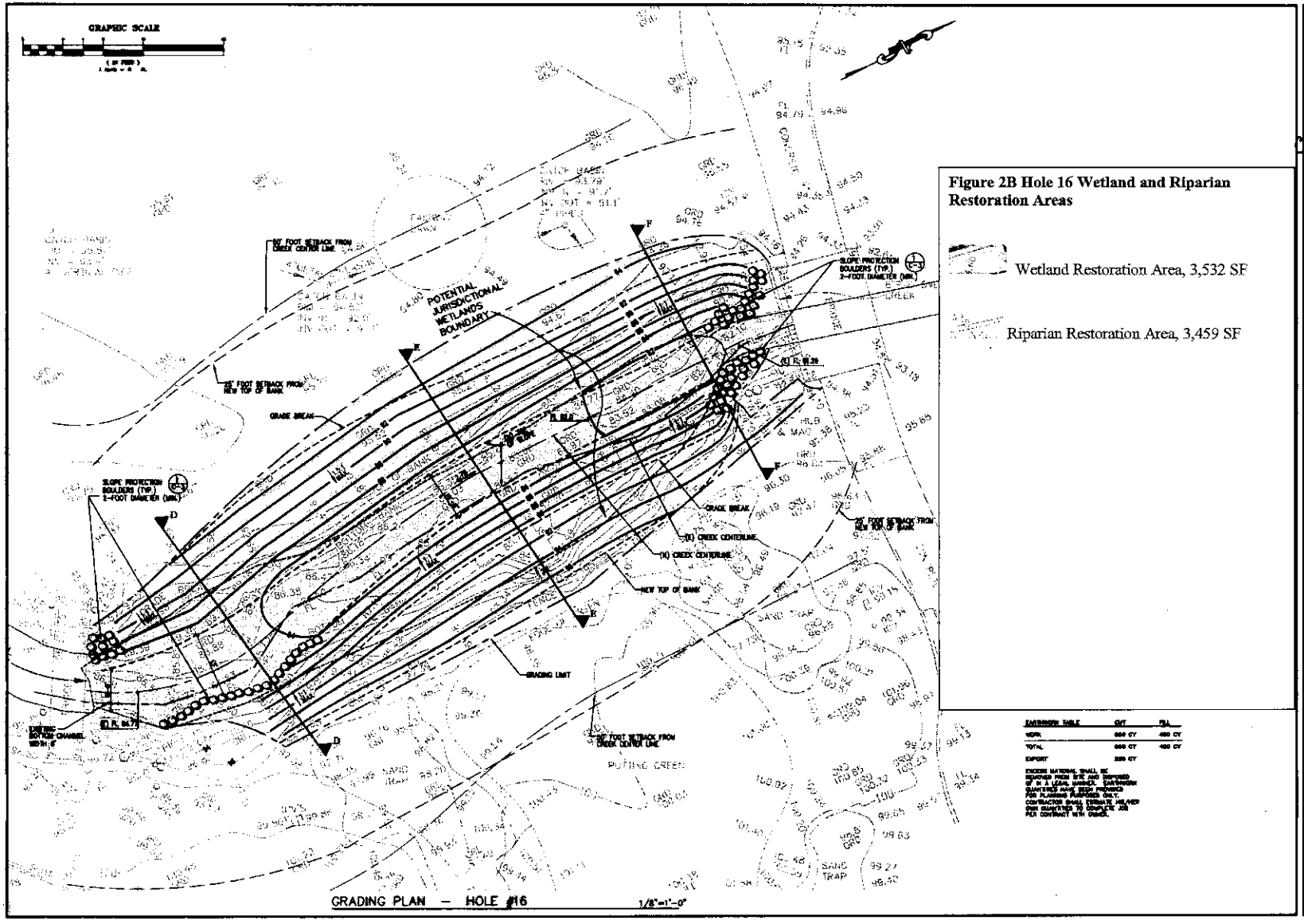

Figure 2B Hole 16 Wetland and Riparian Restoration Areas

Wetland Restoration Area, 3,532 SF

Riparian Restoration Area, 3,459 SF

Menlo Country Club - HOLE 16 CREEK STABILIZATION
2900 WOODSIDE ROAD
Woodside SAN MATEO COUNTY California

CONTENTS
HOLE #16 GRADING PLAN

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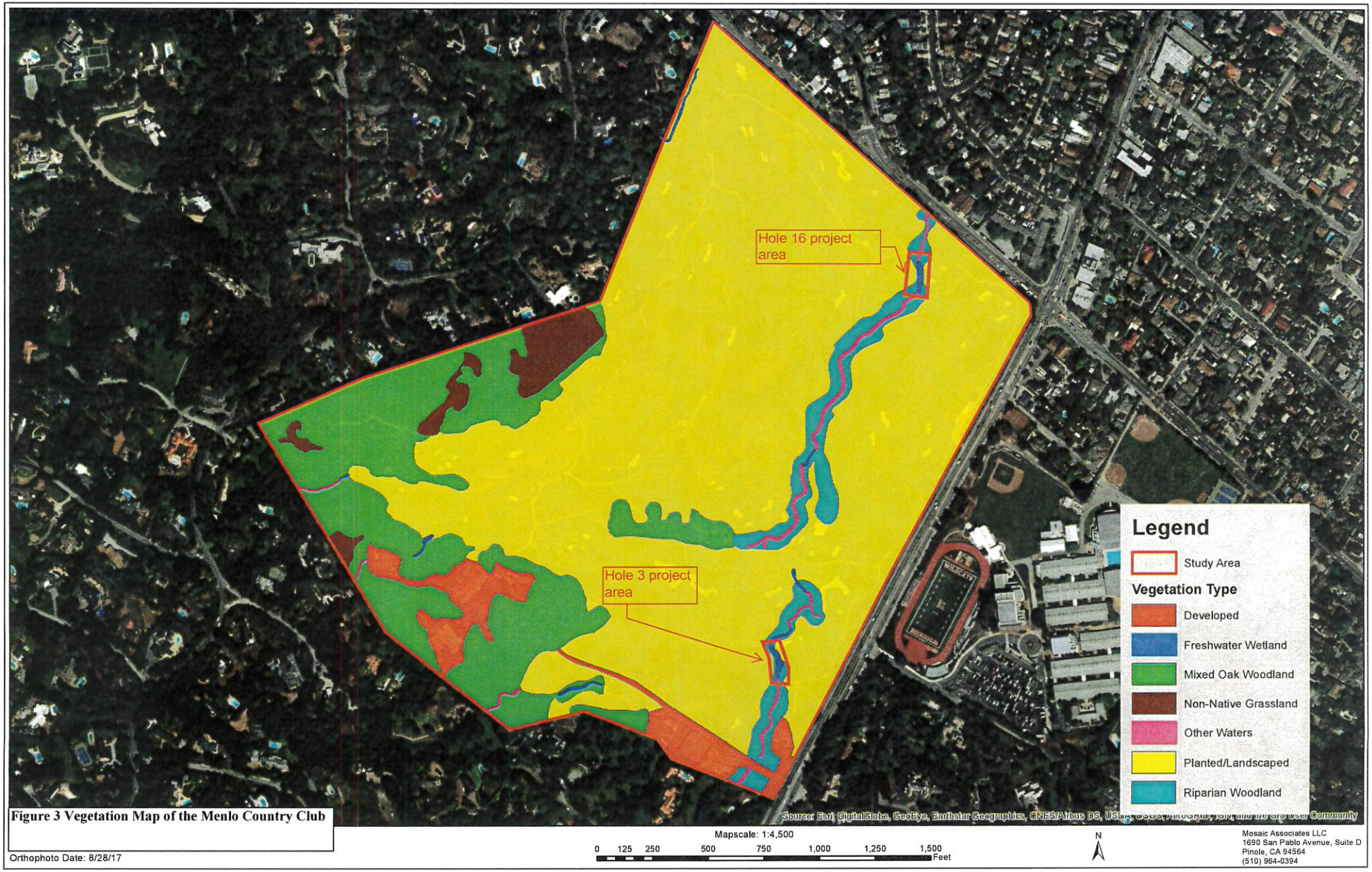

Figure 3 Vegetation Map of the Menlo Country Club

Orthophoto Date: 8/28/17

project and restoration area. Surrounding land uses consist of Alameda de las Pulgas and dense residential development to the north, Highway 84, Woodside High School, and moderately dense residential development to the east, and moderately dense residential development to the south and west.

Vegetation types within the restoration area include planted/landscaped (golf greens and associated features), freshwater wetland and other waters, and riparian woodland. These vegetation types are described below.

Planted/Landscaped habitat consists of vegetated areas on and adjacent to the golf course that are planted and regularly watered and mowed, including fairways, tees, and greens composed of irrigated turfgrass, adjacent roughs seeded with native and non-native herbaceous species including Italian ryegrass (*Lolium perenne*), creeping wildrye (*Elymus triticoides*) and meadow barley (*Hordeum brachyantherum*), and areas planted with native and non-native trees including redwood (*Sequoia sempervirens*), weeping willow (*Salix babylonica*), deodar cedar (*Cedrus deodara*), plum (*Prunus* sp.), juniper (*Juniperus* sp.), and pine (*Pinus* spp.). This habitat also includes unvegetated areas such as golf cart paths, sand bunkers, and bathrooms and other minor facilities located within the golf course perimeter.

Freshwater Wetland occurs along Redwood Creek and is dominated by hydrophytic plant species including narrow-leafed cattail (*Typha angustifolia*), water cress (*Nasturtium officinale*), tall flatsedge (*Cyperus eragrostis*), spreading rush (*Juncus patens*), soft rush (*Juncus effusus*), iris-leaved rush (*Juncus xiphioides*), hairy willow herb (*Epilobium ciliatum*), rabbitsfoot grass (*Polypogon monspeliensis*), seep monkeyflower (*Mimulus guttatus*), and false waterpepper (*Persicaria hydropiperoides*).

Unvegetated other waters are present in Redwood Creek where hydrophytic plants (plants adapted to inundation or soil saturation) and/or hydric soils (soils formed under conditions of saturation, flooding or ponding) were lacking, primarily due to the shading effect of mature riparian trees adjacent to the creek.

Riparian Woodland, consisting of the *Quercus agrifolia* Woodland Alliance[1] and the *Quercus lobata* Woodland Alliance, are present along Redwood Creek, and is dominated by a canopy of coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), California buckeye (*Aesculus californica*), willow (*Salix* spp.), and acacia (*Acacia* sp.), with an understory of native and non-native shrubs and herbaceous species, including poison oak (*Toxicodendron diversiloba*), snowberry (*Symphoricarpos sp.*), toyon (*Heteromeles arbutifolia*), California figwort (*Scrophularia californica*), California rose (*Rosa californica*), Himalaya blackberry (*Rubus armeniacus*), English ivy (*Hedera helix*), and cotoneaster (*Cotoneaster* sp.).

In the bank repair and restoration area, riparian habitat is largely comprised of ruderal understory species. Riparian trees are located upstream and downstream of the bank repair work areas.

[1] Alliance nomenclature follows Sawyer et al. (2009).

3.2 Hydrology

The principal hydrologic sources for the bank repair and restoration area are direct precipitation, surface sheet flow from surrounding uplands, near-surface flow and groundwater discharge, golf course irrigation, and drainage through Redwood Creek. Redwood Creek originates southwest of Highway 280, drains northbound under Highway 280 and west of Woodside Road, then flows onto the Menlo Country Club property. Redwood Creek exits the property by discharging into an approximately 12-foot diameter concrete culvert under Alameda da las Pulgas, and emerges downstream of the culvert as a concrete flood control channel, where it continues through dense residential development before discharging into San Francisco Bay approximately 3.5-miles north of the Menlo Country Club property.

3.3 Aquatic Resource Delineation

An aquatic resource delineation of the entire Menlo Country Club property has been prepared (Coast Range Biological July 2018).

4.0 RESTORATION PLAN

Restoration plan objectives, project impacts, and mitigation for project impacts and site selection are described below.

4.1 Objectives

The objectives of the Menlo Country Club Habitat Restoration Plan (HRP) are to:

- Restore 0.17 acres of riparian habitat on the banks of Redwood Creek upslope of the wetland restoration area with native riparian vegetation within the area disturbed by the bank stabilization project. Native species, including planted Pacific ninebark, California blackberry, seeded native forbs and grasses and native recruits will provide the dominant cover in the restored riparian habitat.
- Restore 0.14 acres of self-sustaining wetland vegetation in areas that are disturbed during construction. Native wetland species, including planted sandbar willow, Pacific ninebark, California blackberry, seeded and native recruits will provide the dominant cover in the restored wetland habitat.

4.2 Project Impacts and Mitigation

Table 1 describes the unavoidable impacts of the project on freshwater wetland and ruderal riparian vegetation resulting from bank stabilization project and proposed mitigation, which will be accomplished through restoration of wetland and riparian habitat within the areas disturbed by construction.

Table 1. Wetland and Riparian Habitat Impacts and Proposed Mitigation

Impacts		Mitigation	
Habitat Type	**Area of Impact**	**Habitat Type**	**Restoration Area**
Hole 3			
Freshwater Wetland (Waters of the U.S.)	Fill: 0.04 ac (1,690 SF) Excavation: 0.03 ac (1,094 SF)	Freshwater Wetland (Waters of the U.S.)	0.06 ac (2,650 SF)
Riparian (Waters of the State)	Fill: 0.01 ac (444 SF) Excavation: 0.03 ac (1,306 SF)	Riparian (Waters of the State)	0.09 ac (4,057 SF)
Hole 16			
Freshwater Wetland (Waters of the U.S.)	Fill: 0.03 ac (1,324 SF) Excavation: 0.04 ac (1,826 SF)	Freshwater Wetland (Waters of the U.S.)	0.08 ac (3,532 SF)
Riparian (Waters of the State)	Fill: 0.01 ac (524 SF) Excavation: 0.02 ac (750 SF)	Riparian (Waters of the State)	0.08 ac (3,459 SF)
TOTALS			
Freshwater Wetland (Waters of the U.S.)	Fill: 0.07 ac (3,014 SF) Excavation: 0.07 ac (2,920 SF)	Freshwater wetland (Waters of the U.S.)	0.14 ac (6,182 SF) ***Mitigation ratio: 1.07:1*** (Mitigation:Impact)
Riparian (Waters of the State)	Fill: 0.02 ac (968 SF) Excavation: 0.05 ac (2,056 SF)	Riparian (Waters of the State)	0.17 ac (7,516 SF)

The bank stabilization project requires the excavation and fill of 0.14 acres of freshwater wetlands and 0.07 acres of ruderal riparian habitat. Mitigation will restore 0.14 acres of freshwater wetland and 0.17 acres of riparian habitat in the areas impacted by bank repair

construction activities. Temporary impacts to 0.003 acres of freshwater wetland will be restored by the removal of the cofferdams once construction has been completed.

The earthen bed and banks will support the restoration of native wetland and riparian vegetation. While dense emergent wetland cover in the channel is already present and will be restored, the eroding banks are nearly vertical, which limits the establishment of riparian vegetation. Native, riparian vegetation will be restored to the repaired banks.

4.3 Design Alternatives to Avoid or Minimize Wetland Impacts

Alternatives Considered but Rejected
Several alternatives to the proposed project were considered and ultimately rejected by the Menlo Country Club and project team. Alternatives considered and the reasons they were ultimately rejected are identified below.

1. No bank stabilization repairs. Under this alternative, the eroding banks would not be repaired. The creek banks would continue to erode, which would result in a continued source of sediment being discharged to Redwood Creek. Without bank repairs, the golf course features including Holes 3 and 16, sandtraps and fairways would be at risk of damage. The unrepaired banks would continue to present a risk to golfers who, despite fencing and warning signs, frequently attempt to retrieve balls that fall short of the holes.

   This alternative was rejected because the adverse impacts of continued erosion, damage to golf course features and liability to the Country Club from not correcting a documented hazard are unacceptable.

2. Installation of sheet pile walls in golf greens adjacent to Redwood Creek. Under this alternative, sheet pile walls would be driven into the golf greens adjacent to but above top of bank. Bank erosion would continue, but would be arrested from further encroachment into golf course features once creek erosion reached the sheet piles.

   This alternative was rejected because the area of erosion has increased from when it was first considered, leaving no room to accommodate the sheet piles without impacting developed golf course features. Furthermore, this option would result in a continued source of sedimentation of Redwood Creek, with adverse impacts to downstream water quality.

3. Line the eroding banks with open cell articulating concrete blocks. Under this alternative, the eroding creek banks and channel bed would be excavated to create appropriate grades. Open cell articulating concrete blocks (Armorflex Class 30 or equivalent) would be installed on the bed and banks to create an armored surface that would be resistant to creek erosion. The voids in the blocks would be filled with top soil and gravel, and planted with an appropriate seed mix.

   This alternative was rejected because the armor blocks are themselves vulnerable to dislocation during large storm flows, particularly at the upstream edges where large

magnitude flows hit the transition between the natural earthen banks and the reinforced banks. Another drawback to this concept is that the concrete blocks do not provide a favorable medium for the establishment of native wetland or riparian vegetation. The reinforced banks would be thinly vegetated and visually unattractive. Furthermore, the armor blocks would increase impact on waters of the U.S. and state above that of the proposed project.

Impact Minimization
The proposed project minimizes the amount of rock that will be used to stabilize the bank.

Hole 3:

1. A limited amount of large rock is to be placed on the banks at the downstream limit of work where the widened channel transitions to the existing, narrower streambed. In this location, the rock would prevent bank erosion and the loss of mature valley oaks downstream of the proposed work area.
2. A small amount of rock is to be placed at the toe of the west bank in an area that will be exposed to high energy flows during major storm events. The rock in this location will reinforce and protect the bank from future erosion.

Hole 16:

1. The smallest practicable amount of rock is used at the toe of slope in the upstream area of work. The rock boulders will protect the repaired banks where the higher velocity flows transition from a narrow, unvegetated channel into the wider channel that will become revegetated with emergent wetland vegetation.
2. Rock is also used at the downstream limit of work where flows from the wider, vegetated floodway enters the narrower unvegetated channel. As at Hole 3, the rock boulders will help protect established mature valley oaks from erosive flows.

The earthen bed and banks will support the restoration of native wetland and riparian vegetation. While dense emergent wetland cover in the channel is already present and will become re-established, the eroding banks are nearly vertical, which limits the establishment of riparian vegetation. Native, riparian vegetation will be restored to the repaired banks.

5.0 RESTORATION WORK PLAN

Restoration will take place within the areas subject to construction disturbance. A detailed description of the construction methods, timing, sequence, methods of plant establishment and post-construction management is detailed below. An implementation schedule is detailed in Table 8. Biological resources avoidance and minimization measures required by the regulatory agency permits and described in the *Biological Resources Report for the Menlo Country Club Bank Stabilization Project* (Mosaic Associates 2019) will be implemented.

The creek banks in the construction area will be planted with native trees, shrubs, and vines and will be seeded with native plant seed mixes. Native wetland vegetation will re-establish naturally in the low-flow channel from upstream, vegetated wetlands. No planting is proposed in the low-

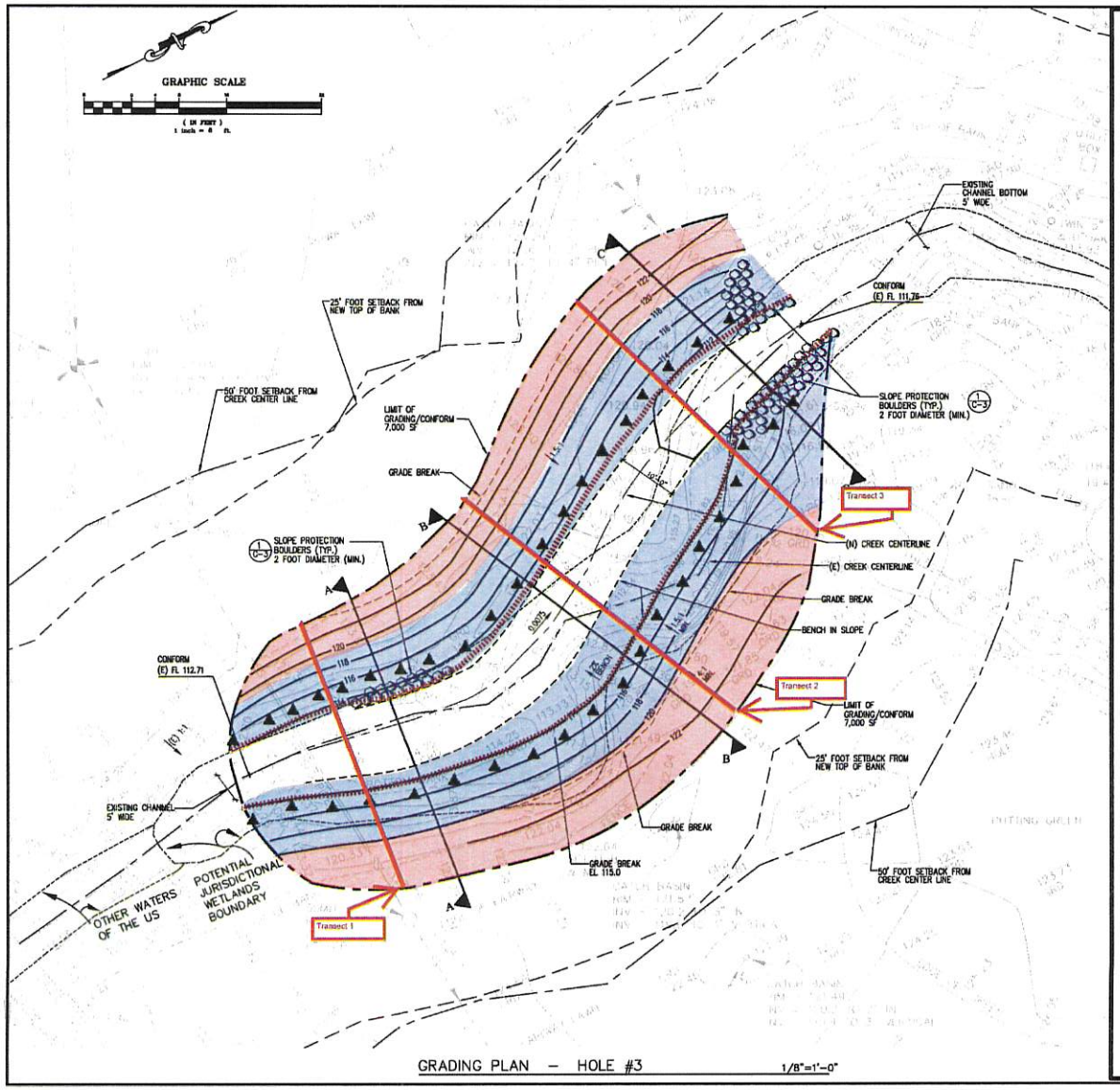

Figure 4A: Hole 3 Planting & Seeding Plan

Seed Mix 1: Zone 1, 0.05 ac

Species	lb/ac
Agrostis pallens, Diego bentgrass	5
Bromus carinatus, CA brome	8
Festuca idahoensis, Idaho fescue	6
Festuca microstachys, small fescue	4
Hordeum brachyantherum, meadow barley	6
Stipa pulchra, purple needlegrass	10
Total	**39**

Planting & Seed Mix 2: Zone 2 0.07 ac

Planting		
Species, Number	**Symbol**	**Container Type, Spacing, Symbol**
Salix exigua sandbar willow, 42	•••••••	pole cutting, 6' OC
Physocarpus capitatus Pacific ninebark, 40	▲	1-gal, 6' OC
Rubus ursinus CA blackberry, (927)		TB-5, 2' OC

Seed Mix Zone 2	
Species	**lb/ac**
Hordeum brachyantherum, meadow barley	12
Elymus glaucus, blue wildrye	8
Cyperus eragrostis, tall flatsedge	4
Carex praegracilis, clustered field sedge	2
Juncus patens, spreading rush	0.75
Achillea millefolium, yarrow	0.5
Eschscholzia californica, CA poppy (Alameda)	1.5
Sisyrinchium bellum, blue-eyed grass	3.0
Artemisia douglasiana, mugwort	2.25
Total	**34**

Seed Mix 3: Zone 3, 0.03 ac

Toe of slope between willows & low flow channel

Species	lb/ac
Mimulus guttatus, seep monkeyflower	0.5
Juncus xiphiodes, iris-leaf rush	0.5
Total	**1.0**

CLIFFORD BECKEL AND ASSOCIATES

CLIFFORD BECKEL, PE

Menlo Country Club - Creek Bank Restoration
2900 WOODSIDE ROAD
SAN MATEO COUNTY
California
Woodside

Hole 3 Planting Plan

DATE 05/15/19
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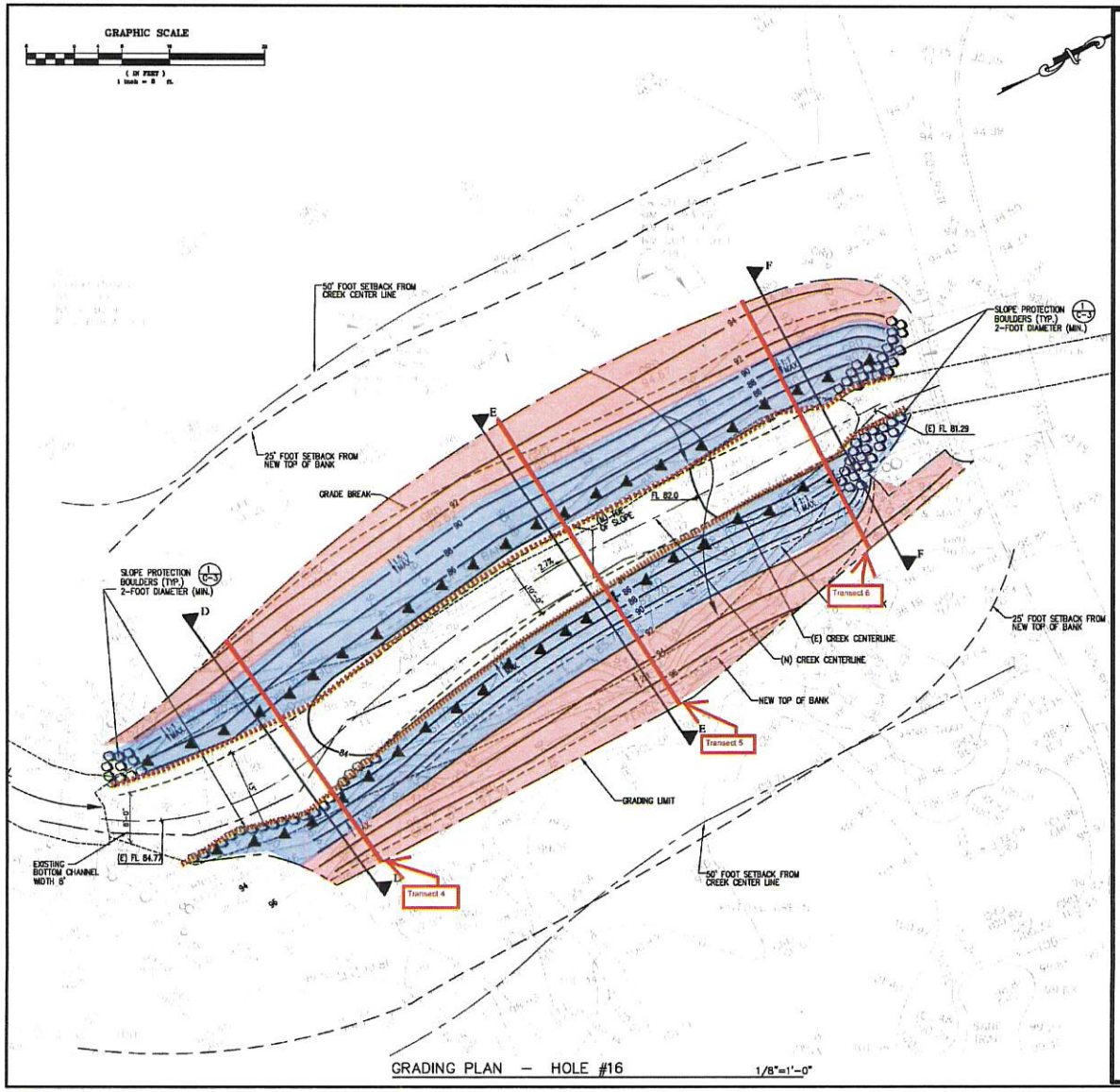

Figure 4B: Hole 16 Planting & Seeding Plan

Seed Mix 1: Zone 1, 0.06 ac

Species	lb/ac
Agrostis pallens, Diego bentgrass	5
Bromus carinatus, CA brome	8
Festuca idahoensis, Idaho fescue	6
Festuca microstachys. small fescue	4
Hordeum brachyantherum, meadow barley	6
Stipa pulchra, purple needlegrass	10
Total	

Planting & Seed Mix 2: Zone 2, 0.06 ac

Planting		
Species, Number	**Symbol**	**Container Type, Spacing, Symbol**
Salix exigua sandbar willow, 54	• • • • • •	pole cutting, 6' OC
Physocarpus capitatus Pacific ninebark, 45	▲	1-gal, 6' OC
Rubus ursinus CA blackberry, (742)		TB-5, 2' OC

Seed Mix Zone 2	
Species	**lb/ac**
Hordeum brachyantherum, meadow barley	12
Elymus glaucus, blue wildrye	8
Cyperus eragrostis, tall flatsedge	4
Carex praegracilis, clustered field sedge	2
Juncus patens, spreading rush	0.75
Achillea millefolium, yarrow	0.5
Eschscholzia californica, CA poppy (Alameda)	1.5
Sisyrinchium bellum, blue-eyed grass	3.0
Artemisia douglasiana, mugwort	2.25
Total	**34**

Seed Mix Zone 3: 0.04 ac
Toe of slope between willows & low flow channel

Species	lb/ac
Mimulus guttatus, seep monkeyflower	0.5
Juncus xiphiodes, iris-leaf rush	0.5
Total	1.0

Menlo Country Club - HOLE 16 CREEK STABILIZATION
2900 WOODSIDE ROAD
SAN MATEO COUNTY
Woodside California

Hole 16 Planting Plan

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flow channel due to perennial flow which would wash away introduced seed. Once established, the restored wetland and riparian vegetation will provide improved habitat for native wildlife that frequent Redwood Creek within the Menlo Country Club.

5.1 Wetland Restoration

Due to the lack of tree cover, limited summertime flow, and low gradient of Redwood Creek within the project area, emergent freshwater vegetation dominates the bed and a portion of the banks of Redwood Creek in the bank repair area adjacent to Holes 3 and 16. At Hole 3, potentially jurisdictional wetlands were mapped across the low-flow channel up to the middle of the bank at approximately 118 feet in elevation (Topographic Survey Sheets C-0.1 and C-0.2) At Hole 16, potentially jurisdictional wetlands were mapped across the low-flow channel up to the middle of the bank at approximately 90 feet.

The bank repair project will widen the low-flow channel and re-contour the banks to restore a more stable gradient than the present, near-vertical banks. Using the elevations of the existing mapped wetlands to conservatively plan the upper elevation of post-construction wetland habitat, we have estimated that wetland vegetation will become established in the low-flow channel and lower banks up to elevation 114.5 feet at Hole 3 and 89 feet at Hole 16. Perennial flow in the low-flow channel and saturated soil conditions in the lower slope are expected to support the development of freshwater wetland vegetation in a 0.14-acre area after construction. Hydric soils are expected to develop in the wetland restoration area, although it may take longer than the five-year monitoring and reporting period for their development.

The widened creek-bed will be allowed to naturally revegetate with native wetland plants that are present in Redwood Creek upstream of the Holes 3 and 16 work areas, including native wetland obligate (OBL) and facultative wetland (FACW) species such as narrow-leaf cattail (OBL), tall flatsedge (FACW), water cress (OBL), spreading rush (FACW), soft rush (FACW), iris-leaf rush (OBL), and seep monkeyflower (OBL). Sandbar willow (*Salix exigua*, FACW) pole cuttings will be planted at six-foot centers at the toe of the restored slope, with Pacific ninebark (*Physocarpus capitatus*, FACW) cuttings or container plants installed at six-foot centers within the wetland restoration area immediately upslope of the willows. California blackberry (*Rubus ursinus*, FAC) will be planted at two-foot centers from the toe to mid-slope area. An approximately five-foot wide area along the toe of the restored banks will be seeded with wetland obligate species seep monkeyflower and iris-leaf rush (Seed Mix 3). The lower to mid-slope, including the wetland restoration areas will be seeded with a native wetland and riparian seed mix (Seed Mix 2), to help establish native wetland species in the wetland restoration areas. Figures 3A and 3B show the proposed planting and seeding that will be used to restore wetland habitat.

5.2 Riparian Restoration

Riparian restoration is proposed in a 0.17-acre area on the repaired banks upslope of the wetland restoration areas at Holes 3 and 16. The existing, near-vertical banks will be re-contoured to a more gently sloped gradient and will be planted with native riparian species that are expected to rapidly establish vegetative cover on the restored banks. Because golfer sight lines across the creek must be maintained, plantings in the riparian restoration area are limited to the low-

growing vine California blackberry, and the application of two seed mixes. Seed Mix 1, comprised of native grasses will be applied to the upper slope, where golfers are expected to periodically retrieve balls that fall short of the hole. Seed Mix 2, containing a mix of wetland and riparian species will be applied on the mid- to lower slope. Figures 3A and 3B show the proposed planting and seeding that will be used to restore riparian habitat.

5.3 Site Preparation Prior to Planting and Seeding

Once the final slope gradients have been established, the upper 6-12 inches of soil will be lightly scarified by the Construction Contractor with the teeth of the excavator bucket to loosen compacted soils and prepare the finished slopes for seeding.

If the Project Restorationist determines that soil compaction on the finished slopes is likely to inhibit the establishment of the willow pole cuttings, Pacific ninebark container plants, and California blackberry plants, he or she may recommend that planting locations be loosened by the Landscape Contractor to an appropriate depth with the use of a hand-held soil auger.

5.4 Wetland and Riparian Restoration Planting and Seeding

Recommended plantings and seed mixes are presented in Tables 2-4. Substitutions may not be made without the prior approval of the Project Restorationist. Recommended planting locations are shown on Figures 3A and 3B Actual locations may be field-adjusted by the Project Restorationist.

Table 2: Wetland and Riparian Restoration Plant Palette

Species	Location	Type	Spacing	Number of plants
Salix exigua sandbar willow	toe of slope	locally collected pole cuttings	6 feet on center, row planting	96
Physocarpus capitatus Pacific ninebark	lower slope, above willows	locally collected woody cuttings or 1-gallon containers	6 feet on center, row planting	85
Rubus ursinus California blackberry	lower to mid slope	Tree band-5 or similar	2 feet on center, triangular grid	1,669

Table 3. Upper Slope Riparian Seed Mix 1
(Hole 3: 2,142 SF/0.05 ac, Hole 16: 2,605 SF/0.06 ac)

Species	lb/ac
Agrostis pallens, Diego bentgrass	5
Bromus carinatus, CA brome	8
Festuca idahoensis, Idaho fescue	6
Festuca microstachys. small fescue	4
Hordeum brachyantherum, meadow barley	6
Stipa pulchra, purple needlegrass	10
Total	**39 lbs/acre**

Table 4. Wetland and Riparian Seed Mix 2, Toe to Mid-Slope
(Hole 3: 3,195 SF/0.07 ac, Hole 16: 2,560 SF/0.06 ac)

Species	lb/ac
Hordeum brachyantherum, meadow barley	12
Elymus glaucus, blue wildrye	8
Cyperus eragrostis, tall flatsedge	4
Carex praegracilis, clustered field sedge	2
Juncus patens, spreading rush	0.75
Achillea millefolium, yarrow	0.5
Eschscholzia californica, California poppy (Alameda)	1.5
Sisyrinchium bellum, blue-eyed grass	3.0
Artemisia douglasiana, mugwort	2.25
Total	**34 lbs/ac**

Table 5. Wetland Seed Mix 3, Toe of Slope
(Hole 3: 1,400 SF/0.03 ac, Hole 16: 1,600 SF/0.04 ac)

Species	lb/ac
Mimulus guttatus, seep monkeyflower	0.5
Juncus xiphiodes, iris-leaf rush	0.5
Total	**1 lbs/ac**

Wetland and riparian planting and seeding will be conducted in the fall after bank stabilization earthwork has been completed and the temporary cofferdams and bypass pipes have been removed. Container plants (California blackberry and Pacific ninebark) will be procured from local commercial sources by the Landscape Contractor and shall be at least average in size and vigor. Woody cuttings of Pacific ninebark may be used rather than containerized stock if a San Mateo County source of accessible donor plants is identified by the Landscape Contractor. Dead,

damaged or undersized materials shall not be used. Plant spacing will be as noted in Table 2 and as indicated on Figures 3A and 3B.

Planting holes for containerized stock shall be dug to twice the depth and diameter of the average plant and container root mass. The hole will be backfilled with native soil placed around the roots of the plant, ensuring that no voids or air pockets are created around the root system of the container plant and the surrounding soil. The root collar of the plants shall be level with the surrounding soil level. Pacific ninebark plantings be provided with weed-free mulch or weed mats in a three-foot diameter area surrounding each planting. A watering basin shall be built up around each Pacific ninebark planting. All plants shall be thoroughly watered, regardless of soil moisture conditions, on the same day as planting.

The seed mixes shall be applied by hand and lightly covered with a weed-free mulch, or with a hydro-mulch applicator in the fall after the container plants have been installed, but prior to installation of the willow pole cuttings. If hydroseeding is used, a plant-based tackifier shall be added to the slurry at 100lbs/acre and wood fiber mulch will be added to the slurry at 2000 lbs/acre.

Willow pole cuttings shall be collected and planted by the Landscape Contractor from donor sources in San Mateo County. Cuttings will be collected and planted during the month of December when the donor plants are dormant. All cuttings shall be 2.5-4 feet long, 1.0 to 4 inches in diameter at the thick end and consist of non-succulent material (*i.e.*, one year old or older). Cuttings shall be planted within two days of collection. If they are not planted the same day they are collected, they shall be stored in water. The rooting end of the cutting shall be planted such that approximately 2/3 of the cutting, but not less than one foot of the cutting is below the soil surface. To distinguish the upper and lower ends of the toe and slope cuttings, the rooting end shall be cut at an angle and the upper end cut square during collection.

A temporary overhead irrigation system will be installed and maintained by the Menlo Country Club and/or the Landscape Contractor during the first three years after planting. Coverage by the overhead sprinklers must extend from the top of bank to the Pacific ninebark plantings. The planted willows will not require supplemental irrigation since they will be installed where the root systems will readily access moisture from Redwood Creek base flow.

6.0 MAINTENANCE

Following planting and seeding, maintenance will be required until plants reach a point of self-sufficiency. The objective is to establish native vegetation that will be self-sustaining without the need for long-term maintenance. During the five-year monitoring and reporting period, maintenance of the installed plantings includes plant replacement, invasive species control, erosion control, debris removal, pest management, and plant and site protection.

A weed-free zone five feet in diameter shall be maintained by the Landscape Contractor around each planted willow, Pacific ninebark, and California blackberry. The Landscape Contractor

should anticipate quarterly site visits to maintain the weed-free zones around restoration plantings during the growing seasons of the first three years.

Zero-tolerance weed species within the restoration area over the monitoring period include scotch broom (*Cytisus scoparius*), giant reed (*Arundo donax*), pampas grass (*Cortaderia jubata*), poison hemlock (*Conium maculatum*), artichoke thistle (*Cynara cardunculus*), fennel (*Foeniculum vulgare*), Himalayan blackberry (*Rubus armeniacus*) and milk thistle (*Silybum marianum*). Establishment maintenance will be conducted by, and is the responsibility of the Landscape Contractor.

The Project Restorationist will make recommendations on site maintenance following the spring and summer site visits. Recommendations on restoration area maintenance will be made based on site observations.

The Landscape Contractor will replace any dead plants with the same species and size as specified in this restoration plan during the first year after planting, and as recommended by the Project Restorationist during the rest of the monitoring period. If required, replacement plantings would be installed during the fall.

Growth of all plant materials will demonstrate a trend toward healthy and successful establishment. Survivorship of all willows, Pacific ninebark and California blackberry will be 100% at the end of the one-year establishment maintenance period. If this minimum survivorship is not met at the end of the first year after planting, dead plants will be replaced at a 1:1 ratio by the Landscape Contractor.

7.0 PERFORMANCE STANDARDS

The performance standards detailed in Table 6 describe expectations for performance of habitats in the restoration area for the five years following construction. Implementation of this HRP is expected to restore native wetland vegetation in the low-flow channel of Redwood Creek and on the lower slopes of the restoration area, with native riparian plants restored to the top of bank.

No wildlife performance standards are proposed because the restoration actions, while expected to benefit native wildlife, are not proposed to compensate for impacts to wildlife.

The restoration effort shall be considered successful if, at the end of the five-year establishment maintenance period, the performance standards in Table 6 have been achieved. If the performance standards have not been met, deficiencies will be documented in the fifth year report and the Project Restorationist and Menlo Country Club will consult with the USACE, RWQCB and CDFW to determine whether remedial measures and/or additional monitoring will be required.

Table 6. Performance Standards

Performance Standard	Performance Standard Assessment	Remedial Actions
	Wetland Restoration Areas	
1. Wetland Vegetative Cover: a. Native wetland species will become established in the wetland restoration area during the 5-yr monitoring period. b. Year 3. The mean of absolute native wetland cover (OBL or FACW) measured in the wetland restoration area shall be 50% by year 3. c. Year 5. The mean of absolute native cover (OBL or FACW) measured in the wetland restoration area shall be 75% by year 5.	Vegetative cover and species composition shall be monitored along 6 transects within the restoration area. One-m^2 quadrats shall be sampled along each transect at fixed locations marked by rebar to measure absolute vegetative cover and species composition. Three quadrats will be sampled in the wetland restoration area for each transect with one quadrat on each side of the creek and a single quadrat in the Redwood Creek low-flow channel. Quantitative data collection will be conducted in the late spring/early summer when plants can be identified to species. Monitoring and reporting will be conducted annually for 5 years following construction.	If cover is not establishing as specified, evaluate potential causes of shortfall, including deficiencies in soils, competition by invasive species, mortality of planted and seeded natives, or animal browsing. Remedial actions shall be developed in response to site-specific analysis, and may include supplemental planting and seeding, increased irrigation, invasive species control, animal browse barriers, among others.
2. Wetland Habitat: 0.14 acres of wetland habitat will be established in the wetland restoration area by the end of the 5-yr monitoring period.	A formal wetland delineation in accordance with current USACE guidelines and manuals will be performed in the wetland restoration areas during the summer of the 5th year of monitoring. The delineation will be submitted to the USACE, RWQCB and CDFW with the 5th annual report.	If at least 0.14 acres of wetland habitat has not become established, evaluate potential causes of shortfall and develop remedial actions specific to the shortfall.

Performance Standard	Performance Standard Assessment	Remedial Actions
	Riparian Restoration Areas	
3. Riparian Vegetative Cover: a. Native riparian species will become established in the riparian restoration area during the 5-yr monitoring period. b. Year 3. The mean of absolute native riparian cover measured in the riparian restoration area subject to earthwork shall be 50% by year 3. c. Year 5. The mean of absolute native riparian cover measured in the riparian restoration area shall be 75% by year 5.	Vegetative cover and species composition shall be monitored along 6 transects within the restoration area. One-m^2 quadrats shall be sampled along each transect at fixed locations marked by rebar to measure absolute vegetative cover and species composition. Four quadrats will be sampled in the riparian restoration area for each transect with two quadrats each on both sides of the creek for each transect. Quantitative data collection will be conducted in the late spring/early summer when plants can be identified to species. Monitoring and reporting will be conducted annually for 5 years following construction.	If cover is not establishing as specified, evaluate potential causes of shortfall, including deficiencies in soils, competition by invasive species, mortality of planted and seeded natives, or animal browsing. Remedial actions shall be developed in response to site-specific analysis, and may include supplemental planting and seeding, increased irrigation, invasive species control, animal browse barriers, among others.
	Wetland and Riparian Restoration Areas	
4. Survival and Vigor: The survival rate for planted willows, Pacific ninebark and California blackberry will be 100% in Year 1 and 80% in Year 5. Seventy-five percent of the plantings will exhibit vigor 1 or 2 (see Section 8.2 for an explanation of vigor ratings).	The survival and vigor of all planted willows, Pacific ninebark and California blackberry will be measured annually. Due to the spreading nature of California blackberry which makes it difficult to distinguish individual plants, survivorship and vigor may be based on an estimate rather than a full plant count and vigor assessment.	Replacement plantings may be recommended if survival and vigor do not appear on target to meet performance standards. Additional invasive species control and supplemental irrigation may be recommended to ensure attainment of survival and vigor performance standards.

Performance Standard	Performance Standard Assessment	Remedial Actions
5. Invasive Non-native Plants: Year 5. The cover of non-native invasive plants with a Cal-IPC ranking of High or Moderate will be no more than 5% absolute cover in the wetland and riparian restoration areas.	The cover of non-native invasive plants with a Cal-IPC ranking of High or Moderate will be measured annually during the 5-year monitoring period as described above under Performance Standard 1 and 3. A qualitative visual assessment of the presence of invasive non-native plants will also be performed annually, with recommendations on control measures noted in monitoring memos and the annual monitoring report.	Thorough invasive plant control in years 1-3 should help ensure that invasive species are controlled, and that native species become well-established with dominant cover. The results of vegetation monitoring will be evaluated to determine whether control efforts are successful. Recommendations on materials and means of invasive species control will be communicated in monitoring memos following each inspection by the Project Restorationist. If performance criteria are not met in year 5, the maintenance and monitoring period may be extended until the criteria have been met.
6. Slope Stability The repaired banks will not exhibit any slumping, instability, undercutting or excessive incision or erosion.	The stability of the repaired slopes will be assessed annually during site monitoring.	Any signs of slope instability will be investigated by the Menlo Country Club, with repair recommendations developed as appropriate and reported in the annual monitoring reports.
7. Maintenance Measures The wetland and riparian restoration areas shall not require significant maintenance by the end of the 5-year monitoring period.	A summary of maintenance measures will be reported in the annual monitoring reports. Planted natives will not require supplemental irrigation, and invasive non-native species control will be limited to the removal of individual plants rather than large stands of invasive plants.	Thorough invasive plant control in years 1-3 should help ensure that significant maintenance measures are no longer needed by year 5.

8.0 MONITORING REQUIREMENTS

Qualitative and quantitative monitoring to assess the performance of the HRP will be conducted for a five-year period after construction and planting have been completed, or until the performance standards described in Table 6 have been met. A Project Restorationist who has experience with wetland and riparian restoration projects shall perform all monitoring.

8.1 Qualitative Monitoring

The wetland and riparian restoration areas shall be inspected not less than twice a year by the Project Restorationist during the five-year monitoring period in order to assess the efficacy of the restoration actions on the project site, and to address any problems that may hinder the attainment of the performance standards described in Table 6. Potential issues may include:

- Invasive species control
- Erosion
- Insufficient supplemental irrigation
- Stress or mortality of planted natives

A memo noting conditions and any recommendations on site maintenance will be submitted to the Menlo Country Club and Landscape Contractor after each site visit by the Project Restorationist.

8.2 Quantitative Monitoring

Quantitative data relative to the performance standards detailed in Table 6 will be collected in the wetland and riparian restoration areas each year during the five-year monitoring period. An annual report will be submitted to the USACE, RWQCB and CDFW by December 31 each year.

Monitoring methods are described below. A schedule of monitoring activities is provided in Table 7. Figures 3A and 3B illustrate the approximate location of vegetation transects and plots that will be used to monitor performance.

Performance Standard 1. Wetland Vegetative Cover
Vegetative cover and species composition shall be monitored along six transects within the restoration area. One-m^2 quadrats shall be sampled along each transect at fixed locations marked by rebar to measure absolute vegetative cover and species composition. Three quadrats will be sampled in the wetland restoration area for each transect with one quadrat on each side of the creek and a single quadrat in the Redwood Creek low-flow channel.

Absolute vegetative cover and species composition will be measured in all plots. Cover will be estimated by cover class (<5%, 5-15%, 16-25%, 26-50%, 51-75%, 76-100%) for each species. Mean vegetative cover of sampled wetland plots will be calculated and reported in the annual monitoring report. Quantitative data collection will be conducted in the late spring/early summer

when plants can be identified to species. Monitoring and reporting will be conducted annually for five years following construction.

Performance Standard 2. Wetland Habitat

A formal wetland delineation in accordance with current USACE guidelines and manuals will be performed in the wetland restoration areas during the summer of the fifth year of monitoring. The delineation will be submitted to the USACE, RWQCB and CDFW with the Year 5 annual report. Because hydric soils may not develop within the five-year monitoring period, the presence of hydrophytic vegetation and wetland hydrology may be used to determine whether this performance standard has been met.

Performance Standard 3. Riparian Vegetative Cover

Vegetative cover and species composition shall be monitored along six transects within the restoration area. One-m^2 quadrats shall be sampled along each transect at fixed locations marked by rebar to measure absolute vegetative cover and species composition. Four quadrats will be sampled in the riparian restoration area for each transect with two quadrats each on both sides of the creek for each transect.

Absolute vegetative cover and species composition will be measured in all plots. Cover will be estimated by cover class (<5%, 5-15%, 16-25%, 26-50%, 51-75%, 76-100%) for each species. Mean vegetative cover of sampled riparian plots will be calculated and reported in the annual monitoring report. Quantitative data collection will be conducted in the late spring/early summer when plants can be identified to species. Monitoring and reporting will be conducted annually for five years following construction.

Performance Standard 4. Survival and Vigor

The survival and vigor of all planted willows, Pacific ninebark and California blackberry will be measured annually. Due to the spreading nature of California blackberry which makes it difficult to distinguish individual plants, survivorship and vigor may be based on an estimate rather than a full plant count and vigor assessment. Planted areas lacking visible California blackberry growth will be noted, with appropriate recommendations for remedial action noted as needed.

All plants that were installed will be counted and percent survival shall be determined for each species. Plant health and vigor will be assigned into one of the four categories below:

3 (Thriving) – The plant looks healthy, showing no obvious signs of stress; new growth is apparent.

2 (Good) – The plant shows little or no signs of damage or necrosis; plant shows some signs of stress.

1 (Poor) – The plant shows signs of damage or necrosis; plant appears to be water stressed; little or no evidence of growth in current season.

0 (Dead) – The plant shows no signs of life; no living buds, plant is not seasonally senescent.

Performance Standard 5. Invasive Non-native Plants

The cover of non-native invasive plants with a CalIPC ranking of High or Moderate will be measured annually during the five-year monitoring period as described above under Performance Standard 1 and 3. A qualitative visual assessment of the presence of invasive non-native plants will also be performed annually, with recommendations on control measures noted in monitoring memos and the annual monitoring report.

Performance Standard 6. Slope Stability

The stability of the repaired slopes will be qualitatively assessed annually during site monitoring. Any signs of slumping, instability, undercutting or excessive incision or erosion will be discussed with the Menlo Country Club. Recommendations on any remedial actions would be developed by in collaboration with the Project Engineer.

Performance Standard 7. Maintenance Measures

The ability of planted and seeded natives to flourish within the restoration areas absent significant maintenance will be assessed annually. Self-sustaining wetland and riparian vegetation would not require supplemental irrigation, significant invasive non-native species removal or other management activities to ensure the attainment of the performance standards specified in this HRP by Year 5. A summary of maintenance activities performed by the Landscape Contractor will be reported and assessed to determine whether the restoration areas are self-sustaining without significant maintenance at the end of the five-year monitoring period.

Photo Documentation

A minimum of twelve photo points (two per transect) will be established at the top of bank with the use of a hand-held GPS instrument prior to the start of earthwork. Photos will be taken of the restoration area before earthwork begins and annually during monitoring. Photos will duplicate the view of prior years and will be taken at the same season. Photographs will be included in annual reports.

Table 7. Monitoring Schedule

Task	Schedule
Qualitative Monitoring: Visual assessments of restoration area; prepare recommendations on needed maintenance	Spring and Summer, Years 1-5
Quantitative Monitoring: Vegetation surveys for plant cover, species composition, invasive plants, survival and vigor, maintenance needs, slope stability	Late spring/early summer, Years 1-5
Photo documentation	Prior to construction, and during quantitative monitoring, late spring/early summer, Years 1-5
Wetland Delineation	Year 5, late spring/early summer
Reporting	Years 1-5, with reports submitted to USACE, RWQCB and CDFW by December 31.

9.0 SITE PROTECTION AND LONG-TERM MANAGEMENT

The restoration areas are located within the Menlo Country Club which has been in operation since 1911. The property is zoned ORM (Open Space for Medium Intensity Outdoor Recreation). Land uses incompatible with the protection of the wetland and riparian restoration areas are not planned.

The Menlo Country Club will be responsible for long-term management of the restoration areas, which will be conducted as a part of routine maintenance of the Country Club property.

10.0 RESPONSIBLE PARTIES

Overall responsibility for implementation of the HRP resides with the Menlo Country Club. Roles and responsibilities of parties selected by the Club to implement the HRP are described in Table 8.

Minimum qualifications for the Landscape Contractor and Project Restorationist include the following:

Landscape Contractor: Demonstrate experience and success with wetland and riparian habitat restoration projects in the San Francisco Bay Area. The Landscape Contractor must have experience with collection of willow pole cuttings, native plant planting and seeding, invasive plant control, and establishment maintenance. Staff certifications for Agricultural Pest Control Advisor and Applicator are required.

Project Restorationist: Demonstrate experience with and a depth of knowledge about wetland and riparian habitat restoration in the San Francisco Area. The Project Restorationist must be knowledgeable about the habitats and plant species in the restoration area and possess the capabilities and experience to perform all of the tasks assigned to this role described in the HRP.

Table 8. Roles, Responsibilities and Schedule for Habitat Restoration Plan Tasks

Task	Responsible Party	Schedule
Earthwork, grading, bank repair, install rock slope protection, scarify soils to prepare for planting and seeding	Construction Contractor	Summer 2020
Order container stock, seed mixes	Landscape Contractor or Menlo Country Club	Winter or early spring 2020
Identify locations for collection of willow pole cuttings in San Mateo County	Landscape Contractor	Fall 2020

Task	Responsible Party	Schedule
Install container plants followed by application of seed mixes	Landscape Contractor	Fall 2020
Inspect and document completion of container plantings and seeding	Project Restorationist	Fall 2020
Collect and plant willow pole cuttings	Landscape Contractor	December 2020
Inspect and document installation of willow pole cuttings, and start of 5-year restoration maintenance and monitoring period	Project Restorationist	Fall 2020
Submit as-built report to USACE, RWQCB, CDFW	Project Restorationist	December 2020
Conduct 5 years restoration area maintenance	Landscape Contractor	Year 1 (2021) through Year 5 (2025)
Restoration area monitoring and reporting during years 1-5	Project Restorationist	Year 1 (2021) through Year 5 (2025)
Wetland delineation	Project Restorationist	Summer, Year 5 (2025)
Site inspection with agencies for consistency of restoration area with performance standards and acceptance of wetland mitigation to fulfill permit requirements	Project Restorationist	2026
Long-term management	Menlo Country Club	Ongoing

11.0 REFERENCES

Coast Range Biological. 2018. Aquatic Resource Delineation Report, Menlo Country Club, Woodside, San Mateo County, California. July.

Mosaic Associates. 2019. Biological Resources Report for the Menlo Country Club Bank Stabilization Project, Woodside, San Mateo County, CA. June.

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

ALAMEDA
COLUSA
CONTRA COSTA
DEL NORTE
HUMBOLDT
LAKE
MARIN
MENDOCINO
MONTEREY
NAPA
SAN BENITO
SAN FRANCISCO
SAN MATEO
SANTA CLATA
SANTA CRUZ
SOLANO
SONOMA
YOLO

Northwest Information Center
Sonoma State University
150 Professional Center Drive, Suite E
Rohnert Park, California 94928-3609
Tel: 707.588.8455
nwic@sonoma.edu
http://www.sonoma.edu/nwic

July 19, 2019

NWIC File No.: 18-2497

Joseph Balatbat
Town of Woodside
P.O. Box 620005
2955 Woodside Road
Woodside, CA 94062

Re: Record search results for the proposed 2300 Woodside Road Project, CUSE2019-0002/CEQA2019-0003

Dear Joseph Balatbat:

Per your request received by our office on June 28, 2019, a records search was conducted for the above referenced project by reviewing pertinent Northwest Information Center (NWIC) base maps that reference cultural resources records and reports, historic-period maps, and literature for San Mateo County. Please note that use of the term cultural resources includes both archaeological resources and historical buildings and/or structures.

Review of this information indicates that there has been no cultural resource studies that cover the proposed 2300 Woodside Road project area. The proposed project area contains no recorded archaeological resources. The State Office of Historic Preservation Historic Property Directory (OHP HPD) (which includes listings of the California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and the National Register of Historic Places) includes no recorded buildings or structures within or adjacent to the proposed project area. In addition to these inventories, the NWIC base maps show no recorded buildings or structures within the proposed project area.

At the time of Euroamerican contact the Native Americans that lived in the area were speakers of the Ramaytush language, part of the Costanoan language family (Levy 1978:485). There is one Native American tribal territory in the general vicinity of the proposed project area referenced in the ethnographic literature [the area of the Lamchin (Milliken 1995: 246-7)]; however, no villages or other resources are specifically called out.

Based on an evaluation of the environmental setting and features associated with

known sites, Native American resources in this part of San Mateo County have been found in areas marginal to the San Francisco Bay and inland near intermittent and perennial watercourses. The proposed project area is located in a hilly interior valley, and includes Redwood Creek. Given the similarity of these environmental factors and the ethnographic sensitivity of the area, there is a moderate to high potential for unrecorded Native American resources in the proposed project area.

Although the general vicinity of the proposed project are underwent significant development during the historic-era, review of historical literature and maps gave no indication of the possibility of historic-period activity within the proposed project area. With this in mind, there is a low potential for unrecorded historic-period archaeological resources in the proposed project area.

The 1953 and 1961 Palo Alto USGS 7.5-minute topographic quadrangles fail to depict any buildings or structures within the proposed project area; therefore, there is a low possibility of identifying any buildings or structures 45 years or older within the project area.

RECOMMENDATIONS:

1) There is a moderate to high potential of identifying Native American archaeological resources and a low potential of identifying historic-period archaeological resources in the proposed project area. We recommend a qualified archaeologist conduct further archival and field study to identify cultural resources. Field study may include, but is not limited to, pedestrian survey, hand auger sampling, shovel test units, or geoarchaeological analyses as well as other common methods used to identify the presence of archaeological resources. Please refer to the list of consultants who meet the Secretary of Interior's Standards at http://www.chrisinfo.org.

2) We recommend the lead agency contact the local Native American tribe(s) regarding traditional, cultural, and religious heritage values. For a complete listing of tribes in the vicinity of the project, please contact the Native American Heritage Commission at 916/373-3710.

3) If the proposed project area contains buildings or structures that meet the minimum age requirement, prior to commencement of project activities, it is recommended that this resource be assessed by a professional familiar with the architecture and history of San Mateo County. Please refer to the list of consultants who meet the Secretary of Interior's Standards at http://www.chrisinfo.org.

4) Review for possible historic-period buildings or structures has included only those sources listed in the attached bibliography and should not be considered comprehensive.

5) If archaeological resources are encountered **during construction,** work should be temporarily halted in the vicinity of the discovered materials and workers should avoid altering the materials and their context until a qualified professional archaeologist has evaluated the situation and provided appropriate recommendations. Project personnel should not collect cultural resources. Native American resources include chert or obsidian flakes, projectile points, mortars, and pestles; and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic-period resources include stone or adobe foundations or walls; structures and remains with square nails; and refuse deposits or bottle dumps, often located in old wells or privies.

6) It is recommended that any identified cultural resources be recorded on DPR 523 historic resource recordation forms, available online from the Office of Historic Preservation's website: http://ohp.parks.ca.gov/default.asp?page_id=1069

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the California Historical Resources Information System (CHRIS) Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

Thank you for using our services. Please contact this office if you have any questions, (707) 588-8455.

Sincerely,

Bryan Much
Coordinator

LITERATURE REVIEWED

In addition to archaeological maps and site records on file at the Northwest Information Center of the Historical Resources Information System, the following literature was reviewed:

Barrows, Henry D., and Luther A. Ingersoll
2005 *Memorial and Biographical History of the Coast Counties of Central California.* Three Rocks Research, Santa Cruz (Digital Reproduction of The Lewis Publishing Company, Chicago: 1893.)

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1951 *Adobe Houses in the San Francisco Bay Region.* In Geologic Guidebook of the San Francisco Bay Counties, Bulletin 154. California Division of Mines, Ferry Building, San Francisco, CA.

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1982 *Geologic, Scenic, and Historic Points of Interest in San Mateo County, California.* Miscellaneous Investigations Series, Map I-1257-B, 1:62,500. Department of the Interior, United States Geological Survey, Washington, D.C.

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1974 *Local History Studies*, Vol. 18., "The Costanoan Indians." California History Center, DeAnza College, Cupertino, CA.

Helley, E.J., K.R. Lajoie, W.E. Spangle, and M.L. Blair
1979 *Flatland Deposits of the San Francisco Bay Region - Their Geology and Engineering Properties, and Their Importance to Comprehensive Planning.* Geological Survey Professional Paper 943. United States Geological Survey and Department of Housing and Urban Development.

Hoover, Mildred Brooke, Hero Eugene Rensch, and Ethel Rensch, revised by William N. Abeloe
1966 *Historic Spots in California.* Third Edition. Stanford University Press, Stanford, CA.

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Kroeber, A.L.
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Levy, Richard
1978 Costanoan. In *California*, edited by Robert F. Heizer, pp. 485-495. Handbook of North American Indians, vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Milliken, Randall
1995 *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area 1769-1810.* Ballena Press Anthropological Papers No. 43, Menlo Park, CA.

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1909 *Shellmounds of the San Francisco Bay Region.* University of California Publications in American Archaeology and Ethnology 7(4):309-356. Berkeley. (Reprint by Kraus Reprint Corporation, New York, 1964)

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1988 *Discover Historic California.* Gem Guides Book Co., Pico Rivera, CA.

San Mateo County Historic Resources Advisory Board
1984 San Mateo County: Its History and Heritage. Second Edition. Division of Planning and Development Department of Environmental Management.

San Mateo County Planning and Development Department
n.d. "Historical and Archaeological Resources, Section 5" from the *San Mateo CountyGeneral Plan.*

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1976 *California Inventory of Historic Resources.* State of California Department of Parks and Recreation, Sacramento.

State of California Department of Parks and Recreation and Office of Historic Preservation
1988 *Five Views: An Ethnic Sites Survey for California.* State of California Department of Parks and Recreation and Office of Historic Preservation, Sacramento.

State of California Office of Historic Preservation **
2012 *Historic Properties Directory.* Listing by City (through April 2012). State of California Office of Historic Preservation, Sacramento.

Williams, James C.
1997 *Energy and the Making of Modern California.* The University of Akron Press, Akron, OH.

**Note that the Office of Historic Preservation's *Historic Properties Directory* includes National Register, State Registered Landmarks, California Points of Historical Interest, and the California Register of Historical Resources as well as Certified Local Government surveys that have undergone Section 106 review.

ROMIG ENGINEERS

June 5, 2019
1841-2

Menlo Country Club
2300 Woodside Road
Woodside, California 94062

RE: GEOTECHNICAL RECOMMENDATIONS
CREEK BANK RESTORATION
MENLO COUNTRY CLUB
2300 WOODSIDE ROAD
WOODSIDE, CALIFORNIA

Attention: Mr. Chris Robinson, General Manager

Gentlemen:

As requested, we are presenting geotechnical recommendations for the Redwood Creek bank restoration along the golf course at the Menlo Country Club located at 2300 Woodside Road in Woodside, California. As you know, we performed a geotechnical investigation for the previous golf course improvements and presented the results in our report dated December 2011. The scope of our geotechnical services for this project was presented in our agreement with you dated January 4, 2011.

PROJECT DESCRIPTION

The project consists of repairing the Redwood Creek banks at two locations along the drainage corridor which meanders through the middle of the golf course at the Menlo Country Club in Woodside. We observed the existing conditions of the drainage corridor during a site meeting on March 20, 2019. The first restoration area consists of an approximately 120 foot length of bank located near the south portion of the golf course near the 3rd hole and the second consists of an approximately 150 foot length of bank located near the northeast portion of the golf course near the 16th hole. At these areas, erosion had occurred and the banks slumped and failed into the drainage at several locations which created over steepened banks which extended near close proximity to the golf course greens. The restoration plans prepared by Clifford Bechtel and Associates, dated May 15, 2019 show that the creek will be restored by rebuilding the banks with a properly keyed, benched, and compacted structural fill placed at inclinations generally ranging between about 1:1 to 4:1 (horizontal:vertical) in order to match the existing banks beyond the repair areas. The drainage will be dammed and water pumped around the repair areas in order to facilitate the grading work. The existing channel was generally incised about 10 feet below the surrounding golf course grades and flowing with several feet of water at the time of our March visit.

CONCLUSIONS AND RECOMMENDATIONS

From a geotechnical viewpoint, the site is suitable for the proposed Redwood Creek bank restoration provided the recommendations presented in this letter are followed during design and construction. Specific recommendations for the project are presented in the following sections of this report.

The primary geotechnical concerns regarding the creek bank restoration are the presence of the over steepened banks, the wet and soft slump debris which may have accumulated along the middle to lower portion of channel, the presence of the actively flowing water within the drainage, and the steeply sloping nature of the existing banks. The over steepened banks which have slumped are unstable and these may migrate further into the golf course greens if not repaired.

In our opinion, the creek bank restoration should consist of excavating all the slumped debris and underlying affected soil, and keying and benching a properly compacted structural fill into competent stiff native soil. The actual extent and depth of the repair may need to be adjusted somewhat by our staff depending upon the depth and extent of loose or relatively soft/moist soil identified during grading. The earthwork for the proposed repair should also follow the general criteria presented in following sections of this letter and be observed and tested by our staff. At a minimum, the finished creek banks and soil surfaces disturbed during construction should be planted with erosion-resistant vegetation or other erosion resistant methods as discussed below.

Another geotechnical concern for the proposed creek restoration is the steep inclination of the proposed structural fill slopes shown on the restoration plans. It is generally recommended that finished slopes be cut or filled to an inclination no steeper than 2:1 (horizontal:vertical). However, due to the steeply sloping nature of the existing creek banks, we understand that typical shallower restored bank inclinations may not be feasible. You should realize however, that continuing erosion and slumping of these steeper creek banks is possible and perhaps even likely to occur in the future. If this is not acceptable, the proposed steep repair areas, where finished banks are planned to be about 1.5:1 (horizontal:vertical) or steeper, could be constructed with geogrid reinforcement.

Depending on when the grading work occurs, some of the existing landslide debris may be too wet or soft to compact effectively without first being dried out or potentially treated prior to compaction. In addition, wet and potentially unstable subgrade conditions may be encountered at the base keyway along the bottom of the channel and upper benches which may require scarification and aeration and installation of a stabilization fabric. Further discussion concerning handling unstable soil material and poor subgrade conditions are presented below.

Due to the actively flowing creek, shallow ground water conditions will likely exist at the time of the grading work. Therefore, construction dewatering may be required depending on the final depth of the base keyway excavations, the ground water level, and level of water in the creek channel at the time of grading work.

CREEK BANK RESTORATION

In our opinion, with the limitations discussed above, the slumped creek bank debris may be removed and the banks rebuilt to an inclination matching grades on either side of the restoration areas (or to the desired finished landscape grades) to provide a structural fill slope. A generalized cross section through the creek bank repair is shown in Figure 1.

The repair should begin with a base keyway excavated at the base of the bank along the creek bottom. The key should have a width of at least 15 feet and extend at least 3 feet into stiff native soil below the bottom of the channel at the downslope edge of the keyway. The benches should be inclined into the back of the benches at an inclination of at least 1.5 percent. The structural fill should be moisture conditioned, and compacted as recommended in the section of this letter titled "Compaction."

To improve the long term performance of the creek banks, we recommend that at least 2 to 3 layers of geogrids be incorporated into the lower portion of the structural fill for the repaired banks. The geogrid should consist of Mirafi 3XT geogrid or equivalent. The bottom layer of geogrid should be placed within about 1 foot from the toe of banks slope. The spacing between the bottom and middle layers of geogrid should be a maximum of 3 feet. The geogrids should extend at least 10 to 15 feet from the face of the new slope. The back of the temporary excavation will need to have an average inclination of 1:1 (horizontal: vertical) or flatter to allow installation of the geogrid layers. A series of benches should be cut into the back of the temporary cut slope during placement and compaction of the geogrid-reinforced structural fill.

Exposed slopes may be subject to sloughing and erosion particularly below the creek water surface, which could require periodic maintenance. We recommend that the finished creek bank restoration and soil surfaces disturbed during construction be planted with erosion-resistant vegetation. Consideration could be given to installing a more robust and durable erosion control system such as the rolled or hydraulic erosion control products (HydroMax System) or turf reinforcement mats (RollMax System) available from North American Green which are designed for flowing channels, shorelines, and other areas which need permanent erosion protection from water and wind.

Subgrade/Fill Stabilization

Wet and potentially unstable soils to be used as fill and soil subgrade at the keyway and benches may be encountered during debris removal along the bottom of the channel and during fill compaction within the repair area. Depending on the quantity of ground water present within the slope at the time of grading, stabilization of wet and/or unstable soils may be required in some areas by means of aerating the wet soil, mixing in non-expansive import soil, lime-treatment, or other suitable methods.

If the excavation keyway subgrade is too wet or soft to compact effectively, the exposed subgrade could be aerated and compacted to at least 90 percent. If an adequately firm base cannot be established by aeration, an approved stabilization fabric, such as TC Mirafi 500X could be placed on the subgrade with 12 to 18 inches of structural fill placed above the stabilization fabric and compacted in lifts to the degree possible to create a stable subgrade. The remaining structural fill should then be compacted as recommended in the "Compaction" section below.

For a lime-treatment option, where the stockpiled fill materials are overly wet and/or too soft to compact as a structural fill, the soil moisture may be sufficiently reduced and strength

increased to continue earthwork operations by mixing the soil with an additive, such as quicklime (CaO), kiln-dust, or cement. The lime-treated soil should be placed as at the base of the structural repair section, or as low as possible below grade and away from the face of the creek bank. Lime treatment should be avoided in landscape areas such as the upper 2 to 3 feet of the repair section. All vegetation and organically-contaminated fill should be removed from the soil to be lime-treated. The implementation of lime treatment or mixing with lime should be reviewed so that a cost effective approach and set of recommendations can be developed and used for the specific conditions at the time of grading. A member of our staff should also observe and test during site preparation, lime treatment, and compaction of the treated fill.

EARTHWORK

Clearing and Subgrade Preparation

All deleterious materials, such as vegetation, topsoil, loose soft or overly moist surface soils, slabs, pavements tennis courts, existing fills, and designated utility lines, etc., should be cleared from areas of the site to be built on or paved. Excavations that extend below finish grade should be backfilled with structural fill placed and compacted as recommended below.

After the site has been properly cleared, stripped, and excavated to the required grades, exposed soil surfaces in areas to receive structural fill or slabs-on-grade should be scarified to a depth of 6 inches, moisture conditioned, and compacted as recommended for structural fill in the section of this report titled "Compaction." On-site soils should be kept in a moist condition throughout the construction period.

Material For Fill

All on-site soil containing less than 3 percent organic material by weight (ASTM D2974) may be suitable for use as structural fill. Structural fill should not contain rocks or pieces larger than 6 inches in greatest dimension and no more than 15 percent larger than 2.5 inches. Imported, non-expansive fill should have a Plasticity Index no greater than 15, should be predominately granular, and should have sufficient binder so as not to slough or cave into foundation excavations or utility trenches. A member of our staff should approve proposed import materials prior to their delivery to the site.

Temporary Slopes, Excavations and Dewatering

The contractor should be responsible for the design and construction of all temporary slopes, any required shoring, and protection of the residence during the repair. Shoring and bracing should be provided in accordance with all applicable local, state, and federal safety regulations, including current OSHA excavation and trench safety standards.

Temporary slopes less than 4 feet deep excavated in the native soils should be capable of standing near-vertical for short construction periods with minimal bracing. Field modification of temporary cut slopes may be required. Unstable materials encountered on slopes during excavation should be trimmed off even if this requires cutting the slopes back to a flatter inclination.

As discussed earlier, shallow ground water could be encountered during grading. Therefore, construction dewatering may be required depending on the depth of excavations and the ground water level at the time of excavation. Temporary dewatering during grading should be the responsibility of the contractor. Preferably, dewatering should be carried out in such a manner as to maintain the ground water several feet below the bottom of excavations to allow for proper compaction of the excavation subgrade and structural fill. The contractor should design a system to achieve this. Depending upon the depth and dimensions of the excavations, dewatering may be able to be accomplished from pumping from sumps.

Compaction

Scarified soil surfaces and all structural fill should be compacted in uniform lifts no thicker than 8-inches in uncompacted thickness, conditioned to the appropriate moisture content, and compacted as recommended for structural fill in Table 1 below. The relative compaction and moisture content recommended in Table 1 is relative to ASTM Test D1557, latest edition.

Table 1. Compaction Recommendations

	Relative Compaction*	Moisture Content*
General		
• Scarified subgrade in areas to receive structural fill.	88-92 percent	At least 3 percent above optimum
• Structural fill composed of native soil.	88-92 percent	At least 3 percent above optimum
• Structural fill composed of non-expansive fill.	90 percent	Above optimum
• Fills below a depth of 4 feet.	92 percent	About 2 percent above optimum
Utility Trench Backfill		
• On-site soil.	88-92 percent	At least 3 percent above optimum
• Imported sand	95 percent	Near optimum

* Relative to ASTM Test D1557, latest edition.

Surface Drainage

In general, finished grades should be designed to prevent ponding and to drain surface water away from edges of slopes, slabs and pavements, and toward suitable collection and discharge facilities. Slopes of at least 2 percent are recommended. Ponding of water should not be allowed adjacent to the site improvements. The finished grade adjacent to the slopes should also be graded to drain water away from the top of the slopes. Concentrated runoff should not be allowed to flow onto the slopes.

The drainage facilities should be observed to verify that they are adequate and that no adjustments need to be made, especially during first two years following construction. We recommend that an as-built plan showing the location of the surface and subsurface drain lines and clean outs be developed. The drainage facilities should be periodically checked to verify that they are continuing to function properly, and likely will need to be periodically cleaned of silt and debris which may build up in the lines.

Follow-Up Geotechnical Services

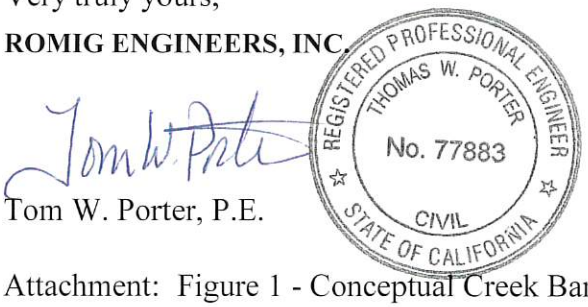
To confirm that our recommendations are properly understood and implemented, we recommend that we be retained to 1) review the grading plans for conformance with our recommendations and 2) observe and test during earthwork construction.

We make no warranty, expressed or implied, except that our services are performed in accordance with geotechnical engineering principles generally accepted at this time and location.

If you have any questions or comments about our findings, please call.

Very truly yours,

ROMIG ENGINEERS, INC.

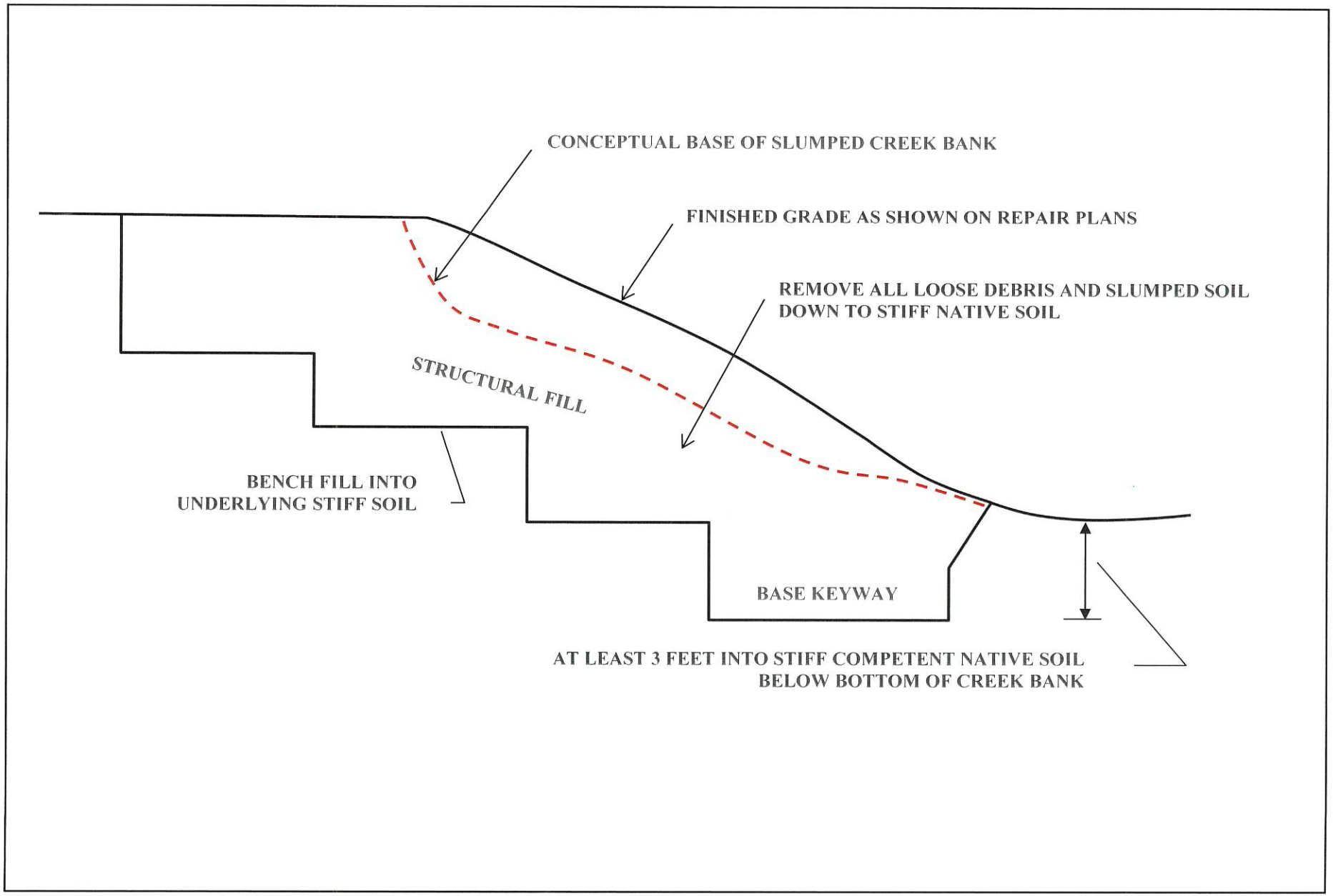


Tom W. Porter, P.E.

Attachment: Figure 1 - Conceptual Creek Bank Restoration and Benching Detail

Copies: Addressee (1)
Clifford Bechtel and Associates (2)
Attn: Mr. Cliff Bechtel

GAR:TWP:pf



CONCEPTUAL CREEK BANK RESTORATION AND BENCHING DETAIL
MENLO COUNTRY CLUB
WOODSIDE, CALIFORNIA

FIGURE 1
JUNE 2019
PROJECT NO. 1841-2

ROMIG ENGINEERS

July 26, 2019
W5473G

TO: Sage Schaan
Principal Planner
TOWN OF WOODSIDE
2955 Woodside Road
Woodside, California 94062

SUBJECT: **Geotechnical Peer Review**
RE: Menlo Country Club – Creek Bank Erosion Mitigation
CUSE2019-0002, CEQA2019-0003
2300 Woodside Road

At your request, we have completed a geotechnical peer review of the proposed creek restoration plan using:

- Geotechnical Recommendations (letter) prepared by Romig Engineers, Inc., dated June 5, 2019;
- Wetland and Riparian Habitat restoration Plan (report) prepared by Mosaic Associates, Inc., dated June, 2019; and
- Civil Plans (11 sheets) prepared by Clifford Bechtel and Associates, dated May 15, 2019.

In addition, we have reviewed pertinent technical documents from our office files and completed a site reconnaissance.

DISCUSSION

The applicant proposes to construct a grading repair along portions of Redwood Creek in the vicinity of Hole 3 and also Hole 16 of the property's gold course. The toe of the grading repair will be partially armored with 54 cubic yards of rip-rap approximately 2 feet in diameter. During project construction, water will be dammed and pumped through the impacted portions of Redwood Creek. Excavation of loose or soft debris from the creek bank will extend below the creek bed and temporary excavations are recommended to consist of cuts and benches and 1H:1V slopes to allow for installation of geogrid fabric.

SITE CONDITIONS

The vicinity of the proposed creek restoration is generally characterized by moderately gentle to moderately steep valley floor slopes modified for the golf course. Along Redwood Creek, slopes are very steep to precipitous and appear to be actively sloughing into the creek channel. The Consultant notes that these failures may migrate further towards the golf course if not mitigated. The creek channel appears to be overlain with soft, slumped debris in the vicinity of the proposed restorations, this debris likely overlays mapped bedrock of the Whiskey Hill Formation. We understand that the subject site is not located within a mapped 100-yr floodplain.

CONCLUSIONS AND RECOMMENDED ACTION

The proposed site improvements are constrained by potentially expansive and soft surficial soils, potential undocumented fill materials, potential shallow ground water conditions, precipitous creek banks, continued erosion along Redwood Creek, in addition to very strong seismic ground shaking. The referenced 2019 geotechnical recommendations indicate that the proposed repair concept is susceptible to continued erosion and slumping due to the nature of the creek and the proposed final grades for site engineered fill slopes. They note that, typically, structural fill slopes are finished no steeper than 2H:1V. It appears that finished slopes for the proposed creek restorations will be constructed at grades of up to 1H:1V. We concur with the findings of the Geotechnical Consultant and recommend the project design team and Civil Engineer consider modifying plans and the creek alignments to allow for more gentle slopes. If more gentle final slopes are not utilized then increased maintenance of bank mitigation areas should be anticipated.

To mitigate the potential for wet or saturated, unsuitable soils for structural fill, the Consultant recommends on-site treatment including prolonged drying/aeration or the addition of lime. If lime treatment is found to be undesirable, we recommend considering importing of appropriate fill materials (as deemed necessary by the Project Geotechnical Consultant). Given the proposed final gradient of restored slopes, the Consultant recommends incorporating geogrid fabric into project construction to mitigate the potential for instability of over-steepened structural fill slopes. We conclude that the Geotechnical Consultant has provided recommendations for the proposed creek restoration in the vicinity of the golf course that are generally consistent with the prevailing standard of practice. We understand that the repaired slopes will be qualitatively assessed annually, and remediated as necessary. We recommend geotechnical approval of subject permit applications with the following conditions attached:

1. **Geotechnical Plan Review** - The applicant's geotechnical consultant should review and approve all geotechnical aspects of the final grading and building plans (i.e., site preparation and grading, site drainage improvements and design parameters for structural fill slopes including keys and benches and the installation of geogrid fabric and rip rap) to ensure that their recommendations have been properly incorporated. We recommend the project design team consider modifying the proposed creek alignment to allow for more moderate final fill slope grades.

   A Geotechnical Plan Review (letter) should be submitted to the Town, for review by the Town Staff, prior to issuance of building permits.

2. **Geotechnical Construction Inspections** - The geotechnical consultant should inspect, test and approve all geotechnical aspects of the project construction. The inspections should include, but not necessarily be limited to: site preparation and grading, site drainage improvements, and observations of excavations prior to placement of geogrid, structural fill, and ultimately rip rap.

   The results of these inspections and the as-built conditions of the project should be described by the geotechnical consultant in a letter and submitted to the Town Engineer for review prior to final (as-built) project approval.

LIMITATIONS

This geotechnical peer review has been performed to provide technical advice to assist the Town with its discretionary permit decisions. Our services have been limited to review of the documents previously identified, and a visual review of the property. Our opinions and conclusions are made in accordance with generally accepted principles and practices of the geotechnical profession. This warranty is in lieu of all other warranties, either expressed or implied.

Respectfully submitted,

COTTON, SHIRES AND ASSOCIATES, INC.
TOWN GEOTECHNICAL CONSULTANT

Ted Sayre
Engineering Geologist
CEG 1795

David T. Schrier
Principal Geotechnical Engineer
GE 2334

DTS:CS:TS

HYDRAULIC ANALYSIS
CREEK BANK RESTORATION
AT THE MENLO COUNTRY CLUB
2300 WOODSIDE ROAD
WOODSIDE, CALIFORNIA

JULY 29, 2019

BY: CLIFFORD BECHTEL AND ASSOCIATES, INC.
901 WALTERMIRE STREET
BELMONT, CA 94002
650-333-0103
Cliffbechtel1@comcast.net

JOB#2018643

ATTACHMENT 7

In accordance with the Town of Woodside drainage requirements, as discussed with the Town Engineer, the following report has been prepared to satisfy the requirements of drainage documentation and analysis for the restoration of the existing creek banks, along Redwood Creek, within the Menlo County Club's golf course limits, at 2300 Woodside Road, Woodside, California.

Existing Drainage Condition

The existing golf course has a portion of Redwood Creek passing through the southside of the property, approximately parallel to Woodside Road. The Creek meanders through the property and takes many turns and bends. The existing creek banks are very steep and are covered with vegetation or shaded by the many oaks that line the creek.

During the recent heavy winter, two portions of the creek bank have failed and continue to get larger, with every passing winter.

Drainage Issue

The existing Creek Banks continue to fail (i.e. creek outward) and result in significant sediment flow downstream, as well as clog up existing portions of the creek. Which could lead to future failures of the creek bank.

Proposed Improvements and Hydraulic Review

The conceptual project would consist of adjusting the creek alignment in the two failed locations, widening the creek bottom, flatten slightly the creek banks, stabilizing the creek bank with some geotextile fabric, and restoring the creek banks with native vegetation.

The proposed alignment adjustments will create a straighter flow path of the creek, in these two areas, which will reduce the energy of the flow and reduce the probability of scour along the banks.

In addition to the minor alignment adjustment, the creek bottom will be increase from 5-feet to approximately 10-foot wide. This widening will also reduce the energy of the flow within the creek and reduce the probability of scouring along the banks.

Generally hydraulic calculations for the estimate mean high water level has determined the flow capacity of the channel, within the repair region, will be increased by 121 cfs, at hole #3, and 160 cfs, at hole #16 (See Calculations in Appendix A).

The channel improvements are to be enhanced by a restoration revegetation program, which is consistent with requirements of the local environmental agencies. These enhancements will also increase the stability of the creek banks (i.e. slope protection). Plants and ground cover selected will be subject to the outside agency permitting but should provide the necessary protections and stability of the soil surfaces within the creek banks.

Conclusion:

The proposed improvements will create in a slightly wider and straighter section of creek, which will result in increase flow capacity and lower hydraulic energy for the region. The resulting lower hydraulic energy will reduce channel scour and turbidity.

In addition to the improved hydraulics, the channel planting enhancements will create a more stable creek bank and improve the environmental habitat of the creek corridor, within the repair zone.

APPENDIX A

REDWOOD CREEK HYDRAULIC REVIEW

FOR CHANNEL FLOW REVIEW, WE HAVE USED SECTION B-B, SHEET C-1.0, HOLE #3 AND SECTION E-E, SHEET C-1.1, HOLE #16

ASSUME MEAN HIGH FLOW IS 3' ABOVE (E) CHANNEL BOTTOM,

HOLE # 3

SEE FIGURE 1

EXISTING: $A = 34.54$ SF $\quad n = 0.035$
$WP = 19.8$ FT
$S = 0.0075$
$R_h = 1.74$

$$Q_{EXISTING} = 1.49(34.54)(1.74)^{0.66}(0.0075)^{0.5}/0.035$$
$$= 183.54 \text{ cfs}$$

PROPOSED: $A = 52.92$ SF $\quad n = 0.035$
$WP = 27$ FT
$S = 0.0075$
$R_h = 1.96$

$$Q_{PROPOSED} = 1.49(52.92)(1.96)^{0.66}(0.0075)^{0.5}/0.035$$
$$= 304.20 \text{ cfs}$$

INCREASE FLOW CAPACITY OF 121 CFS WHICH WILL RESULT IN DECREASED ENERGY

CLIFFORD BECHTEL AND ASSOCIATES
Project Management & Engineering

Project: Meula Creek Restoration
Project No. 2018643
By: CB Date: 7/29/19
Chkd By: _____ Date _____
Sheet No. 2 of 2

HOLE #16

SEE FIGURE 2

EXISTING: $A = 68.43$ SF $\quad n = 0.035$

$WP = 27.5$ FT

$S = 0.063$

$R_H = 2.49$

$Q_{EXISTING} = 1.49(68.43)(2.49)^{0.66}(0.063)^{0.5}/0.035$

$= 1335$ cfs

PROPOSED: $A = 97.77$ SF $\quad n = 0.035$

$WP = 29.9$ FT

$S = 0.027$

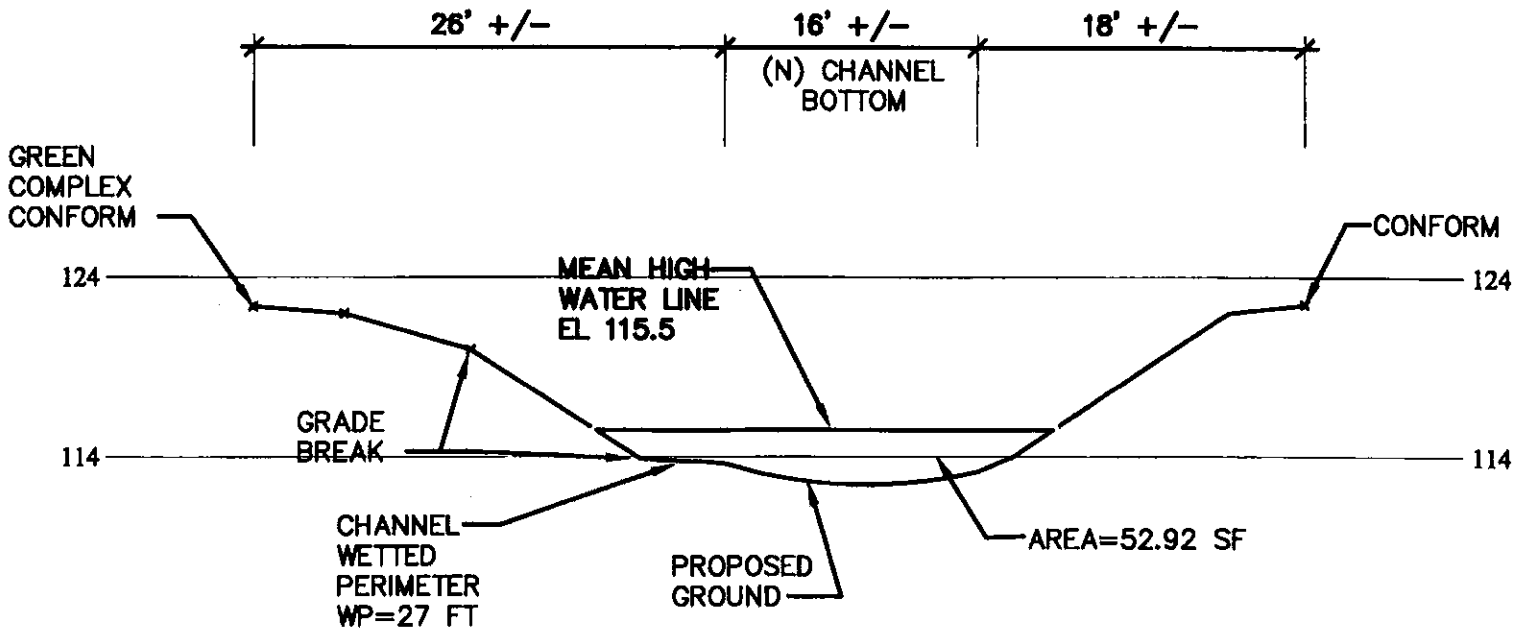
$R_H = 3.27$

$Q_{PROPOSED} = 1.49(97.77)(3.27)^{0.66}(0.027)^{0.5}/0.035$

$= 1,494.88$ cfs

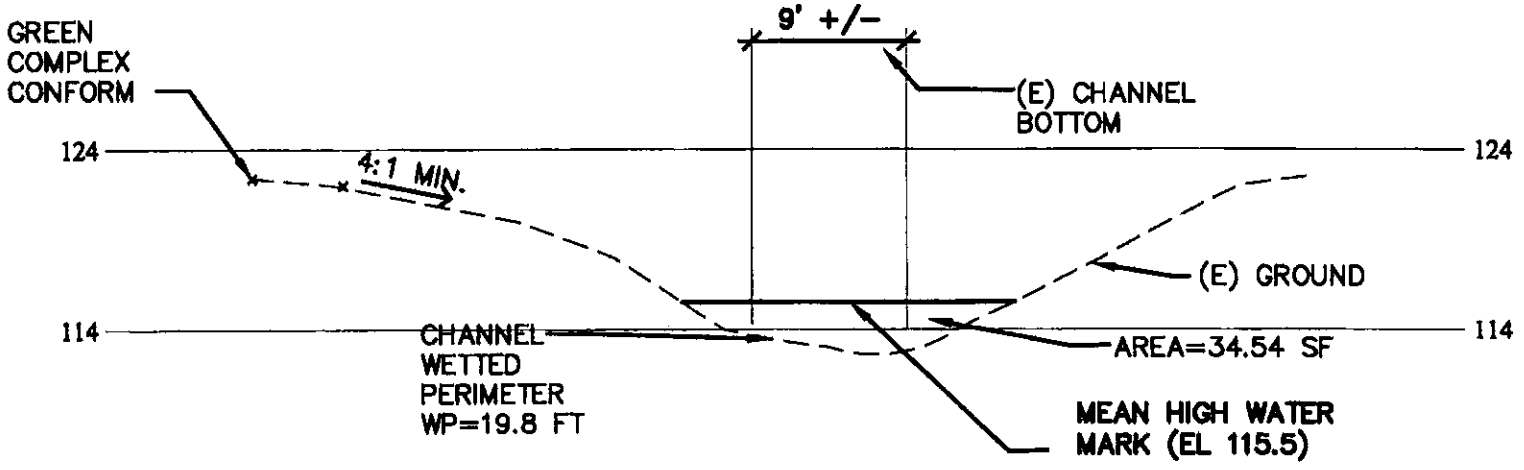
INCREASE FLOW CAPACITY OF 160 cfs WHICH WILL RESULT IN DECREASED ENERGY.

REGISTERED PROFESSIONAL ENGINEER
CLIFFORD E. BECHTEL
C 52075
Exp. 12/20
CIVIL
STATE OF CALIFORNIA



SECTION B - B HOLE #3 (proposed)

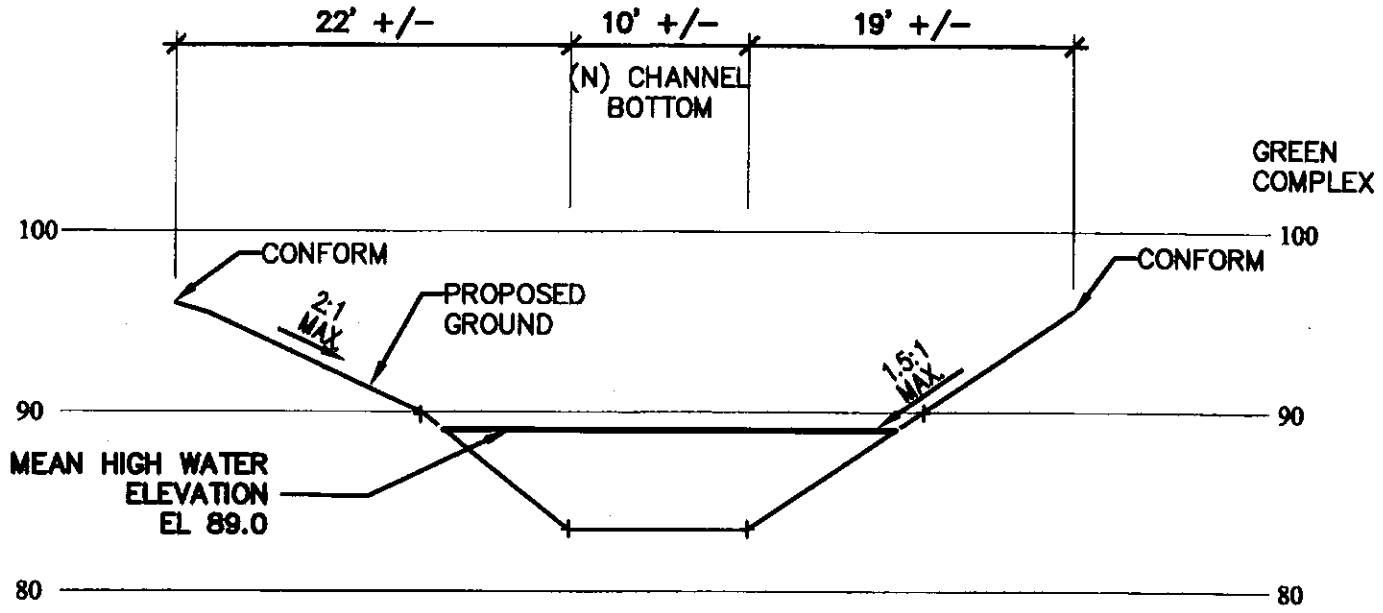
SCALE: 3/32" = 1'-0"



SECTION B - B HOLE #3 (existing)

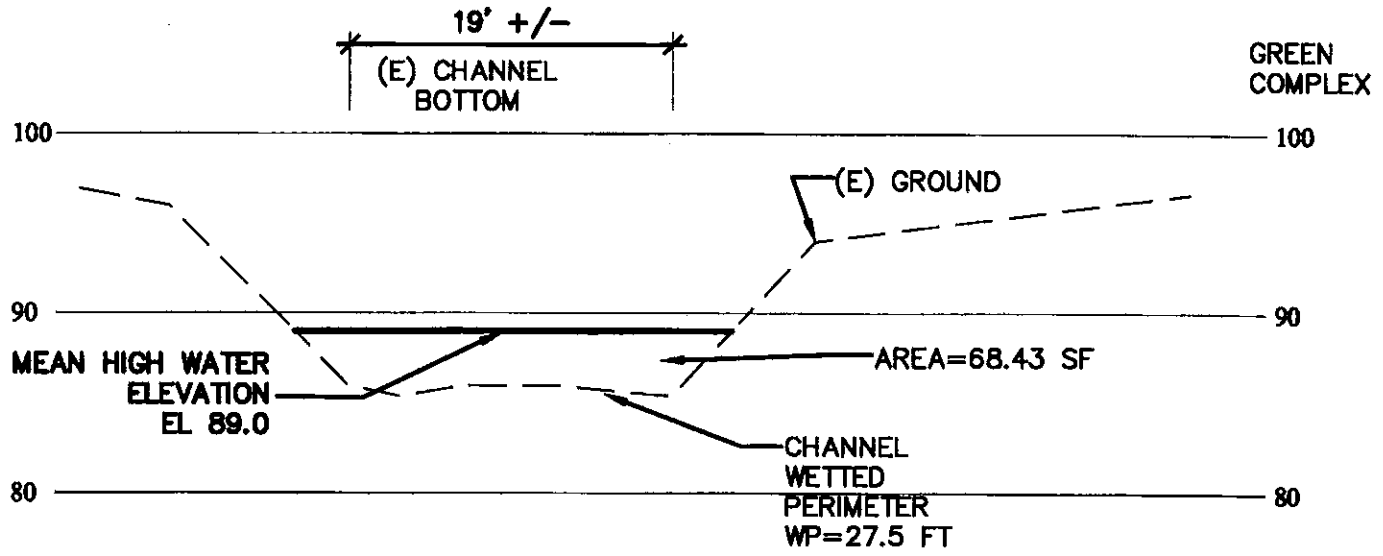
SCALE: 3/32" = 1'-0"

FIGURE 1



SECTION E - E HOLE #16 (proposed)

SCALE: 3/32" = 1'-0"



SECTION E - E HOLE #16 (existing)

SCALE: 3/32" = 1'-0"

FIGURE 2

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691 Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov

July 1, 2019

Joseph Balatbat, Assistant Planner
Town of Woodside

VIA Email to: jbalatbat@woodsidetown.org
Cc:

RE: Native American Tribal Consultation, Pursuant to the Assembly Bill 52 (AB 52), Amendments to the California Environmental Quality Act (CEQA) (Chapter 532, Statutes of 2014), Public Resources Code Sections 5097.94 (m), 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3, **2300 Woodside Road Creek Bank Restoration Project**, Town of Woodside; Palo Alto USGS Quadrangle, San Mateo County, California

Dear Mr. Balatbat:

Pursuant to Public Resources Code section 21080.3.1 (c), attached is a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the above-listed project. Please note that the intent of the AB 52 amendments to CEQA is to avoid and/or mitigate impacts to tribal cultural resources, (Pub. Resources Code §21084.3 (a)) ("Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.")

Public Resources Code sections 21080.3.1 and 21084.3(c) require CEQA lead agencies to consult with California Native American tribes that have requested notice from such agencies of proposed projects in the geographic area that are traditionally and culturally affiliated with the tribes on projects for which a Notice of Preparation or Notice of Negative Declaration or Mitigated Negative Declaration has been filed on or after July 1, 2015. Specifically, Public Resources Code section 21080.3.1 (d) provides:

> Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The AB 52 amendments to CEQA law does not preclude initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction prior to receiving requests for notification of projects in the tribe's areas of traditional and cultural affiliation. The Native American Heritage Commission (NAHC) recommends, but does not require, early consultation as a best practice to ensure that lead agencies receive sufficient information about cultural resources in a project area to avoid damaging effects to tribal cultural resources.

The NAHC also recommends, but does not require that agencies should also include with their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential effect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

   - A listing of any and all known cultural resources that have already been recorded on or adjacent to the APE, such as known archaeological sites;

   - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;

   - Whether the records search indicates a low, moderate, or high probability that unrecorded cultural resources are located in the APE; and

   - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measures.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code section 6254.10.

3. The result of any Sacred Lands File (SLF) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the APE; and

5. Any geotechnical reports regarding all or part of the APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS are not exhaustive and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event that they do, having the information beforehand will help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton

Gayle Totton, B.S., M.A., Ph. D
Associate Governmental Program Analyst

Attachment

MENLO COUNTRY CLUB
CREEK BANK RESTORATION

2300 WOODSIDE ROAD
Woodside, California

GENERAL NOTES

1. CONTRACTOR TO VERIFY ALL CONTROLLING DIMENSIONS & SETBACKS WITH ARCHITECTURAL PLANS.
2. TOPOGRAPHIC INFORMATION PROVIDED BY BKN SURVEYING, INC., DATED DECEMBER, 2012.
3. ALL WORK SHALL BE IN ACCORDANCE WITH THE ATTACHED PLANS.
4. CONTRACTOR SHALL GRADE SITE, IN ACCORDANCE TO PLANS AND ACHIEVE POSITIVE DRAINAGE IN ALL AREAS.
5. ALL EARTHWORK, INCLUDING PATH GRADING, PATIO GRADING, CUTS, FILLS, ENTRY ROAD PREPARATION, FOUNDATION AND SLAB CONSTRUCTION, RETAINING WALL DRAINAGE, BASEMENT DRAINAGE, AND SITE DRAINAGE, REQUIRE GEOTECHNICAL OBSERVATION AND TESTING DURING CONSTRUCTION. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A LICENSED GEOTECHNICAL ENGINEER.
6. IT IS RECOMMENDED THAT AN AS-BUILT PLAN FOR THE DRAINAGE SYSTEM BE PREPARED AT THE COMPLETION OF CONSTRUCTION.
7. THE OWNER RECOGNIZES THAT THE DRAINAGE FACILITIES WILL NEED TO BE PERIODICALLY CLEANED OF DEBRIS DURING THE FUNCTIONAL LIFE OF THE SYSTEM.
8. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE THEMSELVES WITH ALL EXISTING CONDITIONS. THEY SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING. VERIFY THE LOCATIONS OF ALL UNDERGROUND UTILITIES BEFORE STARTING CONSTRUCTION.
9. ANY SITE WORK THAT DEVIATES FROM WHAT IS SHOWN ON THE PLANS SHALL HAVE THE ENGINEER'S APPROVAL PRIOR TO PROCEEDING WITH THE DEVIATING WORK ITEM.
10. CONTRACTOR SHALL CALL "UNDERGROUND SERVICE ALERT" (800) 642-2444, 48 HOURS PRIOR TO EXCAVATION.
11. FOR ADDITIONAL SITE LAYOUT INFORMATION SEE LANDSCAPE PLANS.
12. PRIOR TO CONSTRUCTING ANY IMPROVEMENT WITHIN THE PUBLIC RIGHT OF WAY, CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT FROM THE TOWN OF WOODSIDE.
13. CONTRACTOR SHALL ADHERE TO "BEST MANAGEMENT PRACTICES" (BMP's) GUIDELINES DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR STORING, USING, AND DISPOSING OF ALL HAZARDOUS MATERIALS IN ACCORDANCE WITH ALL STATE AND LOCAL LAWS. ALL AREA DRAINS TO BE COVERED WITH FILTER FABRIC DURING CONSTRUCTION. FIBER ROLLS TO BE INSTALLED BY OCTOBER 1, IF LANDSCAPING IS NOT COMPLETE.
14. CONTRACTOR SHALL REVIEW AND UNDERSTAND GRADING AND DRAINAGE GUIDELINES SET FORTH IN THE GEOTECHNICAL REPORT PRIOR TO STARTING ANY SITE WORK. FURTHERMORE, GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THE TOWN GRADING ORDINANCE. SOIL OR OTHER CONSTRUCTION MATERIALS SHALL NOT BE STOCKPILED IN THE PUBLIC RIGHT-OF-WAY UNLESS AN ENCROACHMENT PERMIT IS OBTAINED FROM THE DEPARTMENT OF PUBLIC WORKS. GRADING SHALL NEITHER BE INITIATED NOR CONTINUED BETWEEN OCTOBER 1 AND APRIL 1, UNLESS APPROVED BY TOWN. GRADING SHALL BE DONE BETWEEN THE HOURS OF 8:00 AM AND 5:00 PM, MONDAY THROUGH FRIDAY UNLESS OTHERWISE SPECIFICALLY AUTHORIZED BY THE DIRECTOR OF PUBLIC WORKS. THE STORMWATER POLLUTION PREVENTION PROGRAM BEST MANAGEMENT PRACTICES (BMPs) FOR CONSTRUCTION SHALL BE IMPLEMENTED TO PROTECT WATER QUALITY.
15. CONTRACTOR SHALL ADHERE TO CAL OSHA STANDARD WHEN GRADING AND EXCAVATING.
16. ALL CONSTRUCTION AND RELATED ACTIVITIES WHICH REQUIRE A TOWN PERMIT SHALL BE ALLOWED ONLY DURING THE HOURS OF 7:30 AM TO 5:30 PM, MONDAY THROUGH FRIDAY AND 8:00 AM TO 1:00 PM, SATURDAYS. NO CONSTRUCTION ACTIVITY OR RELATED ACTIVITIES SHALL BE ALLOWED OUTSIDE OF THE AFOREMENTIONED HOURS OR ON SUNDAYS AND THE FOLLOWING HOLIDAYS: NEW YEAR'S DAY, PRESIDENT'S DAY, MEMORIAL DAY, 4TH OF JULY, LABOR DAY, THANKSGIVING AND CHRISTMAS DAY. ALL GASOLINE POWERED CONSTRUCTION EQUIPMENT SHALL BE EQUIPPED WITH AN OPERABLE MUFFLER OR BAFFLING SYSTEM AS GENERALLY PROVIDED BY THE MANUFACTURER, AND NO MODIFICATION TO THESE SYSTEMS IS PERMITTED.
17. THE OWNER/APPLICANT SHALL ENSURE THAT APPLICABLE BEST MANAGEMENT PRACTICES (BMPs) FROM THE SAN MATEO STORMWATER POLLUTION PREVENTION PROGRAM (STOPPP) ARE FOLLOWED TO PREVENT DISCHARGE OF SOIL OR ANY CONSTRUCTION MATERIAL INTO THE GUTTER, STORMDRAIN SYSTEM OR CREEK.

UTILITY NOTES

1. CONTRACTOR SHALL POT HOLE AND PROTECT THE EXISTING UTILITY SERVICES WITHIN THE WORK ZONE, PRIOR TO GRADING. OWNER TO MARK ALL EXISTING IRRIGATION.
2. ALL IRRIGATION WORK IS TO BE PERFORMED BY OWNER.

STAGING NOTES

1. CONTRACTOR AND OWNER SHALL INFORM ALL WORKS, SUBS, AND EMPLOYEES THAT ALL PARKING SHALL BE ON SITE. PARKING ON WOODSIDE ROAD IS PROHIBITED. CONTRACTOR SHALL COORDINATE PROJECT TO IMPOSE THE LEAST IMPACT ON THE NEIGHBORING PROPERTIES. CONTRACTOR SHALL ASSIGN DESIGNATED AREAS FOR PARKING AND STAGING OF WORK, INGRESS/EGRESS HALTED.
2. CONTRACTOR AND SUBS ARE RESPONSIBLE TO SECURE ALL BUILDING MATERIALS AND TOOLS IN THE STAGING AREA OR AS DESIGNATED BY CONTRACTOR.

EROSION AND SEDIMENT CONTROL NOTES

1. STORM DRAIN POLLUTION PREVENTION: PROTECT DOWN SLOPE DRAINAGE COURSES, STREAMS AND STORM DRAINS WITH ROCK BAGS, HAY BALES, TEMPORARY DRAINAGE SWALES, FIBER ROLLS, SILT FENCES, BERMS OR STORM DRAIN INLET FILTERS.
2. A STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSTALLED PRIOR TO THE INCEPTION OF ANY WORK ON-SITE, AND SHALL REMAIN IN PLACE UNTIL THE COMPLETION OF ALL LANDSCAPING. EXISTING ASPHALT DRIVEWAY CAN SERVE AS CONSTRUCTION ENTRANCE, IF CONTRACTOR CAN LEAVE AS IS FOR JOE.
3. DRY SWEEPING METHODS SHALL BE USED TO REMOVE ANY DEBRIS AND / OR SOIL TRACKED ON TO WOODSIDE ROAD AND MENLO CC DRIVEWAY, AS NECESSARY. DRY SWEEPING SHALL BE DONE AT THE END OF EACH WORK DAY.
4. THE CONTRACTOR SHALL FOLLOW AND USE BEST MANAGEMENT PRACTICES (BMP) FOR DISCHARGE INTO THE CITY'S STORM WATER SYSTEM DURING SITE STRIPPING, HAULING, EARTH MOVING ACTIVITIES, HEAVY EQUIPMENT OPERATIONS, GENERAL CONSTRUCTION AND SITE SUPERVISION, PAINTING, APPLICATIONS AND USE OF SOLVENTS AND ADHESIVES, LANDSCAPING AND GARDENING.
5. STOCKPILED MATERIAL SHALL BE COVERED WITH VISQUEEN OR A TARPAULIN UNTIL THE MATERIAL IS REMOVED FROM THE SITE. ANY REMAINING BARE SOIL THAT EXISTS AFTER THE STOCKPILE HAS BEEN REMOVED SHALL BE COVERED UNTIL A NATURAL GROUND COVER IS ESTABLISHED OR IT MAY BE SEEDED OR PLANTED TO PROVIDE GROUND COVER PRIOR TO THE FALL RAINY SEASON.
6. EXISTING OR SITE INLETS AND ONCE THE PROPOSED ON-SITE DRAINAGE INLETS HAVE BEEN INSTALLED, THE CONTRACTOR SHALL PROTECT ANY BARE SOIL FROM ENTERING THE INLETS BY INSTALLING FILTER FABRIC UNDER THE INLET GRATES. THE FILTER FABRIC SHALL REMAIN UNTIL NATURAL GROUND COVER IS ESTABLISHED.
7. CONTRACTOR SHALL CONTROL DUST AS OFTEN AS REQUIRED BY THE TOWN/CITY/COUNTY INSPECTOR.
8. IF EROSION DEVELOPS IN A TEMPORARY EROSION PROTECTED AREA OR ANY ESTABLISHED VEGETATED AREA, THE CONTRACTOR SHALL IMMEDIATELY ALLEVIATE AND REMEDY THE PROBLEM AND TAKE PREVENTATIVE MEASURES TO MINIMIZE THE POSSIBILITY OF ITS REOCCURRENCE AND ALSO TO PREVENT THE RESULTING FLOW OF SOILS OR WATER WITH SUSPENDED SOILS FROM GETTING INTO THE TOWN'S DRAINAGE SYSTEM OR ANY NATURAL DRAINAGE CHANNEL OR DITCH.
9. ALL DISTURBED AREAS SHALL BE LANDSCAPED OR PROTECTED.
10. ALL DISTURBED SLOPES GREATER THAN 2:1 SHALL BE PROTECTED WITH EROSION BLANKET (STRAW OR FIBER).
11. CONTRACTOR SHALL PLACE SAND BAGS IN GUTTER, DIRECTLY UP STREAM OF CATCH BASINS IN STREET, PRIOR TO BEGINNING WORK.
12. CONTRACTOR SHALL ESTABLISH A WATER SOURCE, ON SITE, PRIOR TO COMMENCEMENT OF WORK. WATER TRUCK ON SITE IS AN ACCEPTABLE WATER SOURCE.
13. CONTRACTOR SHALL ADHERE TO NPDES (NATIONAL POLLUTION DISCHARGED ELIMINATION SYSTEM) BEST MANAGEMENT PRACTICES (BMP) FOR SEDIMENTATION PREVENTION AND EROSION CONTROL TO PREVENT DELETERIOUS MATERIALS OR POLLUTANTS FROM ENTERING THE TOWN OR COUNTY STORM DRAIN SYSTEMS.
14. EROSION CONTROL INFORMATION SHOWN ON C-2.0 AND 2.1 IS CONCEPTUAL. PROJECT EROSION CONTROL PLAN SHALL BE MONITORED BY ENGINEER AND UPDATED AS REQUIRED, AS DISTURBED AREA ARE CREATED. EROSION AND SEDIMENT CONTROL IS A STATE AND LOCAL REQUIREMENT. THE FULL EXTENT OF PROTECTION IS TO BE DETERMINED BY THE ENGINEER & CONTRACTOR.
15. SITE CONDITIONS AT TIME OF PLACEMENT OF EROSION CONTROL MEASURES WILL VARY. THE CONTRACTOR SHALL ADJUST EROSION CONTROL MEASURES AS THE SITE CONDITIONS CHANGE AND AS THE NEED OF CONSTRUCTION SHIFT TO PREVENT EROSION AND SEDIMENTATION FROM LEAVING SITE.
16. TRASH AND CONSTRUCTION RELATED SOLID WASTES MUST BE DISPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION AND DISPERSAL BY WIND.
17. SILT FENCE(S) AND/OR FIBER ROLL(S) SHALL BE INSTALLED PRIOR TO SEPTEMBER 15 (PRIOR TO FIRST RAINY SEASON) AND SHALL REMAIN IN PLACE UNTIL THE LANDSCAPING GROUND COVER IS INSTALLED. CONTRACTOR SHALL CONTINUALLY MONITOR FENCES AND ROLLS, FOLLOWING AND/OR DURING ALL RAIN EVENTS, TO ENSURE FACILITIES ARE FUNCTIONING PROPERLY. SILT BUILD UP ON FACILITIES SHALL BE REMOVED REGULARLY, DISPURSED ON SITE, AND PROTECT FROM WASHING AWAY AGAIN.

PLANNING DATA

A.P.N.: 069-161-020,030
ZONING = RECREATIONAL OPEN SPACE
LOT SIZE: 144.83 ACRES

SCOPE OF WORK

REPAIR EXISTING CREEK BANK FAILURES ALONG REDWOOD CREEK, AT GOLF HOLES #3 AND #16, AS REQUIRED TO STABILIZE SLOPES.

CONSTRUCTION SCHEDULE

SCHEDULE SUBJECT TO TOWN APPROVAL
ANTICIPATED: SEPTEMBER 1, 2018 THROUGH NOVEMBER 1, 2018
PROJECT CONTACT: CHRIS EICHSTROM, MENLO COUNTRY CLUB
650-823-6836

SHEET INDEX

Plans prepared by:
Clifford Bechtel and Associates, Inc.
901 Waltermire Street
Belmont, CA 94002
(650) 333-0103
(650) 637-1059 (fax)

Owner:
Menlo Country Club
2300 Woodside Road
Woodside, CA

Geotechnical Engineer:
Rontig Engineering
1390 El Camino Real
Second Floor
San Carlos, CA 94070
Tel. (650) 591-5224

Environmental Consultant:
Monic Associates
1690 San Pablo Avenue, Suite D
Pinole, CA 94564
Contact: Judy Bendix
510-964-0394

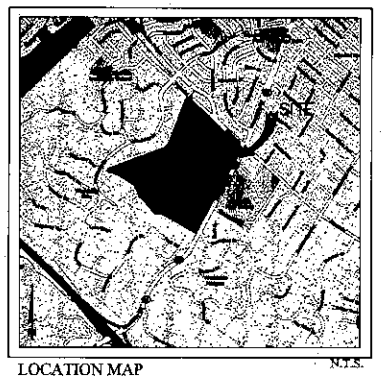
TRUCK HAULING ROUTE

ALL HAULING SHALL FOLLOW THE FOLLOWING ROUTE, UNLESS ALTERNATE ROUTE HAS BEEN APPROVED BY TOWN

HEAD WEST ON WOODSIDE ROAD
ENTER HIGHWAY 280 TO PROPOSED DESTINATION

LEGEND / ABBREVIATIONS

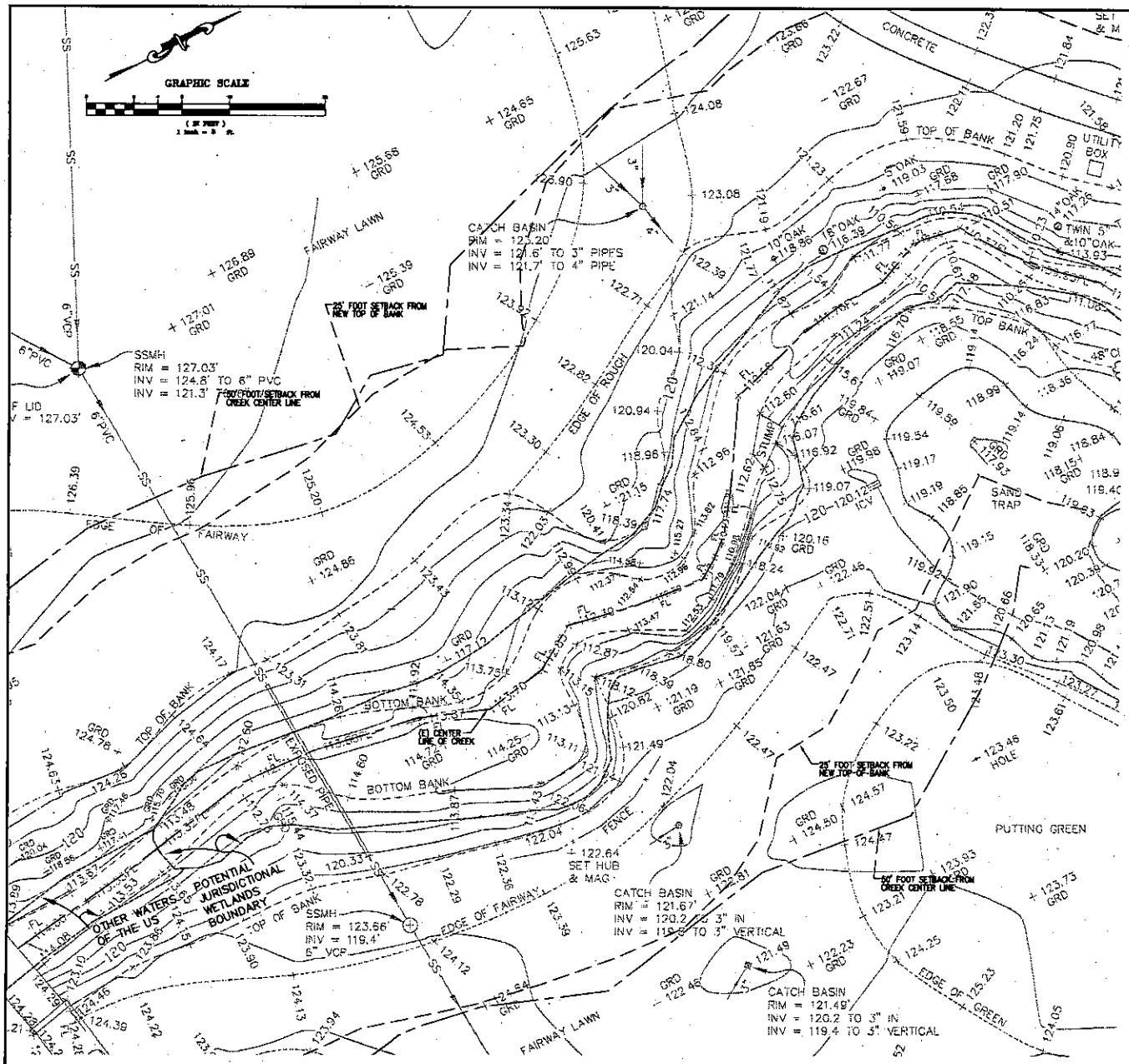
+101.5	SPOT SHOT (PROPOSED GRADE)
AD	AREA DRAIN
CB	CATCH BASIN
FM	FORCE MAIN
FL	FLOW LINE
FDCO	FOUNDATION CLEAN OUT
RWL	RAIN WATER LEADER
PD	PATIO DRAIN
MIN.	MINIMUM
INV	INVERT.
SD	STORM DRAIN PIPE, SEE UTILITY NOTE 3
SDCO	SUB-DRAIN CLEANOUT
TW	TOP OF WALL
BW	BOTTOM OF WALL
(E)	EXISTING
~~>	GENERAL DRAINAGE FLOW DIRECTION



LOCATION MAP N.T.S.

JULY 30, 2018 C-0.0

ATTACHMENT 9



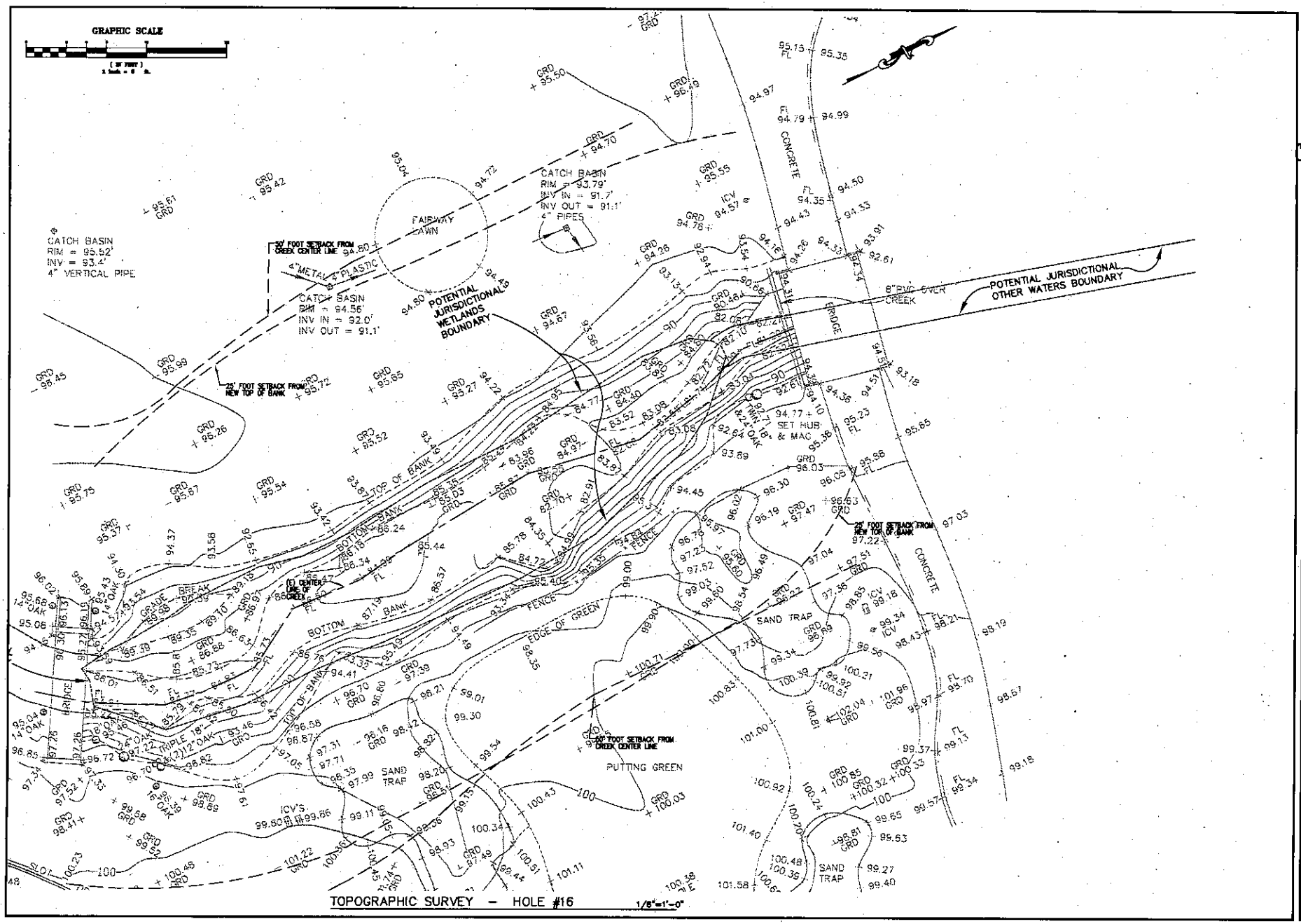
TOPOGRAPHIC SURVEY – HOLE #3 1/8"=1'-0"

CLIFFORD HASTIE AND ASSOCIATES
CLIFFORD HASTIE, PE
No. 24

Menlo Country Club - Creek Ban Restoration
2900 WOODSIDE ROAD
Woodside SAN MATEO COUNTY California

CONTENTS:
HOLE #3 TOPOGRAPHIC SURVEY

DATE 07/29/19
SCALE AS NOTED
REVISIONS:
DRAWN J.G.
CHECKED C.B.
JOB No. 2018643
SHEET NO.
C-0.1
OF 13 SHEETS



CLIFFORD BELITZ AND ASSOCIATES

Menlo Country Club - Creek Bank Restoration
2900 WOODSIDE ROAD
Woodside
SAN MATEO COUNTY
California

CONTENTS:
HOLE #16 TOPOGRAPHIC SURVEY

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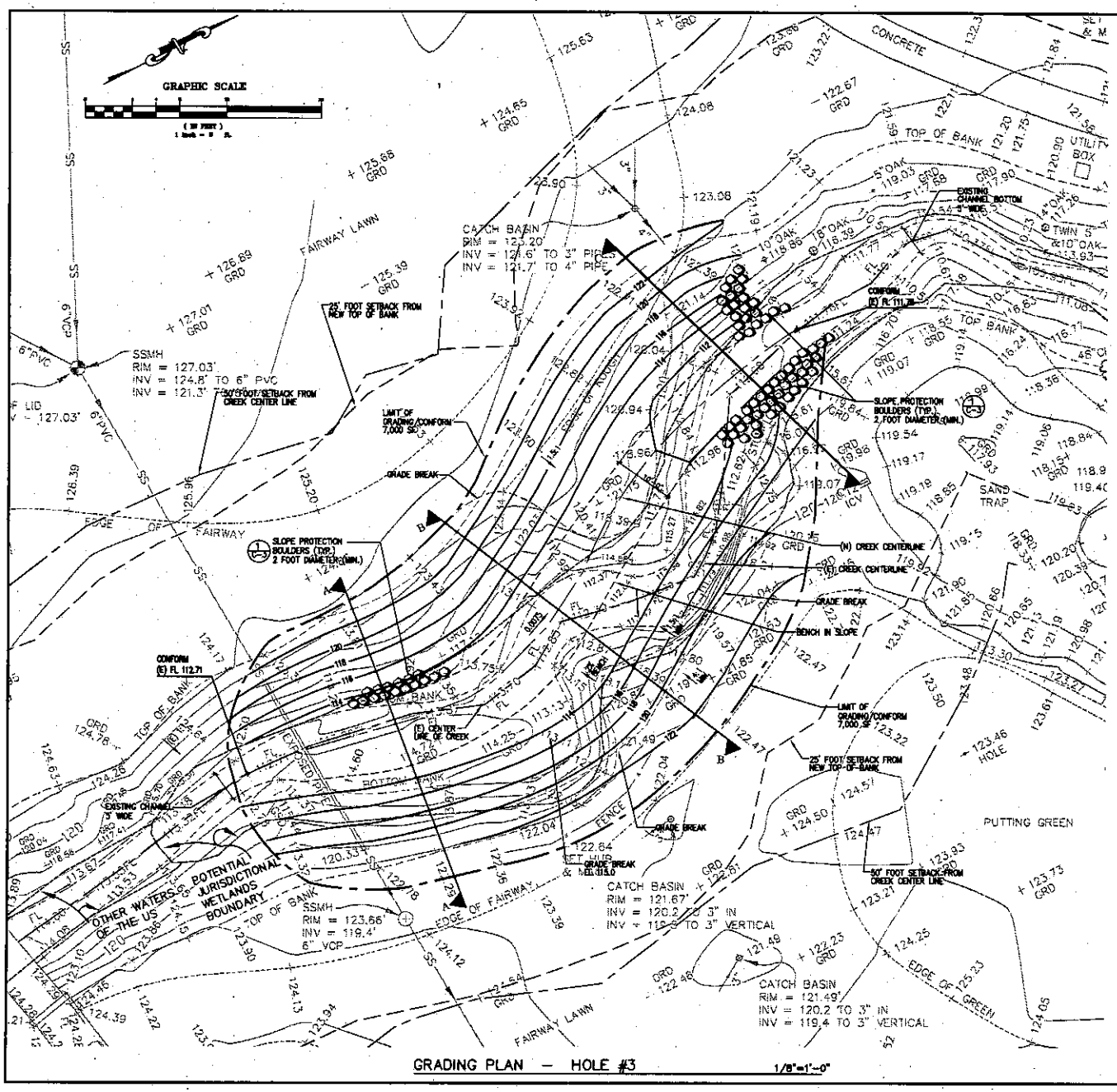
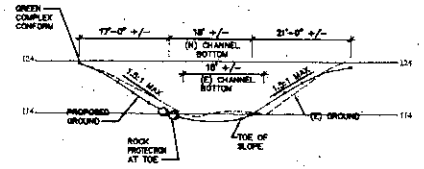
JOB No. 2018643

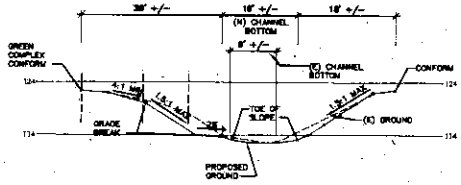
SHEET NO.
C-0.2
OF 13 SHEETS





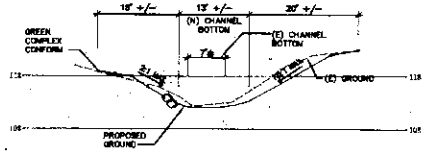
SECTION A-A HOLE #3

SCALE: 3/32" = 1'-0"



SECTION B-B HOLE #3

SCALE: 3/32" = 1'-0"



SECTION C-C HOLE #3

SCALE: 3/32" = 1'-0"

EARTHWORK TABLE	CUT	FILL
WORK	800 CY	800 CY
TOTAL	800 CY	800 CY
EXPORT	00 CY	

EXCESS MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A LEGAL MANNER. EARTHWORK QUANTITIES HAVE BEEN PROVIDED FOR PLANNING PURPOSES ONLY. CONTRACTOR SHALL ESTIMATE HIS/HER OWN QUANTITIES TO COMPLETE JOB PER CONTRACT WITH OWNER.

CLIFFORD NICOTEL AND ASSOCIATES

CLIFFORD NICOTEL, PE

Menlo Country Club - Creek Bank Restoration
2900 WOODSIDE ROAD
SAN MATEO COUNTY
California
Woodside

CONTENTS:

HOLE #3 GRADING PLAN

DATE 07/29/19

SCALE AS NOTED

REVISIONS:

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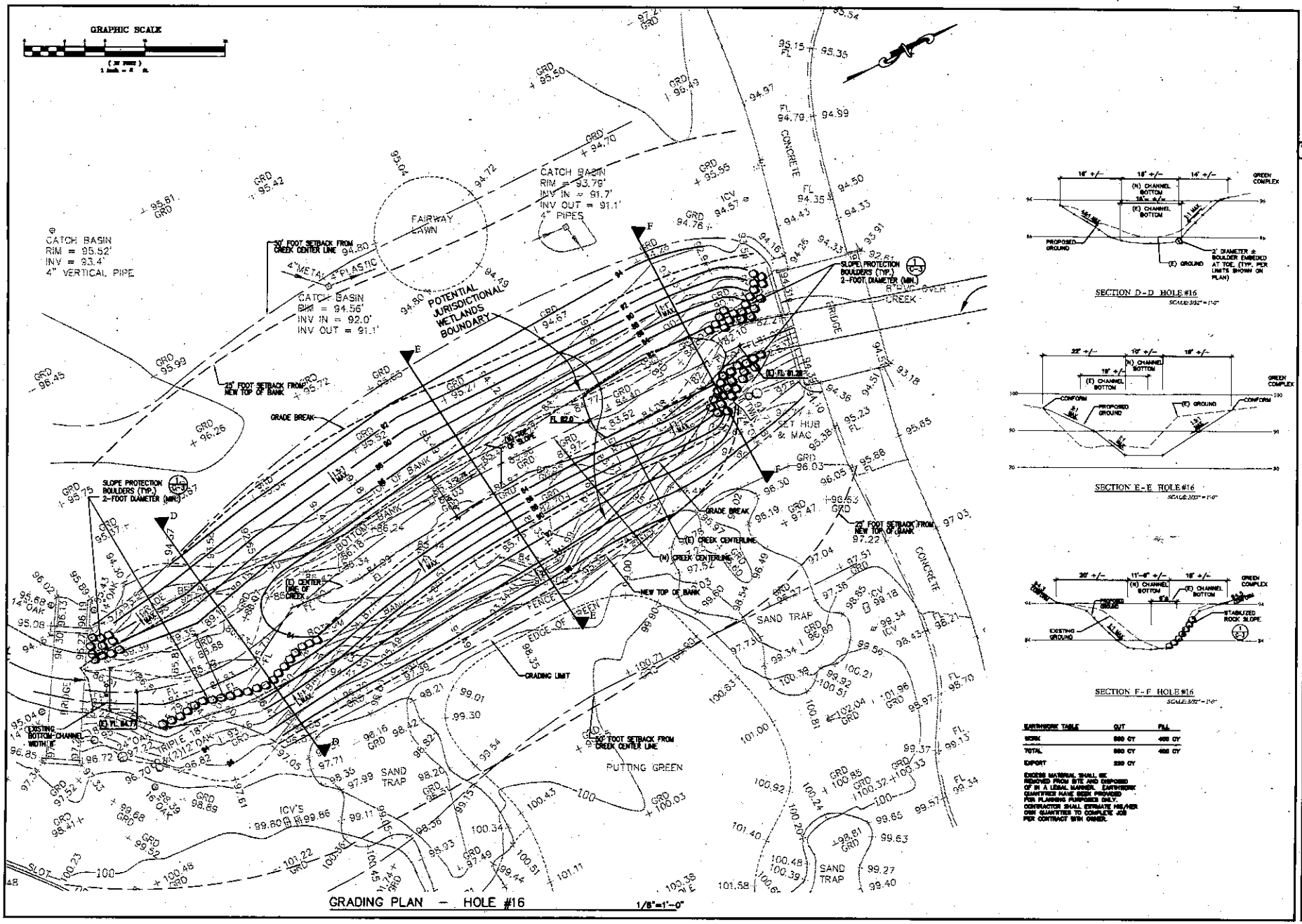
CHECKED C.B.

JOB No. 2018643

SHEET NO.

C-1.0

OF 13 SHEETS



EARTHWORK TABLE	CUT	FILL
WORK	800 CY	400 CY
TOTAL	800 CY	400 CY
EXPORT	330 CY	

EXCESS MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A LEGAL MANNER. EARTHWORK QUANTITIES HAVE BEEN PROVIDED FOR PLANNING PURPOSES ONLY. CONTRACTOR SHALL ESTIMATE HIS/HER OWN QUANTITIES TO COMPLETE JOB PER CONTRACT WITH OWNER.

CLIFFORD BELTZEL AND ASSOCIATES
CLIFFORD BELTZEL, PE

Menlo Country Club - HOLE 16 CREEK STABILIZATION
2900 WOODSIDE ROAD
SAN MATEO COUNTY
California
Woodside

CONTENTS:
HOLE #16 GRADING PLAN

DATE 07/29/19
SCALE AS NOTED
REVISIONS:
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JOB No. 2018643
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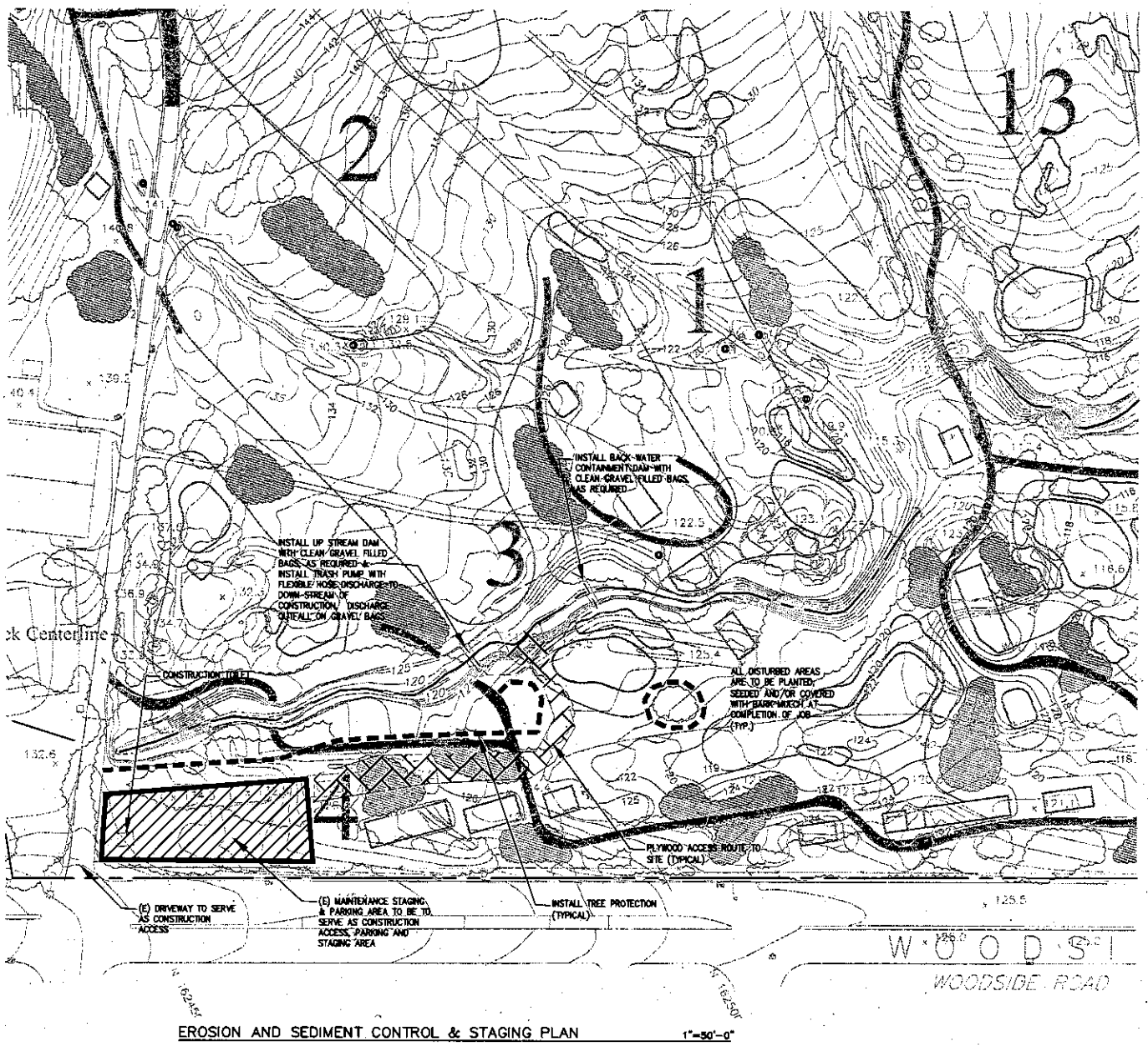

EROSION AND SEDIMENT CONTROL & STAGING PLAN 1"=50'-0"

SEE SHEET C-0 FOR ALL SEDIMENT AND EROSION CONTROL NOTES

TREE PROTECTION NOTES:

1. PROTECTIVE FENCING IS REQUIRED TO BE PROVIDED DURING THE CONSTRUCTION PERIOD TO PROTECT AND PRESERVE TREES TO REMAIN.
2. PROTECTIVE FENCING SHALL BE INSTALLED AT LIMITS OF THE "TREE PROTECTION ZONE" SHOWN ON THIS PLAN. THE TREE PROTECTION ZONE SHOWN IS 6 TIMES THE TRUNK DIAMETER.
3. CONTRACTOR TO COORDINATE WITH PROJECT ARBORIST FOR FENCING PLACEMENT & REVIEW PRIOR TO START OF WORK. CONTRACTOR TO CONTACT TOWN ARBORIST FOR FINAL APPROVAL OF PROTECTIONS.
4. PROTECTIVE FENCING SHALL BE AS FOLLOWS, UNLESS OTHERWISE APPROVED BY THE PROJECT AND THE TOWN ARBORIST:
   a. CONSIST OF CHAIN LINK FENCING AND HAVING A MINIMUM HEIGHT OF 6-FEET.
   b. BE MOUNTED ON STEEL POSTS DRIVEN APPROX. 3-FEET INTO SOIL.
   c. FENCING POSTS MUST BE LOCATED A MAXIMUM OF 10-FEET ON CENTER.
   d. PROTECTIVE FENCING MUST BE INSTALLED PRIOR TO THE ARRIVAL OF MATERIALS, VEHICLES, OR EQUIPMENT.
   e. PROTECTIVE FENCING MUST NOT BE MOVED, EVEN TEMPORARILY, AND MUST REMAIN IN PLACE UNTIL ALL CONSTRUCTION IS COMPLETED, UNLESS APPROVED BY A CERTIFIED ARBORIST.
   f. TREE PROTECTION SIGNAGE SHALL BE MOUNTED TO ALL INDIVIDUAL TREE PROTECTION FENCES.
5. SEE ADDITIONAL NOTES ON SHEET C-0 AND WITHIN ARBORIST REPORT.

Clifford Knobel and Associates
Clifford Knobel, PE

Menlo Country Club - Creek Bank Restoration
2900 WOODSIDE ROAD
SAN MATEO COUNTY California
Woodside

CONTENTS:
HOLE#3 EROSION, SEDIMENT CONTROL & STAGING PLAN

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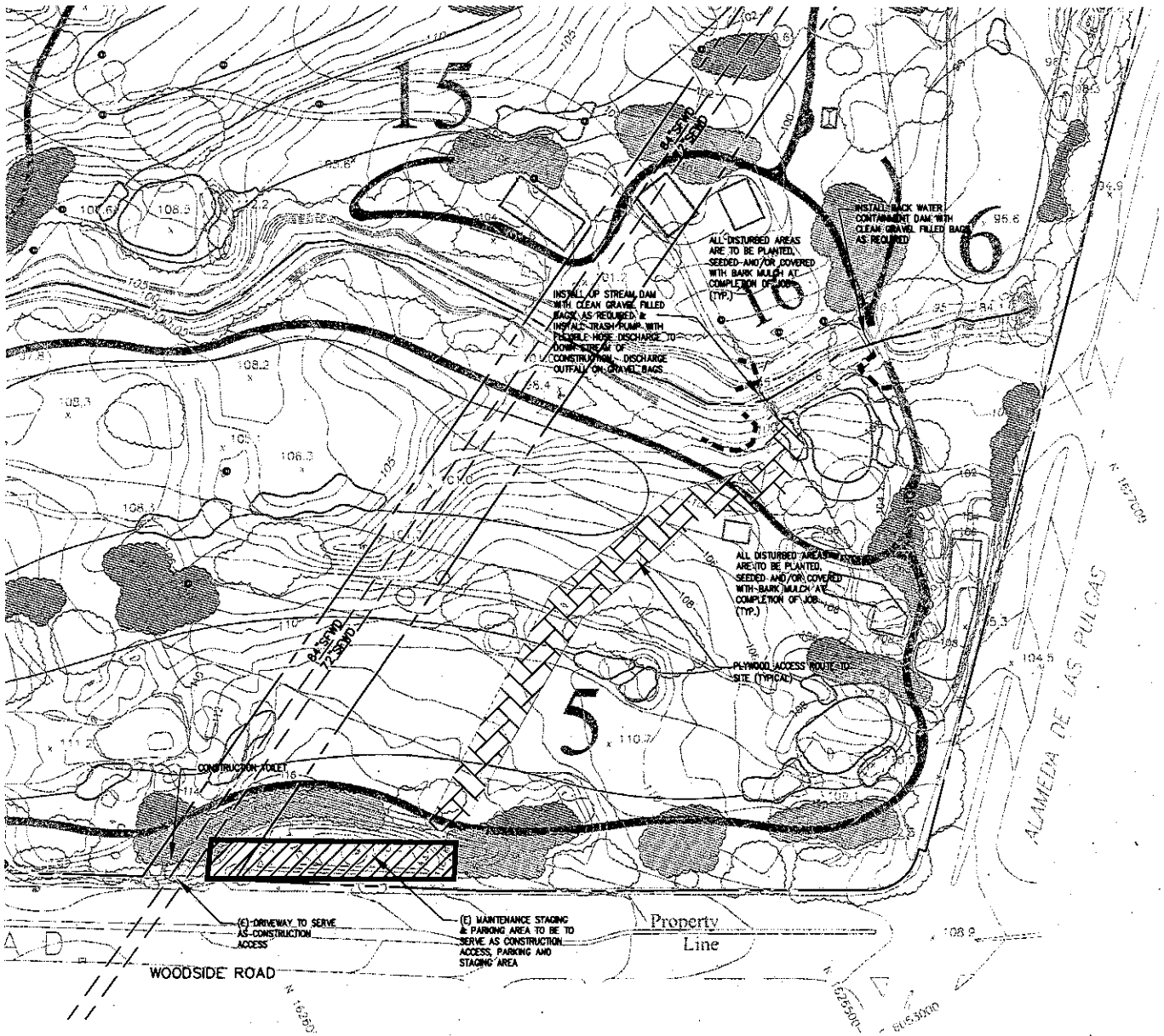

EROSION AND SEDIMENT CONTROL & STAGING PLAN 1"=50'-0"

SEE SHEET C-0 FOR ALL SEDIMENT AND EROSION CONTROL NOTES

TREE PROTECTION NOTES:

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5. SEE ADDITIONAL NOTES ON SHEET C-0 AND WRMA ARBORIST REPORT.

CLIFFORD BEUTEL AND ASSOCIATES

Menlo Country Club - Creek Bank Restoration
2900 WOODSIDE ROAD
SAN MATEO COUNTY California
Woodside

CONTENTS:
HOLE#16 EROSION, SEDIMENT CONTROL & STAGING PLAN

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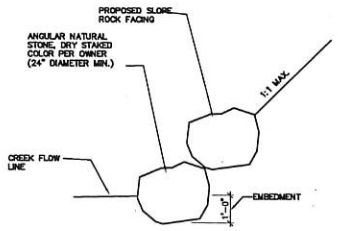
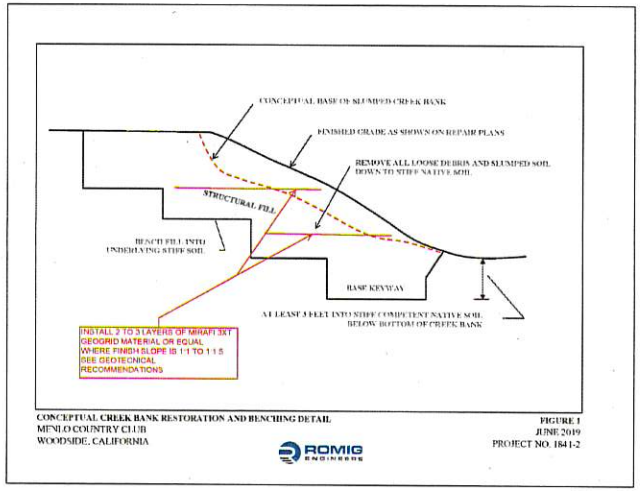
OF 13 SHEETS



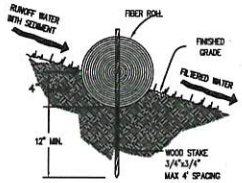
1 / C-3 ROCK SLOPE PROTECTION

NOT TO SCALE



2 / C-3 TYPICAL RESTORATION SECTION

NOT TO SCALE



ENTRENCHMENT DETAIL

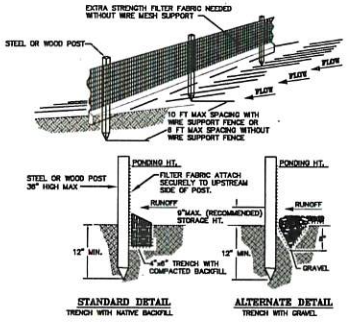
IN SLOPE AREA

NOTES:

1. FIBER ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3" TO 4" DEEP, DUG ON CONTOUR.
2. ADJACENT ROLLS SHALL TIGHTLY ABUT.
3. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND FIBER ROLL.

7 / C-3 FIBER ROLL

NOT TO SCALE



NOTES:

1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

8 / C-3 SILT FENCE

NOT TO SCALE

CLIFFORD BECHTEL AND ASSOCIATES
CLIFFORD BECHTEL, PE
[redacted]

Menlo Country Club - Creek Bank Restoration
2900 WOODSIDE ROAD
SAN MATEO COUNTY
Woodside
California

CONTENTS:

CIVIL DETAILS

DATE 07/29/19

SCALE AS NOTED

REVISIONS:

DRAWN J.G.

CHECKED C.B.

JOB No. 2018643

SHEET NO.

C-3.0

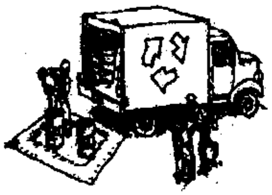
OF 13 SHEETS

Construction Best Management Practices (BMPs)

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

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

Materials & Waste Management



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

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

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

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

Equipment Management & Spill Control

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

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

Earthmoving

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

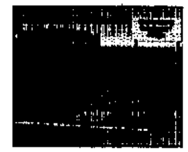
Contaminated Soils
- ☐ If any of the following conditions are observed, test for contamination and contact the Regional Water Quality Control Board:
  - Unusual soil conditions, discoloration, or odor.
  - Abandoned underground tanks.
  - Abandoned wells
  - Buried barrels, debris, or trash.

Paving/Asphalt Work

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

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

Concrete, Grout & Mortar Application



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

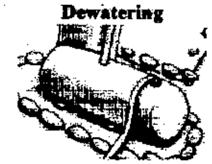
Landscaping

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

Painting & Paint Removal

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

Dewatering



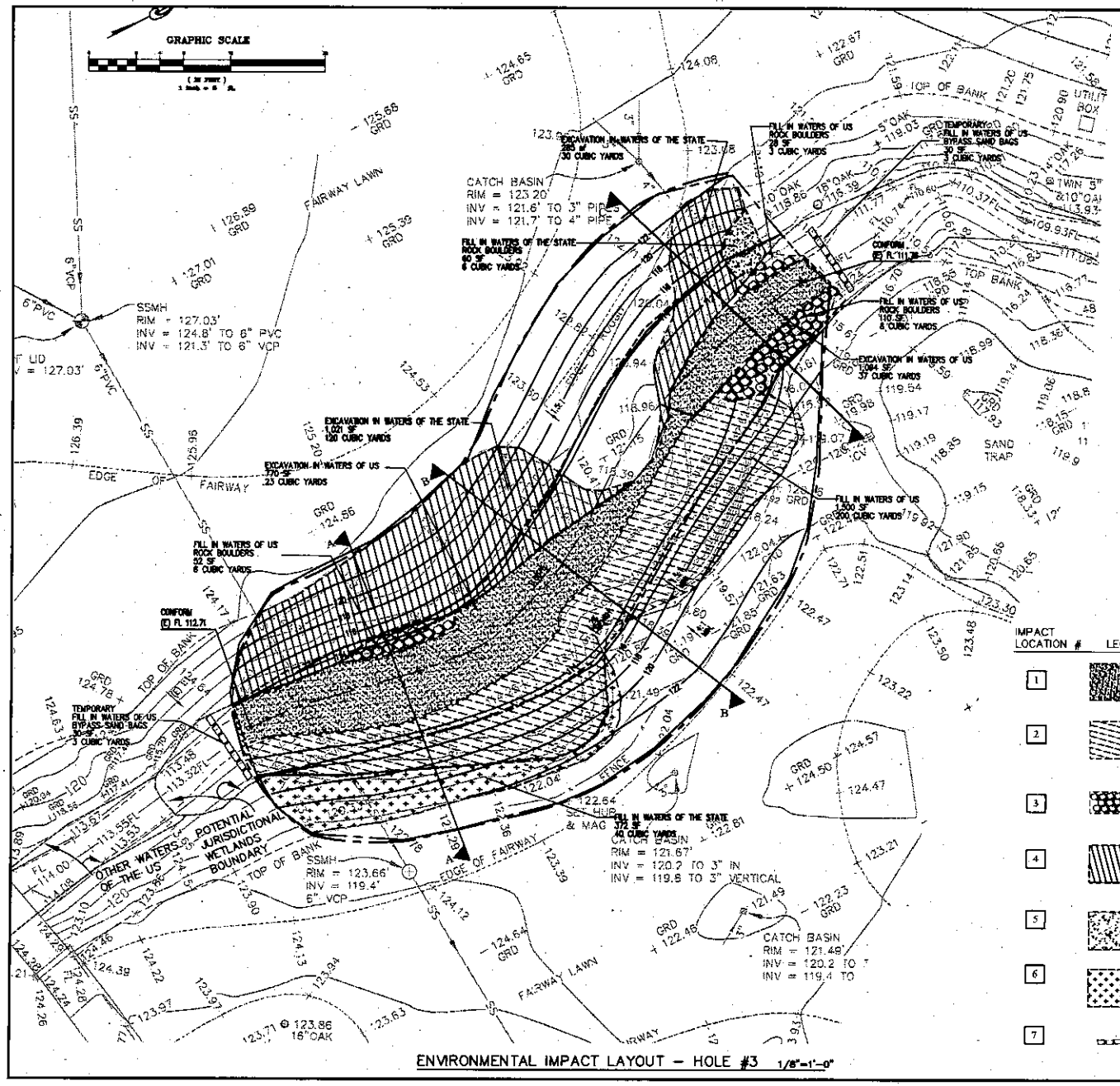
- ☐ Discharges of groundwater or captured runoff from dewatering operations must be properly managed and disposed. When possible send dewatering discharge to landscaped area or sanitary sewer. If discharging to the sanitary sewer call your local wastewater treatment plant.
- ☐ Divert run-on water from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

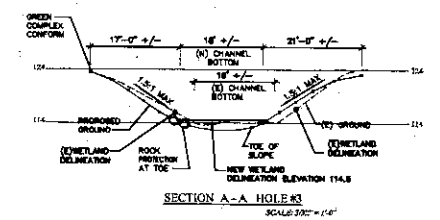
Storm drain polluters may be liable for fines of up to $10,000 per day!

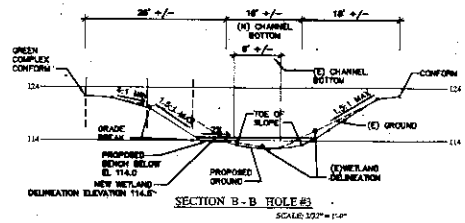
Menlo Country Club - Creek Bank Restoration
2900 WOODSIDE ROAD
SAN MATEO COUNTY
Woodside California

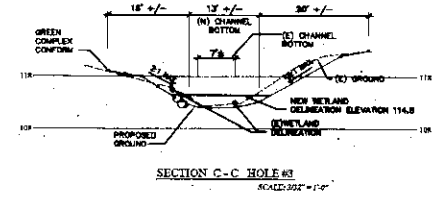
CONTENTS: CONSTRUCTION BMP CHECKLIST

DATE	07/29/19
SCALE	AS NOTED
REVISIONS:	
DRAWN	J.G.
CHECKED	C.B.
JOB No.	2018643
SHEET NO.	C-4.0
OF 13 SHEETS	









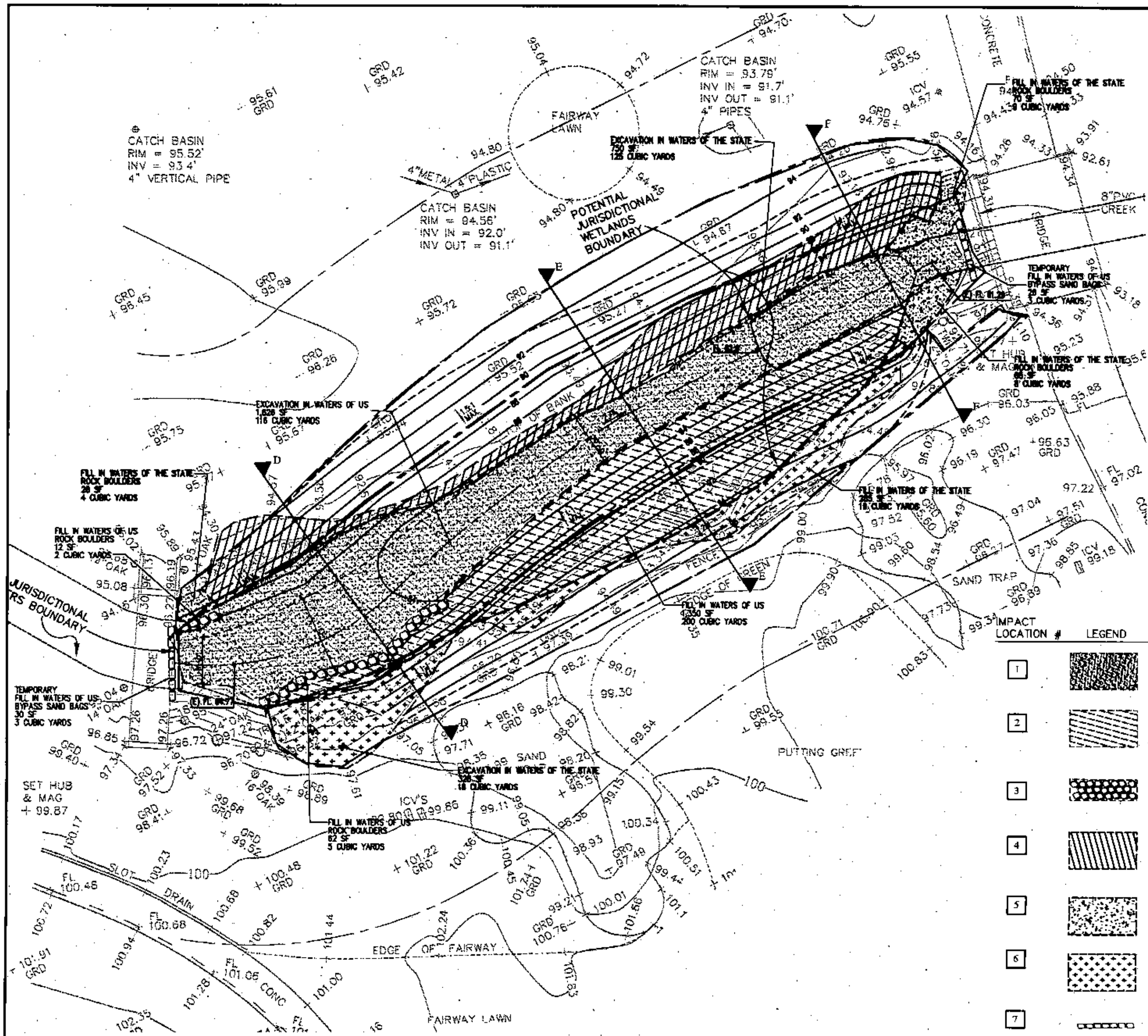
IMPACT LOCATION #	LEGEND	IMPACT DESCRIPTION	TOTAL IMPACT AREA	TOTAL IMPACT VOLUME
1		EXCAVATION IN WATERS OF US (NATIVE SOIL)	1,094 SF	37 CY
2		FILL IN WATERS OF US (NATIVE SOIL)	1,500 SF	200 CY
3		FILL IN WATERS OF US (ROCK)	190 SF	17 CY
4		EXCAVATION IN WATERS OF THE STATE (NATIVE SOIL)	1,306 SF	150 CY
5		FILL IN WATERS OF THE STATE (ROCK)	72 SF	9 CY
6		FILL IN WATERS OF THE STATE (NATIVE SOIL)	372 SF	40 CY
7		TEMPORARY FILL IN WATERS OF THE STATE AND US (SAND BAGS)	60 SF	6 CY

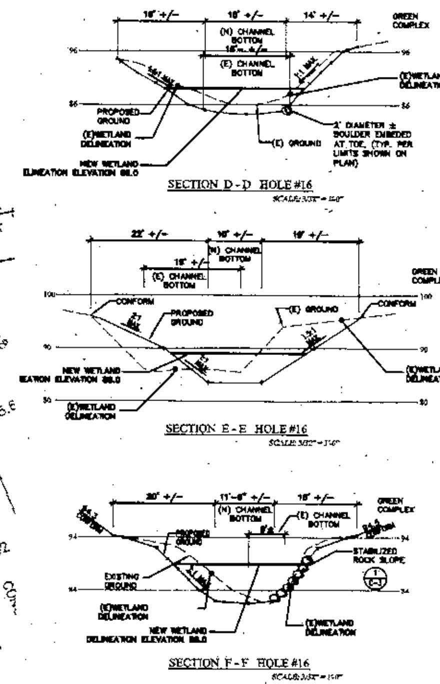
CLIFFORD BEIDTEL AND ASSOCIATES
CLIFFORD BEIDTEL, PE

Menlo Country Club - Creek Bank Restoration
2900 WOODSIDE ROAD
Woodside
SAN MATEO COUNTY
California

CONTENTS:
HOLE #3
ENVIRONMENTAL IMPACT EXHIBIT

DATE 07/29/19
SCALE AS NOTED
REVISIONS:
DRAWN J.G.
CHECKED C.B.
JOB No. 2018643
SHEET NO.
EXHIBIT A
OF 13 SHEETS





ENVIRONMENTAL IMPACT LAYOUT – HOLE #16 1/8"=1'-0"

IMPACT LOCATION #	LEGEND	IMPACT DESCRIPTION	TOTAL IMPACT AREA	TOTAL IMPACT VOLUME
1		EXCAVATION IN WATERS OF US (NATIVE SOIL)	1,826 SF	139 CY
2		FILL IN WATERS OF US (NATIVE SOIL)	1,250 SF	200 CY
3		FILL IN WATERS OF US (ROCK)	74 SF	7 CY
4		EXCAVATION IN WATERS OF THE STATE (NATIVE SOIL)	750 SF	125 CY
5		FILL IN WATERS OF THE STATE (ROCK)	163 SF	21 CY
6		FILL IN WATERS OF THE STATE (NATIVE SOIL)	361 SF	37 CY
7		TEMPORARY FILL IN WATERS OF THE STATE AND US (SAND BAGS)	56 SF	6 CY

Menlo Country Club - Creek Bank Restoration
2900 WOODSIDE ROAD
SAN MATEO COUNTY
Woodside California

CONTENTS: HOLE #16 ENVIRONMENT IMPACT EXHIBIT

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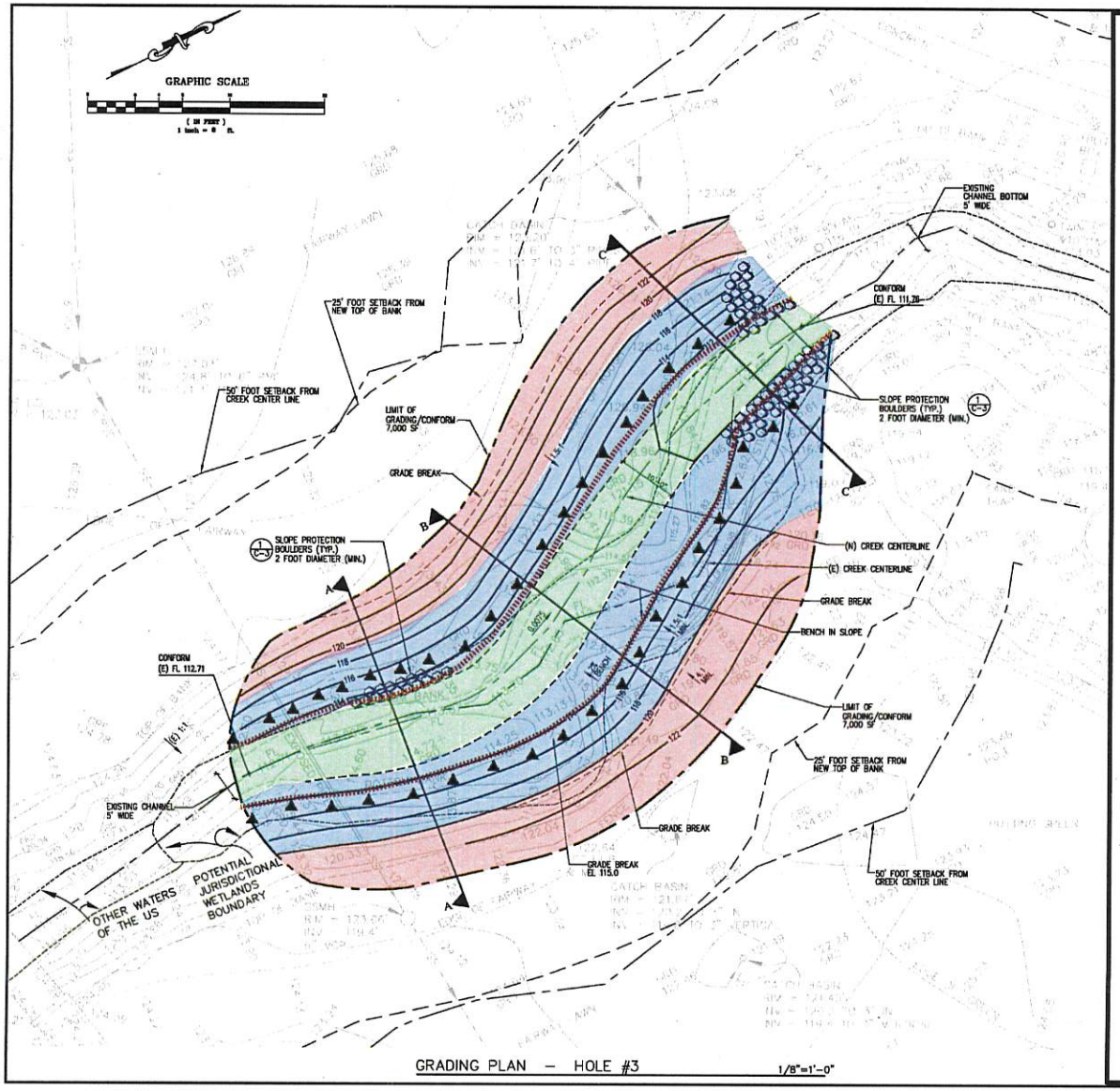
SCALE AS NOTED
REVISIONS:

DRAWN J.G.
CHECKED C.B.
JOB No. 2018643

SHEET NO. EXHIBIT B
OF 13 SHEETS



GRADING PLAN – HOLE #3 1/8"=1'-0"

Hole 3 Planting & Seeding Plan

Seed Mix 1, Zone 1

Species	lb/ac
Agrostis pallens, Diego bentgrass	5
Bromus carinatus, CA brome	8
Festuca idahoensis, Idaho fescue	6
Festuca microstachys, small fescue	4
Hordeum brachyantherum, meadow barley	6
Stipa pulchra, purple needlegrass	10

Planting & Seed Mix 2, Zone 2

Planting		
Species, Number	**Symbol**	**Container Type, Spacing, Symbol**
Salix exigua sandbar willow, 42	• • • • • •	pole cutting, 6' OC
Physocarpus capitatus Pacific ninebark, 40	▲	1-gal, 6' OC alternate with dogwood
Rubus ursinus CA blackberry, (927)		TB-5, 2' OC

Seed Mix Zone 2	

Seed Mix Zone 3

Species	Application rate lb/ac

CLIFFORD BECHTEL AND ASSOCIATES
CLIFFORD BECHTEL, PE
[redacted]

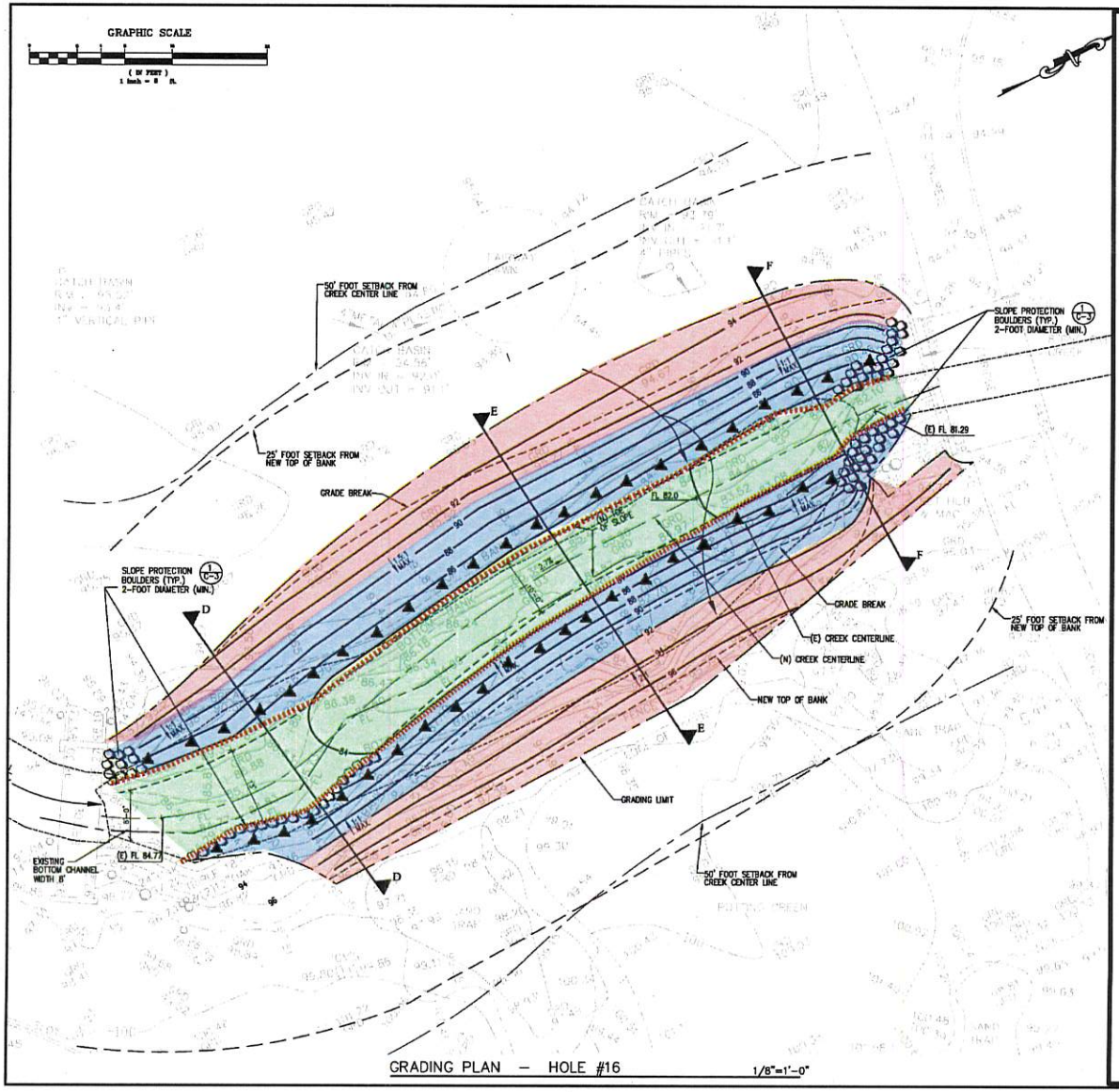
Menlo Country Club - Creek Bank Restoration
2900 WOODSIDE ROAD
Woodside SAN MATEO COUNTY California

Hole 3 Planting Plan

DATE 05/15/19
SCALE AS NOTED
REVISIONS:

DRAWN J.G.
CHECKED C.B.
JOB No. 2018643

L-1.0



GRADING PLAN – HOLE #16 1/8"=1'-0"

Hole 16 Planting & Seeding Plan

Seed Mix 1, Zone 1

Species	lb/ac
Agrostis pallens, Diego bentgrass	5
Bromus carinatus, CA brome	8
Festuca idahoensis, Idaho fescue	6
Festuca microstachys, small fescue	4
Hordeum brachyantherum, meadow barley	6
Stipa pulchra, purple needlegrass	10

Planting & Seed Mix 2, Zone 2

Planting		
Species, Number	**Symbol**	**Container Type, Spacing, Symbol**
Salix exigua sandbar willow, 54	▪▪▪▪▪▪	pole cutting, 6' OC
Physocarpus capitatus ninebark, 45	▲	1-gal, 6' OC
Rubus ursinus CA blackberry, (742)		TB-5, 2' OC

Seed Mix Zone 2	

Seed Mix Zone 3

Species	Application rate lb/ac

CLIFFORD BECHTEL AND ASSOCIATES
CLIFFORD BECHTEL, PE

Menlo Country Club - HOLE 16 CREEK STABILIZATION
2900 WOODSIDE ROAD
Woodside SAN MATEO COUNTY California

Hole 16 Planting Plan

DATE 05/15/19
SCALE AS NOTED
REVISIONS:
DRAWN J.G.
CHECKED C.B.
JOB No. 2018643

L-1.1