Permit Packet and Summary
Three Creeks Parkway Restoration Project
Brentwood, CA
April 22, 2020

Permit:	Lake and Streambed Alteration Agreement
Status:	Issued
Issued by:	California Department of Fish and Wildlife
Issued to:	Contra Costa County Flood Control and Water Conservation District
Issue date:	December 5, 2017
Valid until:	October 31, 2023
Contact:	Melissa Farinha, 707.944.5579, melissa.farinha@wildlife.ca.gov
Notes:	Operational Law Letter

Permit:	401 Water Quality Certification
Status:	Issued
Issued by:	Central Valley Regional Water Quality Control Board
Issued to:	Contra Costa County Flood Control and Water Conservation District
Issue date:	March 16, 2018
Valid until:	March 15, 2023
Contact:	Nicholas White, 916.464.4856, Nicholas.White@waterboards.ca.gov Elizabeth Lee, 916.464.4787, Elizabeth.Lee@waterboards.ca.gov
Notes:	

Permit:	404 Water Quality Certification
Status:	Issued
Issued by:	US Army Corps of Engineers, Sacramento District
Issued to:	Contra Costa County Flood Control and Water Conservation District
Issue date:	October 28, 2019
Valid until:	October 27, 2024
Contact:	Chandra Jenkins, 916.557.6652, Chandra.L.Jenkins@usace.army.mil
Notes:	Includes Section 106 Consultation, NMFS Concurrence Letter, USFWS review

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Permit:	Planning Survey Report/Certificate of Coverage
Issued by:	Contra Costa County (with East Contra Costa County Habitat Conservancy approval)
Issued to:	N/A
Issue date:	January 30, 2020
Valid until:	-
Contact:	Joanne Chiu, 925.674.7263, joanne.chiu@dcd.cccounty.us
Notes:	Includes Certificate of Coverage which is an internal document that the Contra Costa County Public Works/Flood Control District prepares that formalizes that the Conservancy has approved the PSR and that the Permittee/applicant will comply with the applicable HCP/NCCP requirements

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RESTORATION DESIGN GROUP, INC

BERKELEY
2332 5th Street, Suite C
Berkeley
California 94710
510.644.2798

MOUNT SHASTA
1808 Deetz Road
Mount Shasta
California 96067

MEDFORD
1495 S Oakdale Avenue
Medford
Oregon 97501
541.238.2812

RestorationDesignGroup.com

Permit:	Encroachment Permit
Issued by:	East Bay Regional Park District
Issued to:	Will be issued to selected contractor
Issue date:	Prior to construction
Valid until:	tbd
Contact:	Nate Luna, 510.544.2564, nluna@ebparks.org
Notes:	Draft of permit included in this packet. County contact information will be removed and permit will be updated with contractor information prior to issuance.

Permit:	Combined Grading/Building Permit
Issued by:	City of Brentwood
Issued to:	Will be issued to selected contractor
Issue date:	Prior to construction
Valid until:	tbd
Contact:	Jack Dhaliwal, 925.516.5128, jdhaliwal@brentwoodca.gov
Notes:	

Permit:	Certification of Consistency
Issued by:	Delta Stewardship Council
Issued to:	Contra Costa County Flood Control and Water Conservation District
Issue date:	January 24, 2020
Valid until:	January 24, 2024
Contact:	Daniel Constable, 916.322.9338, daniel.constable@deltacouncil.ca.gov Ron Melcer Jr., 916.284.1619, Ronald.Melcer@deltacouncil.ca.gov
Notes:	Additional attachments available at: https://coveredactions.deltacouncil.ca.gov/profile_summary.aspx?c=24ccfb58-eb74-4738-a96a-83f3c79d945b

Lake and Streambed Alteration Agreement (CDFW)

California Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
7329 Silverado Trail
Napa, CA 94558
(707) 944-5500
www.wildlife.ca.gov

***EDMUND G. BROWN, Jr.**, Governor*
CHARLTON H. BONHAM, Director

December 5, 2017

Mike Carlson
Contra Costa County Flood Control and Water Conservation District
255 Glacier Drive
Martinez, CA 94533

Dear Mr. Carlson:

Notification of Lake or Streambed Alteration, Notification No. 1600-2017-0423-R3, Three Creeks Restoration Project impacting Marsh Creek, tributary to , Big Break

The California Department of Fish and Wildlife (CDFW) had until December 4, 2017 to submit a draft Lake or Streambed Alteration Agreement (Agreement) to you or inform you that an Agreement is not required. CDFW did not meet that date. As a result, by law, you may now complete the project described in your notification without an Agreement.

Please note that pursuant to Fish and Game Code section 1602, subdivision (a)(4)(D), if you proceed with this project, it must be the same as described and conducted in the same manner as specified in the notification and any modifications to that notification received by CDFW in writing prior to December 04, 2017. This includes completing the project within the proposed term and seasonal work period and implementing all avoidance and mitigation measures to protect fish and wildlife resources specified in the notification. If the term proposed in your notification has expired, you will need to re-notify CDFW before you may begin your project. Beginning or completing a project that differs in any way from the one described in the notification may constitute a violation of Fish and Game Code section 1602.

Also note that while you are entitled to complete the project without an Agreement, you are still responsible for complying with other applicable local, state, and federal laws. These include, but are not limited to, the state and federal Endangered Species Acts and Fish and Game Code section 5650 (water pollution) and section 5901 (fish passage).

Finally, if you decide to proceed with your project without an Agreement, you must have a copy of this letter and your notification with all attachments available at all times at the work site.

If you have any questions regarding this letter, please contact Melissa Farinha, Senior Environmental Scientist (Supervisory) at (707) 944-5579 or by email at melissa.farinha@wildlife.ca.gov .

Sincerely,

Randi Adair

for James Starr, Environmental Program Manager

cc: Restoration Design Group
Rich Walkling
rich@rdgmail.com

California Department of Fish and Wildlife
Lieutenant Garrett
Warden Jacobsen

FOR DEPARTMENT USE ONLY				
Date Received	Amount Received	Amount Due	Date Complete	Notification No.
9-5-17	$ 5,000-	$		1600-2017-0473-R3

Melissa Farinha

Lt. Clint Garrett
WLO- Jessica Jacobsen

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND WILDLIFE

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

Complete EACH field, unless otherwise indicated, following the enclosed instructions and submit ALL required enclosures. Attach additional pages, if necessary.

Fish & Wildlife
SEP 05 2017
Napa

1. APPLICANT PROPOSING PROJECT

Name	Mike Carlson		
Business/Agency	Contra Costa Country Flood Control and Water Conservation District		
Street Address	255 Glacier Drive		
City, State, Zip	Martinez, CA 94553		
Telephone	925.313.2000	Fax	
Email	mike.carlson@pw.cccounty.us		

2. CONTACT PERSON (*Complete only if different from applicant*)

Name	Rich Walkling, Restoration Design Group		
Street Address	2612 8th Street, Suite B		
City, State, Zip	Berkeley, CA 94710		
Telephone	510.644.2798 x5	Fax	510.644.2799
Email	rich@rdgmail.com		

3. PROPERTY OWNER (*Complete only if different from applicant*)

Name			
Street Address			
City, State, Zip			
Telephone		Fax	
Email			

4. PROJECT NAME AND AGREEMENT TERM

A. Project Name	Three Creeks Parkway Restoration Project			
B. Agreement Term Requested	☑ Regular (*5 years or less*) ☐ Long-term (*greater than 5 years*)			
C. Project Term		D. Seasonal Work Period		E. Number of Work Days
Beginning (*year*)	Ending (*year*)	Start Date (*month/day*)	End Date (*month/day*)	
2018	2023	5/1	10/31	140

5. AGREEMENT TYPE

Check the applicable box. If box B, C, D, or E is checked, complete the specified attachment.		
A.	☑ Standard *(Most construction projects, excluding the categories listed below)*	
B.	☐ Gravel/Sand/Rock Extraction (*Attachment A*)	*Mine I.D. Number:* _____
C.	☐ Timber Harvesting (*Attachment B*)	THP *Number:* _____
D.	☐ Water Diversion/Extraction/Impoundment (*Attachment C*)	*SWRCB Number:* _____
E.	☐ Routine Maintenance (*Attachment D*)	
F.	☐ CDFW Fisheries Restoration Grant Program (FRGP)	*FRGP Contract Number* _____
G.	☐ Master	
H.	☐ Master Timber Harvesting	

6. FEES

Please see the current fee schedule to determine the appropriate notification fee. Itemize each project's estimated cost and corresponding fee. ***Note: The Department may not process this notification until the correct fee has been received.***

	A. Project	B. Project Cost	C. Project Fee
1	Three Creeks Parkway Restoration Project	>$350,000	$5,000
2			
3			
4			
5			
		D. Base Fee *(if applicable)*	
		E. TOTAL FEE ENCLOSED	$5,000

7. PRIOR NOTIFICATION OR ORDER

A. Has a notification previously been submitted to, or a Lake or Streambed Alteration Agreement previously been issued by, the Department for the project described in this notification?

☐ Yes (*Provide the information below*) ☑ No

Applicant: _____ Notification Number: _____ Date: _____

B. Is this notification being submitted in response to an order, notice, or other directive ("order") by a court or administrative agency (including the Department)?

☑ No ☐ Yes (*Enclose a copy of the order, notice, or other directive. If the directive is not in writing, identify the person who directed the applicant to submit this notification and the agency he or she represents, and describe the circumstances relating to the order.*)

☐ *Continued on additional page(s)*

8. PROJECT LOCATION

A. Address or description of project location.
(Include a map that marks the location of the project with a reference to the nearest city or town, and provide driving directions from a major road or highway)

From southbound California Highway 4, turn left onto Balfour Road in Brentwood. Travel eastbound one mile to Minnesota Avenue. Take a left onto Minnesota Avenue. Travel 0.5 miles to Central Boulevard. Turn right onto Central Boulevard. Travel 0.3 miles to Marsh Creek. Immediately after crossing the Central Boulevard Bridge over Marsh Creek, turn left into the Marsh Creek Staging Area. The project site is accessible by the Marsh Creek Regional Trail. It extends approximately 1,000 feet upstream from Central Boulevard (to Dainty Aveune) and 3,000 feet downstream to just upstream of the railroad tracks.

See map in attachment - 8. Project Location

☑ *Continued on additional page(s)*

B. River, stream, or lake affected by the project.	Marsh Creek
C. What water body is the river, stream, or lake tributary to?	Western Delta (5 miles downstream)
D. Is the river or stream segment affected by the project listed in the state or federal Wild and Scenic Rivers Acts?	☐ Yes ☑ No ☐ Unknown
E. County	Contra Costa

F. USGS 7.5 Minute Quad Map Name	G. Township	H. Range	I. Section	J. ¼ Section
Brentwood				

☐ *Continued on additional page(s)*

K. Meridian (*check one*) ☐ Humboldt ☑ Mt. Diablo ☐ San Bernardino

L. Assessor's Parcel Number(s)

Project: 017-17C-004, 017-20C-XXX Staging: 017-210-004, 017-201-038, 017-260-080, 017-280-113, 017-110-011, 017-170-008, 017-170-007

☐ *Continued on additional page(s)*

M. Coordinates (*If available, provide at least latitude/longitude or UTM coordinates and check appropriate boxes*)

Latitude/Longitude	*Latitude:* 37.938389	*Longitude:* -121.707037	
	☐ Degrees/Minutes/Seconds	☑ Decimal Degrees	☐ Decimal Minutes
UTM	*Easting:*	*Northing:*	☐ Zone 10 ☐ Zone 11
Datum used for Latitude/Longitude or UTM	☐ NAD 27	☑ NAD 83 or WGS 84	

9. PROJECT CATEGORY AND WORK TYPE *(Check each box that applies)*

PROJECT CATEGORY	NEW CONSTRUCTION	REPLACE EXISTING STRUCTURE	REPAIR/MAINTAIN EXISTING STRUCTURE
Bank stabilization – bioengineering/recontouring	✓	☐	☐
Bank stabilization – rip-rap/retaining wall/gabion	✓	☐	☐
Boat dock/pier	☐	☐	☐
Boat ramp	☐	☐	☐
Bridge	☐	☐	☐
Channel clearing/vegetation management	☐	☐	☐
Culvert	☐	☐	☐
Debris basin	☐	☐	☐
Dam	☐	☐	☐
Diversion structure – weir or pump intake	☐	☐	☐
Filling of wetland, river, stream, or lake	☐	☐	☐
Geotechnical survey	☐	☐	☐
Habitat enhancement – revegetation/mitigation	✓	☐	☐
Levee	☐	☐	☐
Low water crossing	☐	☐	☐
Road/trail	✓	☐	☐
Sediment removal – pond, stream, or marina	☐	☐	☐
Storm drain outfall structure	☐	☐	☐
Temporary stream crossing	✓	☐	☐
Utility crossing : Horizontal Directional Drilling	☐	☐	☐
Jack/bore	☐	☐	☐
Open trench	☐	☐	☐
Other *(specify)*:	☐	☐	☐

10. PROJECT DESCRIPTION

A. Describe the project in detail. Photographs of the project location and immediate surrounding area should be included.

- Include any structures (e.g., rip-rap, culverts, or channel clearing) that will be placed, built, or completed in or near the stream, river, or lake.
- Specify the type and volume of materials that will be used.
- If water will be diverted or drafted, specify the purpose or use.

Enclose diagrams, drawings, plans, and/or maps that provide all of the following: site specific construction details; the dimensions of each structure and/or extent of each activity in the bed, channel, bank or floodplain; an overview of the entire project area (i.e., "bird's-eye view") showing the location of each structure and/or activity, significant area features, and where the equipment/machinery will enter and exit the project area.

See attachment - 10. Project Description

☑ *Continued on additional page(s)*

B. Specify the equipment and machinery that will be used to complete the project.

Actual equipment to be determined by the bid award contractor. Equipment will likely include: long arm excavators, backhoes, loaders, and a variety of small equipment.

☐ *Continued on additional page(s)*

C. Will water be present during the proposed work period (specified in box 4.D) in the stream, river, or lake (specified in box 8.B).	☑ Yes ☐ No (*Skip to box 11*)
D. Will the proposed project require work in the wetted portion of the channel?	☑ Yes (*Enclose a plan to divert water around work site*) ☐ No

11. PROJECT IMPACTS

A. Describe impacts to the bed, channel, and bank of the river, stream, or lake, and the associated riparian habitat. Specify the dimensions of the modifications in length (linear feet) and area (square feet or acres) and the type and volume of material (cubic yards) that will be moved, displaced, or otherwise disturbed, if applicable.

See attachment - 11A. Project Impacts

☑ *Continued on additional page(s)*

B. Will the project affect any vegetation? ☑ Yes (*Complete the tables below*) ☐ No

Vegetation Type	Temporary Impact	Permanent Impact
Ruderal grassland	Linear feet: 4,050 Total area: 7 acres	Linear feet: _____ Total area: _____
	Linear feet: _____ Total area: _____	Linear feet: _____ Total area: _____

Tree Species	Number of Trees to be Removed	Trunk Diameter (range)
non-native ornamental species	3	6"-18"

☐ *Continued on additional page(s)*

C. Are any special status animal or plant species, or habitat that could support such species, known to be present on or near the project site?

☑ Yes *(List each species and/or describe the habitat below)* ☐ No ☐ Unknown

See attachment - 11C. Special Status Species

☐ *Continued on additional page(s)*

D. Identify the source(s) of information that supports a "yes" or "no" answer above in Box 11.C.

Wood Biological, 2016. Biological Assessment for the Three Creeks Restoration Project

☐ *Continued on additional page(s)*

E. Has a biological study been completed for the project site?

☑ Yes (*Enclose the biological study*) ☐ No

Note: A biological assessment or study may be required to evaluate potential project impacts on biological resources.

F. Has a hydrological study been completed for the project or project site?

☑ Yes (*Enclose the hydrological study*) ☐ No

Note: A hydrological study or other information on site hydraulics (e.g., flows, channel characteristics, and/or flood recurrence intervals) may be required to evaluate potential project impacts on hydrology.

12. MEASURES TO PROTECT FISH, WILDIFE, AND PLANT RESOURCES

A. Describe the techniques that will be used to prevent sediment from entering watercourses during and after construction.

See attachment 12A. Techniques to Prevent Sediment from Entering Watercourses

☑ *Continued on additional page(s)*

B. Describe project avoidance and/or minimization measures to protect fish, wildlife, and plant resources.

See attachment 12B. Project Avoidance and/or Minimization Measures

☑ *Continued on additional page(s)*

C. Describe any project mitigation and/or compensation measures to protect fish, wildlife, and plant resources.

N/A - Project is designed to be a self-mitigating restoration project.

☐ *Continued on additional page(s)*

13. PERMITS

List any local, state, and federal permits required for the project and check the corresponding box(es). Enclose a copy of each permit that has been issued.

A. Army Corps 404 ☑ Applied ☐ Issued

B. RWQCB 401 ☑ Applied ☐ Issued

C. East County HCP - Planning Survey Report ☑ Applied ☐ Issued

D. Unknown whether ☐ local, ☐ state, or ☐ federal permit is needed for the project. (*Check each box that applies*)

☐ *Continued on additional page(s)*

14. ENVIRONMENTAL REVIEW

A. Has a draft or final document been prepared for the project pursuant to the California Environmental Quality Act (CEQA), National Environmental Protection Act (NEPA), California Endangered Species Act (CESA) and/or federal Endangered Species Act (ESA)?

☑ Yes (*Check the box for each CEQA, NEPA, CESA, and ESA document that has been prepared and enclose a copy of each*)

☐ No (*Check the box for each CEQA, NEPA, CESA, and ESA document listed below that will be or is being prepared*)

☐ Notice of Exemption	☑ Mitigated Negative Declaration	☐ NEPA document (*type*): _____
☐ Initial Study	☐ Environmental Impact Report	☐ CESA document (*type*): _____
☐ Negative Declaration	☐ Notice of Determination (*Enclose*)	☐ ESA document (*type*): _____
☐ THP/ NTMP	☐ Mitigation, Monitoring, Reporting Plan	

B. State Clearinghouse Number (*if applicable*)	2016082008		
C. Has a CEQA lead agency been determined?	☑ Yes (*Complete boxes D, E, and F*)	☐ No (*Skip to box 14.G*)	
D. CEQA Lead Agency	Contra Costa County Department of Conservation and Development		
E. Contact Person	Claudia Gemberling	F. Telephone Number	925-313-2192

G. If the project described in this notification is part of a larger project or plan, briefly describe that larger project or plan.

☐ *Continued on additional page(s)*

H. Has an environmental filing fee (Fish and Game Code section 711.4) been paid?

☐ Yes (*Enclose proof of payment*) ☑ No (*Briefly explain below the reason a filing fee has not been paid*)

Contra Costa County has not yet issued the NOD. When it does, it will pay the environmental filing fee and submit proof of payment to CDFW.

Note: If a filing fee is required, the Department may not finalize a Lake or Streambed Alteration Agreement until the filing fee is paid.

15. SITE INSPECTION

Check one box only.

☑ In the event the Department determines that a site inspection is necessary, I hereby authorize a Department representative to enter the property where the project described in this notification will take place at any reasonable time, and hereby certify that I am authorized to grant the Department such entry.

☐ I request the Department to first contact (*insert name*) _____ at (*insert telephone number*) _____ to schedule a date and time to enter the property where the project described in this notification will take place. I understand that this may delay the Department's determination as to whether a Lake or Streambed Alteration Agreement is required and/or the Department's issuance of a draft agreement pursuant to this notification.

16. DIGITAL FORMAT

Is any of the information included as part of the notification available in digital format (i.e., CD, DVD, etc.)?

☑ Yes (Please enclose the information via digital media with the completed notification form)

☐ No

17. SIGNATURE

I hereby certify that to the best of my knowledge the information in this notification is true and correct and that I am authorized to sign this notification as, or on behalf of, the applicant. I understand that if any information in this notification is found to be untrue or incorrect, the Department may suspend processing this notification or suspend or revoke any draft or final Lake or Streambed Alteration Agreement issued pursuant to this notification. I understand also that if any information in this notification is found to be untrue or incorrect and the project described in this notification has already begun, I and/or the applicant may be subject to civil or criminal prosecution. I understand that this notification applies only to the project(s) described herein and that I and/or the applicant may be subject to civil or criminal prosecution for undertaking any project not described herein unless the Department has been separately notified of that project in accordance with Fish and Game Code section 1602 or 1611.

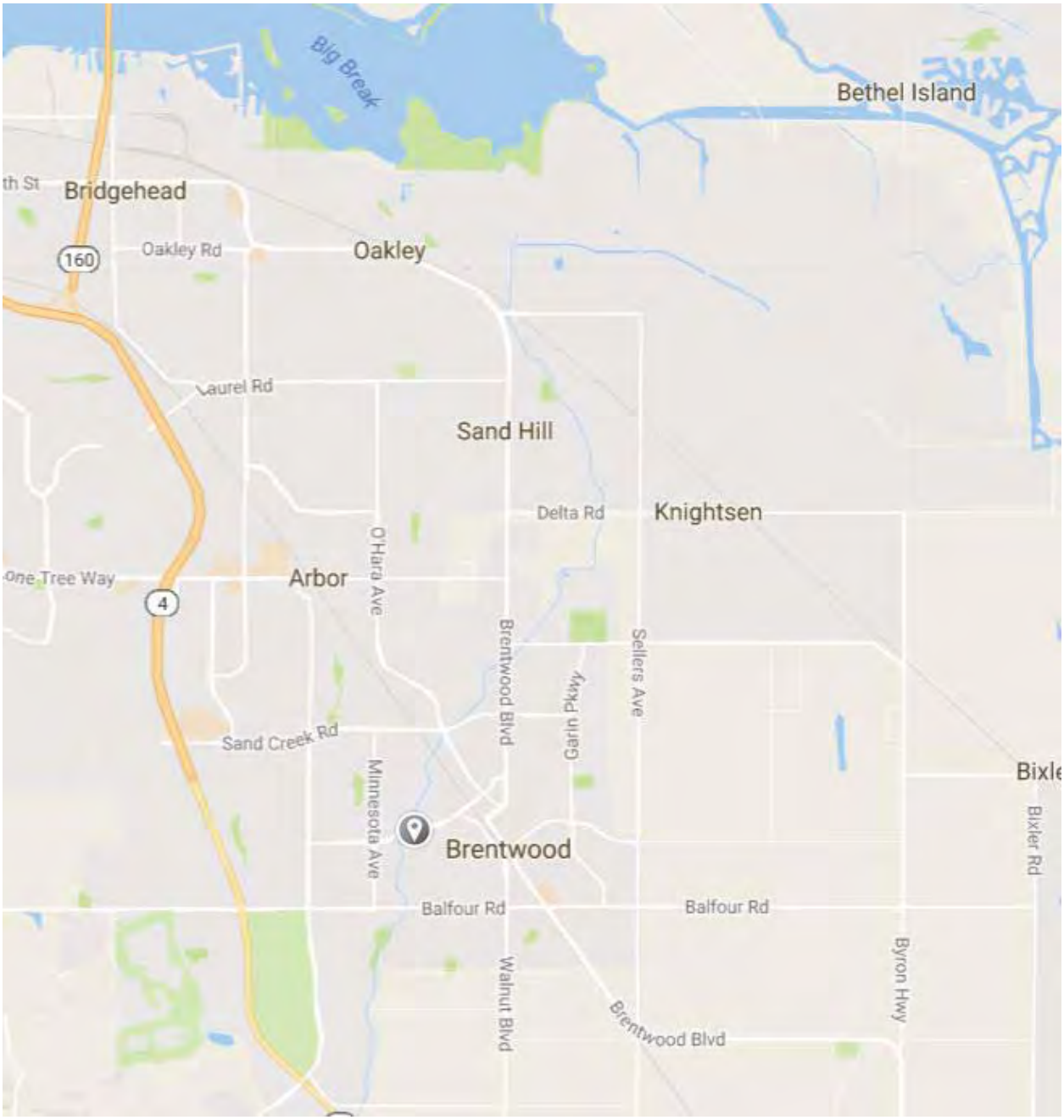
Signature of Applicant or Applicant's Authorized Representative

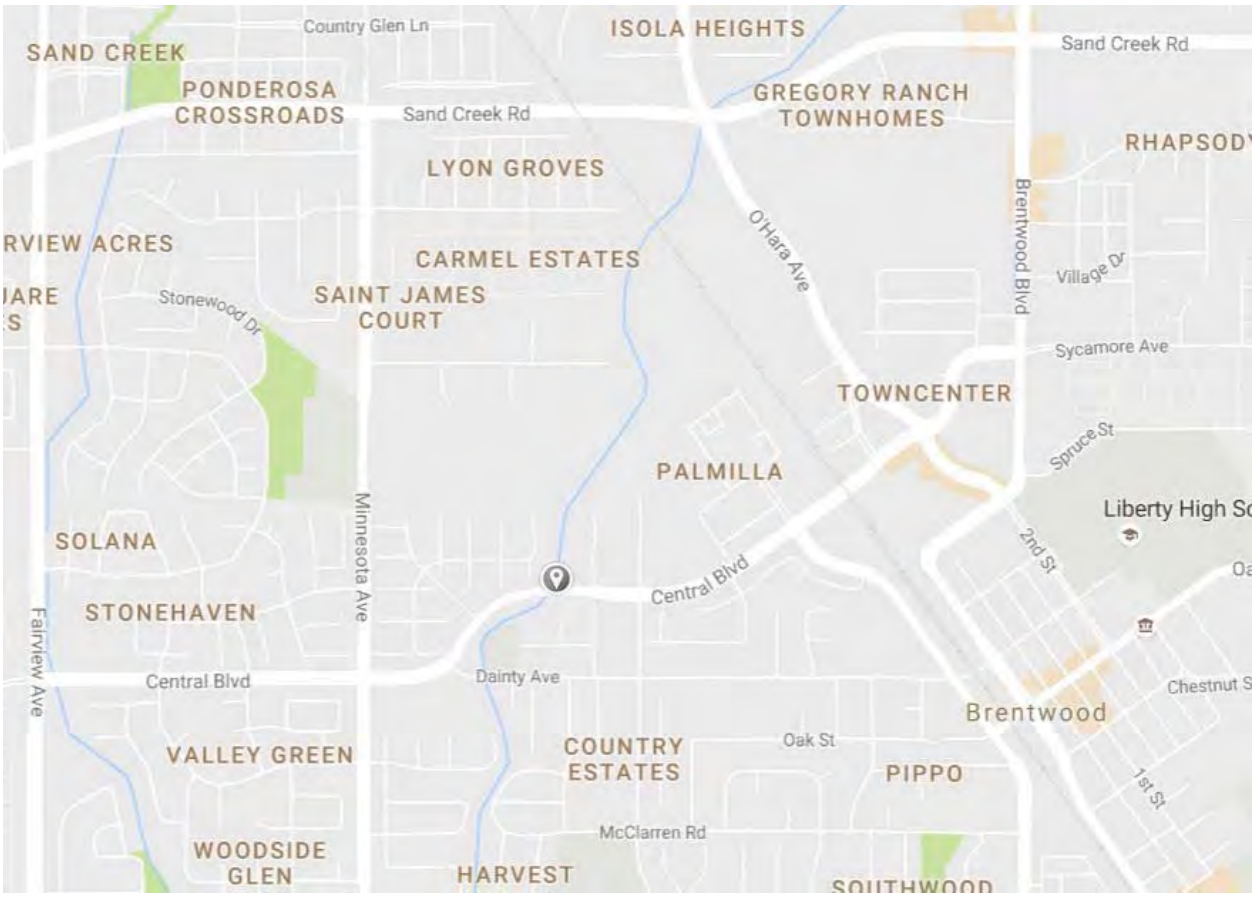
Date 8/31/17

for Mike Carlson

Print Name

8. Project Location




Country Glen Ln
ISOLA HEIGHTS
Sand Creek Rd
SAND CREEK
PONDEROSA CROSSROADS
Sand Creek Rd
GREGORY RANCH TOWNHOMES
RHAPSOD
LYON GROVES
RVIEW ACRES
CARMEL ESTATES
O'Hara Ave
Brentwood Blvd
Village Dr
Stonewood Dr
SAINT JAMES COURT
Sycamore Ave
TOWNCENTER
Spruce St
PALMILLA
Liberty High Sc
SOLANA
Minnesota Ave
2nd St
Central Blvd
STONEHAVEN
Fairview Ave
Central Blvd
Dainty Ave
Chestnut S
Brentwood
VALLEY GREEN
COUNTRY ESTATES
Oak St
PIPPO
1st St
McClarren Rd
WOODSIDE GLEN
HARVEST

10. Project Description

The Three Creeks Parkway Restoration project is a multi-benefit flood control and creek restoration project. It proposes to improve flood conveyance capacity and restore ecological function along an approximately 4,000 linear feet section of Marsh Creek located in Brentwood, California by widening the channel with a floodplain bench and planting with native vegetation. When implementation is complete, the project site will include 2 acres of frequently inundated floodplain/woody riparian vegetation, 2.9 acres of open stream channel, 4.6 acres of grasslands and native scrub, and 1 acre of concrete, asphalt, or decomposed granite paving associated with the adjacent East Bay Regional Park District (EBRPD) Marsh Creek Trail. The project will also enhance habitat and recreation within the watershed.

The project site is located along Marsh Creek in the City of Brentwood (Figure 1). The project is divided into three reaches (Figures 2 through 8):

- Upper Reach which is the upper 1,600 linear-foot section of the creek from near Dainty Avenue Bridge to Deer Creek confluence (Figures 4 and 5)
- Middle Reach which is the 800 linear-foot section of the creek between Deer Creek confluence and Sand Creek confluence (Figures 6 and 7)
- Lower Reach which is the 1,600 linear-foot section of the creek from the Sand Creek confluence (to the pedestrian bridge near the railroad tracks (Figures 7 and 8)

The proposed project has most of the permanent right of way required for construction. However, as indicated in Table 1 below, temporary construction easements or small permanent takes may be needed from the City of Brentwood and other property owners in order to access adjacent parcels during construction and maintenance in the future. Contra Costa County's Real Estate division will obtain all necessary agreements before project advertisement. Construction is anticipated to begin late spring of 2018. Excavation and grading activities would occur during the dry season (June to October) with plant restoration occurring afterwards (November to December).

Table 1 - Project Data

Element	Upper Reach	Middle Reach	Lower Reach
Length	1,600 feet	800 feet	1,600 feet
Total Area Disturbed	2.1 acres	1.0 acre	4.25 acres
Soil Excavation	10,500 cu yards	2,500 cu yards	13,000 cu yards
Floodplain or bench width	Avg: 26 ft / Max: 56 ft	Avg: 16 ft / Max: 22 ft	Avg: 20 ft / Max: 38 ft
Bench slopes to top of bank	2:1 or 3:1	2:1 or 3:1	3:1 or less typical, 2:1 max.
Temporary staging/access areas[1]	Within creek parcels (017-17C-004, 017-20C-XXX) or adjacent City-owned parcel (017-210-004, 017-201-038, 017-260-080, 017-280-113)[2]	Within creek parcel (017-17C-004) or adjacent parcel (017-110-011)[2]	Within creek parcels (017-17C-004) or adjacent private parcels (017-170-008, 017-170-007)
Permanent access/maintenance easements[1]	017-260-080 017-280-113 017-201-038 017-210-029	017-110-011	017-170-007 017-170-008

[1] Some or all of the non-County-owned parcels would potentially require a temporary construction easement for access and staging and/or permanent easement for access and/or maintenance. Contra Costa County's Real Estate division will obtain all necessary agreements before project advertisement.

[2] Parcel numbers and ownership information shown on Figures 4, 6, and 8.

Channel Widening

The main function of expanding the channel is to create enough conveyance capacity to allow for the planting of woody riparian vegetation (trees) while also safely conveying large flood flows. The project would increase the cross-sectional area of the stream channel by excavating 26,000 cubic yards (10,500 for upper, 2,500 for middle, and 13,000 for lower reach,) of earth along approximately 4,000 linear feet of both banks of Marsh Creek to create new floodplain.

Upper Reach

Photo 1: Upper Reach looking upstream (south) with Marsh Creek Regional Trail on left (river right) and Central Blvd on right (river left). Dashed red line indicates estimated OHWM. Note: Orange fencing is in place due to road work on adjacent Central Boulevard work. Fencing is not associated with the Three Creeks Parkway Restoration project.

The Upper Reach is approximately 1,600 feet of the channel between just north of Dainty Avenue Bridge and Deer Creek confluence. The reach is constrained by development on both sides and channel widening in this section would include excavation of both banks to construct a number of floodplain benches on both sides of the creek of varying widths (average 26 ft, maximum 56 ft) with slopes ranging from 2:1 to 3:1 (Figure 4). The benches would be located above the ordinary high water mark (OHWM). The construction of the floodplain benches would satisfy the Flood Control District's freeboard requirements for an earthen channel. Figure 5 presents existing and modified creek cross-sections for this reach. Once the benches are constructed, permanent slope protection such as erosion control matting or other biotechnical methods would be installed on all benches and slopes for slope stabilization and to prevent long-term effects of erosion. The selected erosion control material would provide soil stabilization and promote vegetation growth.

Widening the channel cross-section is expected to decrease velocities and erosion potential. However, detailed hydraulic modeling that will be completed to inform the final design may indicate that some

localized bank armoring is necessary where the expanded channel will taper down to the existing channel at the downstream project boundary.

In one location along the left bank of the Upper Reach (above photo), the project would require a retaining wall along approximately 250 feet on the left (west) bank due to the presence of Central Boulevard in Brentwood that will extend a maximum of 7 feet above ground. The retaining wall would rise from the back of the floodplain and would not touch the low flow channel.

The project also includes modification of grouted rock at the Deer Creek confluence (Photo 2). Currently, grouted rock extends all the way to the top of the flood control channel. The upper part (above the OHWM) will be removed during grading as part of widening the new floodplain and replaced with new grouted riprap that matches the widened channel.

Photo 2: Marsh Creek and Deer Creek confluence looking west up Deer Creek. Dashed red line indicates estimated OHWM.

Rough grading and earthmoving activities along the Upper Reach would take place over a period of approximately 2 weeks during the dry season. Construction equipment to be used would include tractors, backhoes, excavators, graders, and dump trucks. Staging for the Upper Reach portion of the project would be within the Flood Control District-owned parcels or on a City-owned parcel to the east of the creek south of Central Boulevard. Approximately 5,500 cubic yards of soil excavated for channel expansion would require disposal. However, the project sponsors are working with the landowner of the Griffith property adjacent to the west side of the middle reach to accept and store excavated materials on its property. If that is not possible, excavated materials would be temporarily stored in the staging area and later removed for use on other nearby land development projects or would be off-hauled to the Dutch Slough project site in Oakley where it would be used as upland fill. Other construction activities along this reach would include revegetation and planting, as well as the relocation of the regional trail.

Middle Reach

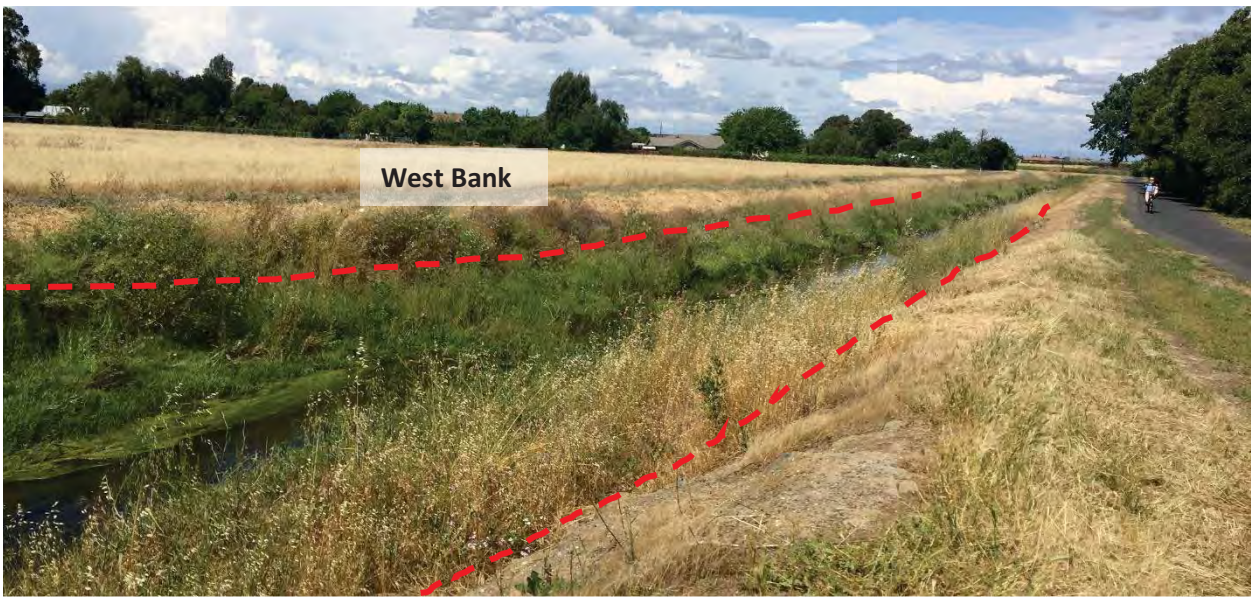


Photo 3: Middle Reach looking downstream (north) with Marsh Creek Regional Trail on right (river right). Dashed red line indicates estimated OHWM.

The Middle Reach, which is about 800 feet in length, would be widened along the west bank as part of the proposed project. As the Middle Reach is also constrained, channel widening would involve excavation of both banks to construct a number of floodplain benches of varying widths (average 16 ft, maximum 22 ft) as shown in Figure 6, with slopes ranging from 2:1 to 3:1. The benches would be located above the OHWM. The construction of the floodplain benches would satisfy the Flood Control District's freeboard requirements for an earthen channel. Figure 7 presents existing and modified creek cross-sections for this reach.

Rough grading and earthmoving activities along the Middle Reach would also take place over a period of approximately 2 weeks during the dry season. Construction equipment to be used would include tractors, backhoes, excavators, graders, and dump trucks. Staging for the Middle Reach portion of the project would take place on the Flood Control District-owned parcels that contain the Middle Reach of the creek or the adjacent property to the west. Approximately 2,500 cubic yards of spoils excavated for channel expansion would require disposal. Similar to the Upper Reach, the project sponsors are working with the landowner of the Griffith property adjacent to the west side of the middle reach to accept and store excavated materials on its property. If that is not possible, excavated materials would be temporarily stored in the staging area and later removed for use on other nearby land development projects or would be off-hauled to the Dutch Slough project site in Oakley where it would be used as upland fill. Other construction activities along this reach would include revegetation and planting, as well as the relocation of the regional trail.

Lower Reach

Photo 4: Lower Reach looking downstream (north) with Marsh Creek Regional Trail on right (river right). Dashed red line indicates estimated OHWM.

The Lower Reach, which is about 1,600 feet in length, is less constrained and more substantial widening of the channel is planned for this area. The project would excavate the east (right) bank of the creek down to the OHWM to create a new floodplain (average 20 ft, maximum 38 ft) with slopes typically 3:1 or less, but no more than 2:1 as shown in Figure 8. Figure 7 presents existing and modified creek cross-sections for this reach.

To prevent weathering and erosion of slopes, bio-technical forms of permanent slope would be installed, and the material would provide soil stabilization and promote vegetation growth.

The project also includes modification of grouted rock at the Sand Creek confluence (Photo 5). Currently, grouted rock extends all the way to the top of the flood control channel. The upper part (above the OHWM) will be removed during grading as part of widening the new floodplain and replaced with new grouted riprap to match the widened channel.

Photo 5: Marsh Creek and Sand Creek confluence looking west up Sand Creek. Dashed red line indicates estimated OHWM.

Rough grading of the Lower Reach improvements would take place over a period of approximately 4 weeks during the dry season. Staging for the Lower Reach portion of the project would take place on the Flood Control District-owned parcels containing the creek or the adjacent vacant private land parcel. Construction equipment to be used would include tractors, backhoes, excavators, graders, and dump trucks. Approximately 13,000 cubic yards of spoils excavated for channel expansion would require disposal. Similar to the other two reaches, the project sponsors are working with the landowner of the Griffith property adjacent to the west side of the middle reach to accept and store excavated materials on its property. If that is not possible, excavated materials would be temporarily stored in the staging area and later removed for use on other nearby land development projects or would be off-hauled to the Dutch Slough project site in Oakley where it would be used as upland fill. Other construction activities along this reach would include revegetation and planting.

Modification of Water Quality Basin in Lower Reach

Photo 6: Water quality basin looking upstream (south) with County Flood Control District maintenance road berm on left between basin and Lower Reach of Marsh Creek.

The project sponsors are evaluating options for modifying a water quality (WQ) basin adjacent to the downstream end of the project. The basin runs parallel to the project for approximately 500 feet and modification can improve flood conveyance and allow for increased restoration planting.

The existing water quality basin is intended to treat runoff from 0.78 acres of the adjacent Carmel Estates subdivision and meet C.3 guidelines of the East Contra Costa Municipal Storm Water Permit. Which alternative the project selects will be based on input from the permitting agencies, the City of Brentwood, and the Carmel Estates Home Owners Association. Each scenario will continue to meet or exceed the water quality and water retention requirements required of the water quality basin.

Please see the *Carmel Estates Water Quality Basin Alternatives* memo included in Attachment A for a more detailed discussion of the alternatives.

High Berm Alternative

The High Berm Alternative will maintain the existing WQ Basin and lower the berm separating the basin from Marsh Creek. The High Berm is exactly what is in the 50% construction documents for the Three Creeks Project. It maintains the same volume as the existing basin but reduces the facility's length and increases the width to make a more efficient volume.

This will increase the Marsh Creek floodplain and flow area during larger storm events. The existing function of the WQ basin would be preserved. However, it would flood more frequently depending on the final design height of the remaining berm separating the basin from the creek. Alternative A is also shown in the 50% plans. Cross sections are included on Sheet L-3.9 (cross sections 331+00 through 336+00). See High Berm Alternative figure in *Carmel Estates Water Quality Basin Alternatives* memo.

Low Berm Alternative

The Low Berm alternative is similar to the High Berm alternative except that it lowers the berm to just above the 2-yr event. See Low Berm Alternative figure in *Carmel Estates Water Quality Basin Alternatives* memo.

Riparian/Wetland Alternative

The Riparian/Wetland converts the basin to a tributary channel. This scenario replaces the existing function of the WQ basin with 400 LF of new tributary channel and riparian habitat. The advantage of this scenario is that it creates a riparian system that does not need to be maintained as a static green infrastructure. This would likely require less maintenance in the long term. The constraint of this system is demonstrating that the restored tributary channel maintains or improves upon the function of the existing WQ Basin. See Riparian/Wetland Alternative figure in *Carmel Estates Water Quality Basin Alternatives* memo.

Low-Flow Channel Modifications

The existing low-flow channel within project limits is engineered with rock grade control structures and banks. The existing, engineered channel has proven stable over the last 50 years and the rock grade control structures create a sequence of pools and riffles that provide some habitat for aquatic species. The excavation for floodplain widening typically will not touch the low-flow channel below the OHWM. The new floodplain would be graded to inundate during the storm events with the low-flow channel continuing to function much as it does today.

Some work in the low-flow channel may be performed. It would include creation of instream habitat in the low-flow channel in the Lower Reach by placing rootwads and rock slope protection in some portions of the low-flow channel in the Upper and Middle Reaches for bank stabilization around critical infrastructure.

Woody debris installation would be in the form of eight rootwads, each roughly 20 feet long. Each rootwad would require the excavation of roughly nine cubic yards of material for a total of 72 cubic yards. Much of this material would be refilled into the rootwad trenches with the remained hauled off site. Installation will be by excavator.

In the event that the project implements modifications to the low-flow channel and there is water in the channel, the contractor will design, install, and operate either a) a coffer dam/pumping system capable

of pumping all flows, both daily and small storm within the creek into a bypass pipe(s) (or fire hose) around the construction work in the low-flow channel and back into the low-flow channel downstream or b) a temporary diversion structure that directs flows to the opposite side of the creek. The cofferdam may not be constructed from soil but may use native gravel materials or other clean materials. Less than one cfs is expected in the channel during construction.

Revegetation Activities

Currently, no trees exist within either the low-flow channel or the larger flood control channel. Some trees do currently exist on the non-creek side of the Marsh Creek Regional Trail in the upper reach. Where possible, these will be protected and retained. Following the construction of channel widening activities, depending on location, the project area would be planted with wetland plants, grasses, scrub, and trees. Riparian trees would be planted on the upper banks and along the creek side and would include valley oak, sycamore, live oak, box elder, buckeye, cottonwood, and willow. Slopes and banks would be planted with grassland and scrub species, which would include creeping wild rye, California brome, purple needlegrass, dense-flowered lupine, mugwort, common fiddleneck, elegant clarkia, and California poppy. Areas of the floodplain would be planted with seasonal wetland species that will include, but not be limited to, creek clover, Baltic rush, and deer sedge. Planting would occur in November and December and would be accomplished by hand tools and power augers. Specific ways and means will be determined by the contractor.

Modification of Stormdrain Outfalls

There are fourteen outfalls in the project area. Six will remain untouched. Three will be removed completely. The project will modify five existing outfalls by cutting them back to slope. Two will be protected with less than one cubic yard of riprap each. Three will be protected with new headwalls with less than one cubic yard of concrete each. If the invert of the stormdrain outfall is below the floodplain, the project will create a small swale through the floodplain to connect the outfalls to the creek. All work will be above the OHWM.

Trail Extension below Central Boulevard Bridge

The Marsh Creek Regional Trail currently crosses the busy Central Blvd. at grade. The project will extend the trail beneath the Central Blvd. bridge (Photo 7). This trail extension will consist of concrete below the OHWM (to be closed when flooded) (approximately 170 LF, 0.04 AC, 32 CY of concrete and 42 CY of base course). The project may also install small amounts of riprap to protect the footing of the Central Blvd. Bridge (>200 LF, 0.025 AC, 24 CY). An excavator, steamroller, front-end loader, and road paving machine may be used. Equipment to be used will be determined by the contactor.

Photo 7: Area beneath Central Blvd. Bridge where trail extension will go. Note bridge footings that will require riprap protection.

Pedestrian Bridge

Contingent on available funding, the project will install a pedestrian bridge across Marsh Creek just upstream of the confluence with Sand Creek (Sheet L-3.4). The bridge will be 10 feet wide and approximately 100 feet long. If funding is not available, the project may install the abutments outside of the OHWM or nothing at all.

Temporary Land Bridges

The project will install up to six temporary land bridges across the creek to facilitate construction access between the excavation areas on the east side of the creek and the excavated soils disposal site on the west side of the creek. Four are shown on Sheet T-2 in the 50% plans; one across Marsh Creek near the WQ Basin in the lower reach, and three across Sand, Marsh and Deer creeks to the likely disposal site on the west bank.

The crossings will be installed by placing a temporary culvert in the channel and then placing soil fill (from on-site) over the culvert that is wrapped in geotextile fabric. The fabric keeps the fill separated from the creek environment and makes the removal clean and quick, as the material is kept separate from the creek. The culvert length may be as long as 60 ft. Total area is roughly 2,500 square feet and the each crossing will use approximately 600 cubic yards of material. The culverts will occur below the OHWM but fill is expected to remain mostly above.

The crossings will be in place during the grading operations though at least one will remain in place through planting to connect the staging/disposal site on the west side of Marsh Creek with the rest of the project.

The final design will be developed by the contractor and will need to be approved by the regulating agencies.

10D. Dewatering

The project proponents expect there to be less than one cubic feet per second in the channel during construction. The channel in this location typically is dry during most summers. However, if water is in the channel while the approximately 8 rootwads, the footing protection, or temporary land bridges are being installed, the contractor will design and submit a localized dewatering plan for agency review and approval.

11A. Project Impacts

The Three Creeks Parkway Restoration Project will widen the Marsh Creek flood control channel along 4,050 feet of channel. The project will excavate 26,000 cubic yards of soil and riprap to create additional capacity in the channel for floods and riparian trees. The 2.9 acres of wetted channel along the 4,050 linear fee will not be modified except to install approximately 8 rootwads that will create habitat in the channel. Most of the temporary impacts will be to the 3.2 acres of riparian area which are currently tree-less flood control channel backed by riprap. The project will require the removal of 3 ornamental or landscape trees that are currently away from the top of the channel in the upland area but within the extent of grading. One mature, unhealthy oak within this zone will be removed by the project to make way for the widened creek corridor.

Specific equipment will be determined by the bid award contractor. Equipment will likely include long arm excavators, backhoes, loaders, and a variety of small equipment. All impacts will be mitigated by the measures described in the responses to Boxes 12.A and 12B below.

11C. Special Status Species

Federally and/or State Listed Species

- Swainson's hawk (*Buteo swainsonii*) – Detected.
- White-tailed kite (*Elanus leucurus*) – Possible: marginally suitable nesting habitat present nearby.
- Steelhead – Central Valley DPS (*Oncorhynchus mykiss irideus*) – Possible: marginally suitable nesting habitat present.
- California red-legged frog (Rana draytonii) – Not expected: not recorded from a 3-mile radius of project site. Marginally suitable habitat present.

Other Special Status Species

- Silvery legless lizard (*Anniella pulchra pulchra*) – Possible: marginally suitable habitat present.
- Burrowing owl (Athene cunicularia) – Detected.
- Pacific pond turtle (*Emys marmorata*) – Possible: not observed, but known fron project vicinity. Marginally suitable habitat present.
- Loggerhead shrike (*Lanius ludovicianus*) – Possible: marginally suitable habitat present.
- Chinook salmon – Central Valley fall/late fall run ESU (Oncorhynchus tshawytscha) – Possible: marginally suitable habitat present

12A. Techniques to Prevent Sediment from Entering Watercourses

In order to avoid, minimize and compensate for unavoidable impacts on waters of the U.S./waters of the State, the measures outlined below shall be implemented.

1) Impacts on waters of the U.S. will be avoided by restricting grading to an elevation above the OHWM; avoidance of impacts to waters of the State is not feasible. Long-term impacts shall be minimized by limiting the use of hardened structures (e.g., grouted riprap) in preference of bio-engineering solutions as much as is practicable. Surface water connections must not be permanently blocked or interrupted and the installation of drop-structures or other features that create barriers to wildlife movement shall be avoided.
2) Prior to construction, the project proponent will need to secure authorization from the USACE, RWQCB, and CDFW in conformance to the Clean Water Act and Lake and Streambed Alteration Program.
3) Participation in the HCP/NCCP is expected to satisfy the requirements of the regulatory agencies for compensatory mitigation for unavoidable impacts on stream channels, wetlands and riparian habitat. A Planning Survey Report will be completed and submitted to the East Contra Costa County Habitat Conservancy. The submittal will need to include detailed drawings illustrating all temporary and permanent impacts.
4) Per the terms of the adopted HCP/NCCP, a wetland mitigation fee or on-site habitat restoration will mitigate the impacts. If accepted by the regulatory agencies, no additional mitigation for wetland impacts is typically required. HCP/NCCP fee payment will occur at project contract award.
5) For all work within and adjacent to the stream channel and riparian habitat, best management practices (BMPs) must be incorporated into the project design to minimize environmental effects. These include the following:
    - Construction in the active channels shall be restricted to the dry season (April 15-October 15).
    - Personnel conducting ground-disturbing activities within or adjacent to the buffer zone of wetlands, ponds, streams, or riparian woodland/scrub shall be trained by a qualified biologist in these avoidance and minimization measures and the permit obligations.
    - If dewatering is necessary, water released downstream of work areas must be as clean or cleaner than flows entering the work area. Sediment-laden water shall be either pumped onto upland sites for infiltration or into Baker tanks for settling, prior to being released back into the channel. Coffer dams shall consist of clean, silt-free sand or gravel in sand bags, or a comparable material. All coffer dam materials must be promptly removed when no longer needed.
    - High visibility temporary construction fencing should be erected between the outer edge of the limits of construction and adjacent streams or habitats to be preserved. Temporary construction fencing will be removed upon the completion of work.
    - Grading or construction near channels shall be isolated with silt fencing or other BMPs to prevent sedimentation. BMPs shall be regularly inspected.
    - Vehicles and equipment shall be parked on existing roads or previously disturbed areas.
    - Equipment working in channels must be in good working order and free of leaks of fuel, oil, and hydraulic fluids. Drip pans shall be placed under vehicles and equipment over waterways and spill clean-up materials should be kept onsite at a convenient location.
    - Equipment maintenance and refueling shall be performed well away from the top of bank of any channel; storm drain inlets shall be protected from an accidental release of contaminants.

- Concrete washings or other contaminants must not be permitted to enter the stream channel or any storm drain inlet.
- Any concrete structures or cured-in-place pipe linings shall be allowed to cure before coming in contact with surface flows.
- Construction debris and materials shall be stockpiled away from watercourses.
- Appropriate erosion-control measures (e.g., coconut coir matting, tackified hydroseeding, blown straw or other organic mulching material) shall be used on site to reduce siltation and runoff of contaminants into wetlands, ponds, streams, or riparian woodland/scrub. Plastic mono-filament netting (e.g., that used with erosion control matting) or similar material should not be used within the action area; wildlife can become entangled or trapped such non-biodegradable materials. Erosion-control measures shall be placed between the outer edge of the buffer and the project site.
- Fiber rolls used for erosion control shall be certified as free of noxious weed seed.
- Construction staging areas past the channel banks must be located away from any wetlands or other sensitive habitats as identified by a qualified biologist.
- Newly graded earthen channel slopes shall be revegetated with a native seed mix developed by a qualified restorationist. Seed mixtures applied for erosion control shall not contain invasive nonnative species, and be composed of native species or sterile nonnative species. Straw or mulch shall also be applied to all bare surfaces. The seed mix and mulch shall be applied prior to the onset of the first winter-season rains.
- Herbicide shall not be applied within 30 meters (100 feet) of wetlands, ponds, streams, or riparian habitat. However, where appropriate to control serious invasive plants, herbicides that have been approved by the U.S. EPA for use in or adjacent to aquatic habitats may be used as long as label instructions are followed and applications avoid or minimize impacts on covered species and their habitats. In seasonal or intermittent stream or wetland environments, appropriate herbicides may be applied during the dry season to control nonnative invasive species. Herbicide drift should be minimized by applying the herbicide as close to the target area as possible and by avoiding applying during windy days.
- Additional measures may be outlined in the conditions of the permits issued by the USACE, RWQCB, CDFW, and the Habitat Conservancy. All permit conditions must be conformed to.

12B. Project Avoidance and/or Minimization Measures

Mitigation Measure BIO-1:

To avoid and minimize impacts to California red-legged frog (CRF), Pacific (Western) pond turtle (PPT), and silvery legless lizard (SLL) during construction activities, the project will implement the following measures:

1. Coverage under the East Contra Costa County Habitat Conservation Plan / Natural Community Conservation Plan (HCP/NCCP). The project proponent shall apply for coverage under the HCP/NCCP. Participation in the HCP/NCCP, including implementation of appropriate avoidance and minimization meausres and payment of applicable fees) will provide the project proponent with incidental take coverage for CRF, PPT, and SLL.
2. Seasonal Avoidance. Work shall be limited to the dry season, from April 15 to October 15.
3. Minimize Nighttime Work. Nighttime construction shall be restricted to avoid effects on nocturnally active species such as CRF.
4. Environmental Awareness Program. Prior to the commencement of construction activities, a qualified biologist shall present an environmental awareness program to all construction personnel working on site. At a minimum the training should include a description of special-status species that could be encountered, their habitats, regulatory status, protective measures, work boundaries, lines of communication, reporting requirements, and the implications of violations of applicable laws.
5. Wildlife Exclusion Fencing. Prior to the start of construction, wildlife exclusion fencing (WEF)1 shall be installed to isolate the work area from any habitats potentially supporting special-status animals or through which such species may move. The final project plans shall indicate where and how the WEF is to be installed. The bid solicitation package special provisions shall provide further instructions to the contractor about acceptable fencing material. The fencing shall remain throughout the duration of the work activities, be regularly inspected and properly maintained by the contractor. Fencing and stakes shall be completely removed following project completion.
6. Preconstruction Surveys. To avoid incidental take, a preconstruction survey for CRF, PPT, and SLL shall be conducted immediately prior to vegetation clearing and construction activities within the Marsh Creek channel.
7. Best Management Practices (BMPs). Prior to the initiation of work, BMPs shall be in place to prevent the release of any pollutants or sediment into the creek, storm drains, or tributaries; all BMPs shall be properly maintained. Leaks, drips, and spills of hydraulic fluid, oil, or fuel from construction equipment shall be promptly cleaned up to prevent contamination of water ways. All workers shall be properly trained regarding the importance of preventing and cleaning up spills of contaminants. Protective measures should include, at a minimum:
    a. No discharge of pollutants from vehicle and equipment cleaning should be allowed into any storm drains or watercourses.
    b. Spill containment kits should be maintained onsite at all times during construction operations and/or staging or fueling of equipment.
    c. Coir rolls or straw wattles should be installed along or at the base of slopes during construction to capture sediment.

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[1] Wildlife Exclusion Fencing should provide a barrier for terrestrial wildlife gaining access to the project work areas. The fencing may vary to meet the needs of a particular species, but should be buried and/or backfilled to prevent animals passing under the fence and should be high enough to deter reptiles and amphibian or small mammals from climbing or jumping over the fence. Acceptable fencing materials including ERTEC E-Fence® (Ertec Environmental Systems LLC), plywood, corrugated metal, silt fencing or other suitable materials.

8. Erosion Control. Graded areas shall be protected from erosion using a combination of silt fences, fiber rolls along toes of slopes or along edges of designated staging areas, and erosion control netting (such as jute or coir) as appropriate on sloped areas.
9. Construction Site Restrictions. The following site restrictions shall be implemented to avoid adversely affecting sensitive habitats and harm or harassment to listed species:
    a. Any fill material shall be certified to be non-toxic and weed free.
    b. All food and food-related trash items shall be enclosed in sealed trash containers and removed completely from the site at the end of each day.
    c. No pets from project personnel shall be allowed anywhere in the project site during construction.
    d. No firearms shall be allowed on the project site except for those carried by authorized security personnel, or local, State or Federal law enforcement officials.
    e. All equipment shall be maintained such that there are no leaks of automotive fluids such as gasoline, oils or solvents and a Spill Response Plan shall be prepared. Hazardous materials such as fuels, oils, solvents, etc. shall be stored in sealable containers in a designated location that is isolated from wetlands and aquatic habitats.
    f. Servicing of vehicles and construction equipment including fueling, cleaning, and maintenance will occur only at sites isolated from any aquatic habitat unless separated by topographic or drainage barrier or unless it is an already existing gas station. Staging areas may occur closer to the project activities as required.
10. Proper Use of Erosion Control Devices. Plastic mono-filament netting (e.g., that used with erosion control matting) or similar material shall not be used within the project area; wildlife can become entangled or trapped in such non-biodegradable materials. Acceptable substitutes include coconut coir matting, tackified hydroseeding, blown straw, or other organic mulching material.
11. Protocol for Species Observation – PPT and SLL. If a PPT or SLL is encountered in the project site, work in the area of the finding must cease immediately until the animal either moves out of harm's way of its own accord or is safely relocated well upstream or downstream of the project site. Only a qualified biologist with a scientific collection permit issued by the CDFW may handle and relocate PPT or SLL. Any sightings and relocation of PPT and SLL should be reported to the CDFW and the CNDDB.

Mitigation Measure BIO-2:
To minimize and avoid impacts to Chinook salmon and steelhead, the following measures will be implemented:

1. Seasonal Avoidance. Work shall be limited to the dry season, from June 1 to October 31.
2. In-Stream Activities: If in-stream construction or dewatering is required, the following precautionary measures will be implemented:
    a. A preconstruction survey of the aquatic environment shall be performed by a qualified biologist.
    b. A qualified biologist shall present an environmental awareness program working on site.
    c. A qualified biologist should monitor all in-stream activities.
    d. If dewatering is proposed, a qualified biologist will monitor the installation of coffer dams. During dewatering, a qualified biologist will check for stranded aquatic wildlife. Dewatering pumps must be fitted with intake screens with a mesh no greater than 5 mm (0.2 in).
    e. Native species (non-special status fish species) should be relocated upstream or downstream of the cofferdams by a permitted biologist. Non-native species should be

euthanized in accordance with the guidance of the CDFW. All wildlife encounters should be documented and reported to the CDFW. If listed salmonids are present, the NMFS shall be consulted to determine the appropriate measures to ensure conformance with ESA.

Mitigation Measure BIO-3:
In order to avoid impacts to nesting Swainson's hawk, white-tailed kite, burrowing owl, loggerhead shrike, and other bird species protected under the MBTA and CFGC during project implementation, the measures outlined below shall be implemented.

1) Environmental Awareness Program. Prior to the commencement of construction activities, a qualified biologist shall present an environmental awareness program to all construction personnel working on site. At a minimum the training shall include a description of special-status species that could be encountered, their habitats, regulatory status, protective measures, work boundaries, lines of communication, reporting requirements, and the implications of violations of applicable laws.
2) Swainson's hawk is a federally listed threatened species and is covered under the HCP/NCCP. Nonetheless, every effort should be made to ensure that no take of Swainson's hawk occurs. Therefore, the measures outlined below should be implemented.
    a. The project proponent should apply for coverage under the HCP/NCCP. Participation in the HCP/NCCP would provide the applicant with incidental take coverage for Swainson's hawk and satisfy any requirements for mitigation for loss of habitat.
    b. Prior to any ground disturbance during the nesting season (March 15-September 15), a qualified biologist shall conduct a preconstruction survey no more than one month prior to construction to determine if there are any active Swainson's hawk nests within 305 meters (1,000 feet) of the project site.
    c. If there are no occupied nests within this buffer, no further action is needed.
    d. If an active nest is present within this buffer, the measures outlined below shall be followed.
        - Construction activities are not permitted within 305 meters (1,000 feet) of an occupied nest to prevent nest abandonment. However, if site-specific conditions or the nature of the activity warrant a small buffer, a qualified biologist should coordinate with CDFW and USFWS to determine the appropriate buffer size.
        - Construction activities may proceed prior to September 15 if the young Swainson's hawks have fledged, as determined by a qualified biologist.
3) White-tailed kite is a state-listed fully protected species; it is not covered under the HCP/NCCP and incidental take of the species is not allowed. To ensure that no take of white-tailed kite or other migratory raptors occurs, the measures outlined below shall be implemented.
    a. Prior to any ground disturbance during the nesting season (February 1-August 31), a qualified biologist shall conduct a preconstruction survey no more than two weeks prior to construction to determine if there are any active nests of white-tailed kite or other migratory raptors within 90 meters (300 feet) of the project site.
    b. Prior to the removal or significant pruning of any trees, they shall be inspected by a qualified biologist for the presence of raptor nests. This is required regardless of season. If a suspected raptor nest is discovered, the CDFW shall be notified. Pursuant to CFGC Section 3503.5, raptor nests, whether or not they are occupied, may not be removed until approval is granted by the CDFW.
    c. If there are no occupied nests within this buffer, no further action is needed.

d. If an active nest is present within this buffer, the measures outlined below shall be implemented.
    - Construction activities are not permitted within 76 meter (250 feet) of an occupied nest to prevent nest abandonment. However, if site-specific conditions or the nature of the activity warrant a small buffer, a qualified biologist should coordinate with the CDFW and/or USFWS to determine the appropriate buffer size. Nest monitoring may be warranted for activities that would occur within a smaller buffer.
    - Construction activities may proceed prior to August 31 if the young white-tailed kites or other raptor species have fledged, as determined by a qualified biologist.

4) Burrowing owl is a State species of special concern and a covered species under the HCP/NCCP. To ensure that no take of burrowing owl occurs, the measures outlined below shall be implemented.
    a. Prior to any ground disturbance during the nesting season (February 1-August 31), a CDFW-approved biologist shall conduct a preconstruction survey of all suitable burrowing owl habitat that would be affected by the project. The survey shall be performed no more than 30 days prior to construction to determine if there are any active nests of burrowing owl within 153 m (500 ft) of the project site, access permitting.
    b. If there are no occupied nests within this buffer, no further action is needed.
    c. If an active nest is present within this buffer, the measures outlined below shall be implemented.
        - If an occupied burrowing owl nest site is present within the limits of work, construction may not proceed. The taking of burrowing owls or occupied nests is prohibited under CFGC.2 Nest sites must be flagged and protected by a designated disturbance-free buffer zone of at least 76 meters (250 feet).
        - Construction activities are not permitted within 76 meters (250 feet) of an occupied nest to prevent nest abandonment.
        - Construction may proceed if a qualified biologist monitors the nest and determines that the adults have not begun egg-laying and incubation or that the juveniles have fledged.
        - Burrowing owls may be passively excluded from occupied burrows outside of the breeding season (i.e., September 1-January 31), in consultation with the CDFW. All owls should be passively excluded from burrows within 49 meters (160 feet) of the work site. Passive exclusion is achieved by installing one-way doors in the burrow entrances. Doors should be in place for at least 48 hours and the site should be monitored daily for at least one week to confirm that the burrow has been abandoned.

5) Loggerhead shrike is a state species of special concern; it is not covered under the HCP/NCCP and incidental take of the species is not allowed. To ensure that no take of loggerhead shrike or other migratory passerines occurs, the measures outlined below shall be implemented.
    a. If ground-disturbing activities (i.e., site clearing, disking, grading, etc.) can be performed outside of the nesting season (i.e., between September 1 and January 31), no additional surveys are warranted.

---

[2] CFGC §§3503, 3503.5 and 3800

b. Prior to any ground disturbance during the nesting season (February 1-August 31), a qualified biologist should conduct a preconstruction survey no more than two weeks prior to construction to determine if there are any active nests of loggerhead shrike or other migratory passerines nests within 30 meters (100 feet) of the project site.
c. If there are no occupied nests within this buffer, no further action is needed.
d. If an active nest is present within this buffer, the following measures shall be implemented.
    - Construction activities are not permitted within 30 meters (100 feet) of an occupied nest to prevent nest abandonment. However, if site-specific conditions or the nature of the activity warrant a smaller buffer, a qualified biologist should coordinate with the CDFW and USFWS to determine the appropriate buffer size. Nest monitoring may be warranted for activities that would occur within a smaller buffer.
    - Construction activities may proceed prior to August 31 if the young birds have fledged, as determined by a qualified biologist.

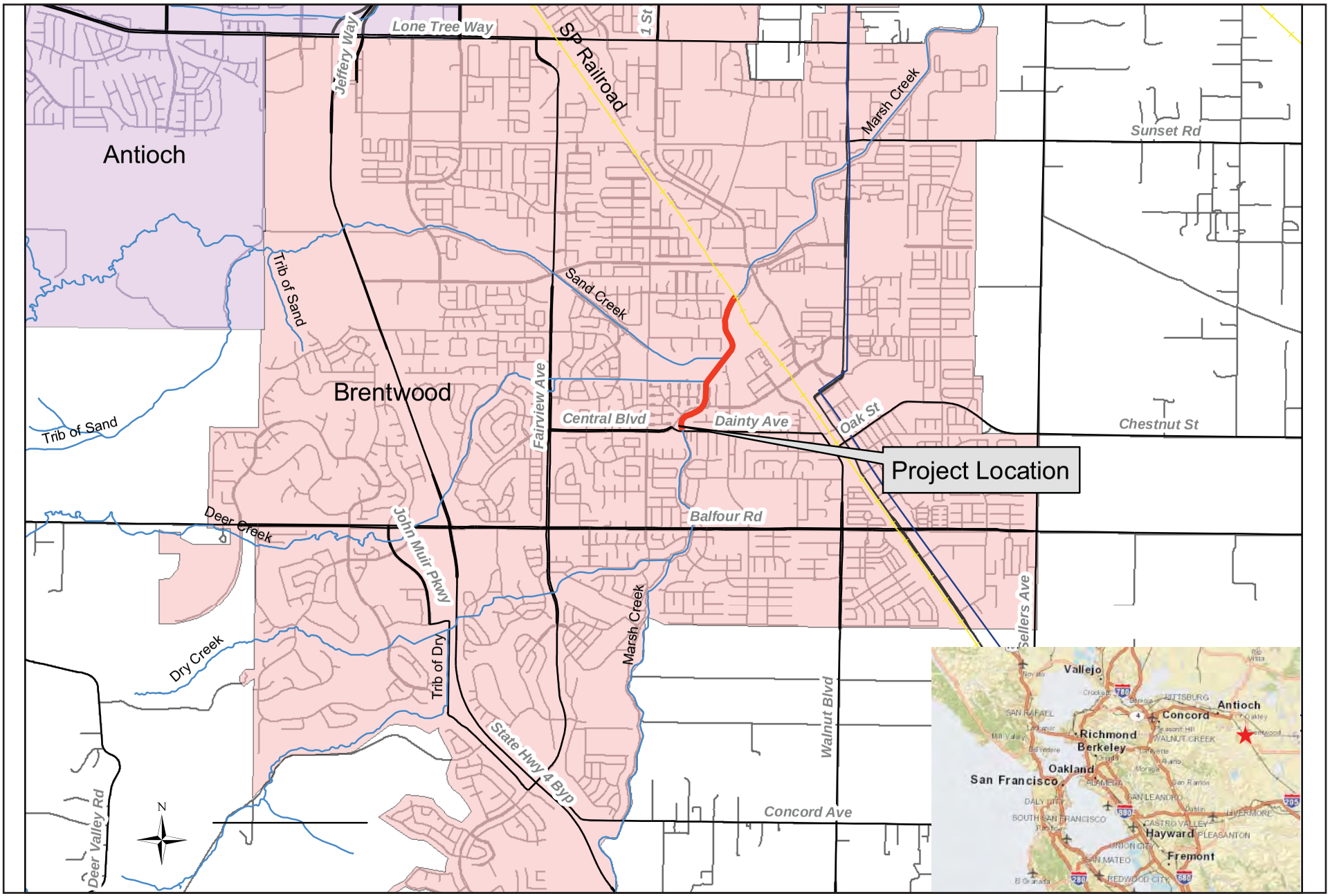
Attachment A

- Vicinity Map (Figure 1)
- Project Diagrams/Cross Sections (Figures 2-8)
- Three Creeks Parkway Restoration Project Construction Documents - 50% Set, July 7, 2016

Submitted on CD:

- Restoration Design Group. 2017. Carmel Estates Water Quality Basin Alternatives Memo.
- Impact Sciences. 2016. Three Creeks Parkway Restoration Project Initial Study and Proposed Mitigated Negative Declaration. August.
- Wood Biological Consulting. 2016. Biological Resource Assessment for the Three Creeks Restoration Project at Marsh Creek.
- Restoration Design Group. 2017. Three Creeks Parkway - 50% Design Hydraulic Modeling Report Updated.

Figure 1 Vicinity Map



SOURCE: Restoration Design Group, Inc. 2016

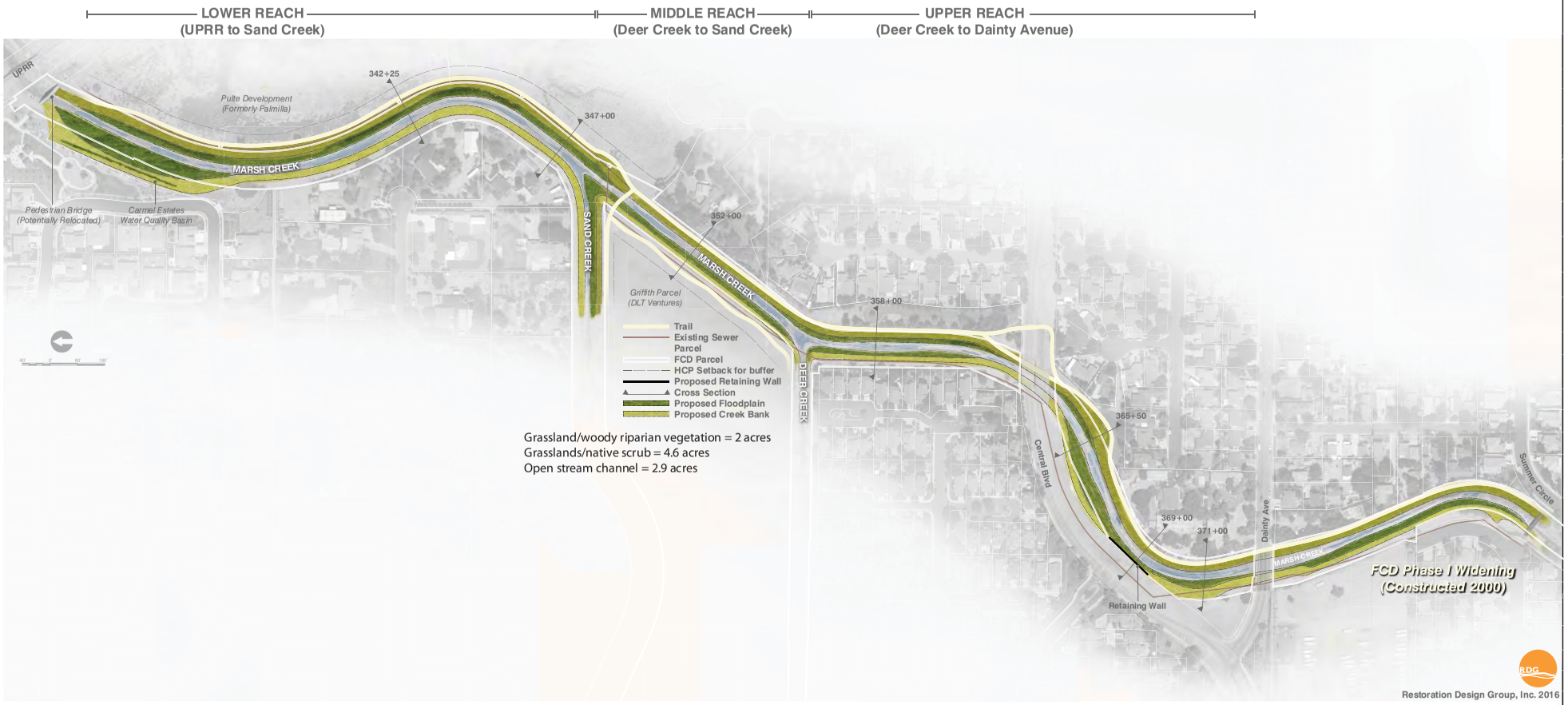
FIGURE 1

IMPACT SCIENCES

Project Location

1273.001-06/16

Figures 2-8 Project Diagrams and Cross Sections



THREE CREEKS PARKWAY RESTORATION PROJECT

07.07.16

American Rivers
Rivers Connect Us

Contra Costa County
Flood Control
& Water Conservation District

SOURCE: Restoration Design Group, Inc. 2016

FIGURE 2

Site Plan

IMPACT SCIENCES

1273.001-06/16

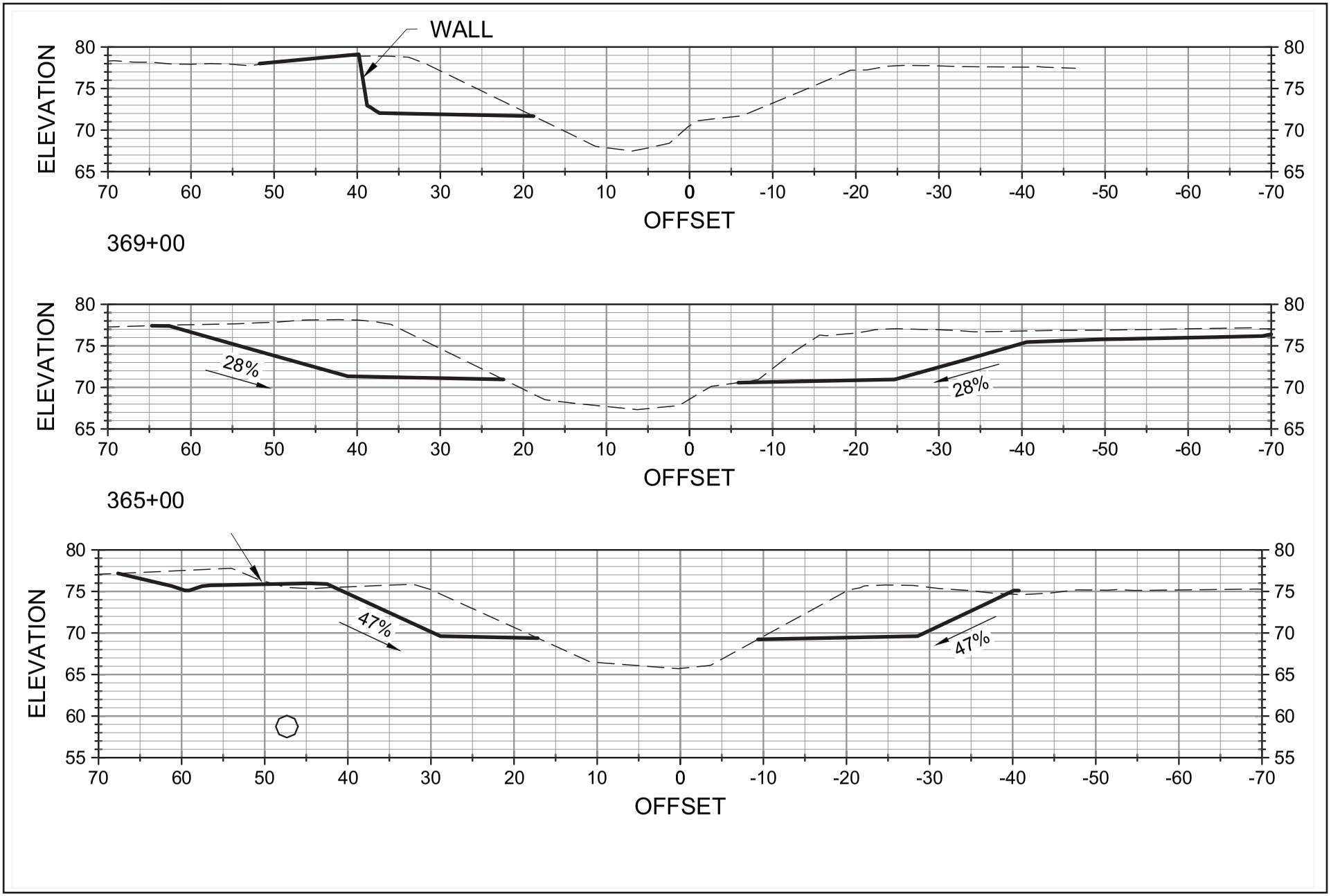
SOURCE: Restoration Design Group, Inc. 2016

FIGURE 4

IMPACT SCIENCES

Upper Reach Channel Widening

1273.001-06/16



SOURCE: Restoration Design Group, Inc. 2016

FIGURE 5

IMPACT SCIENCES

Upper Reach Cross-Sections

1273.001-06/16

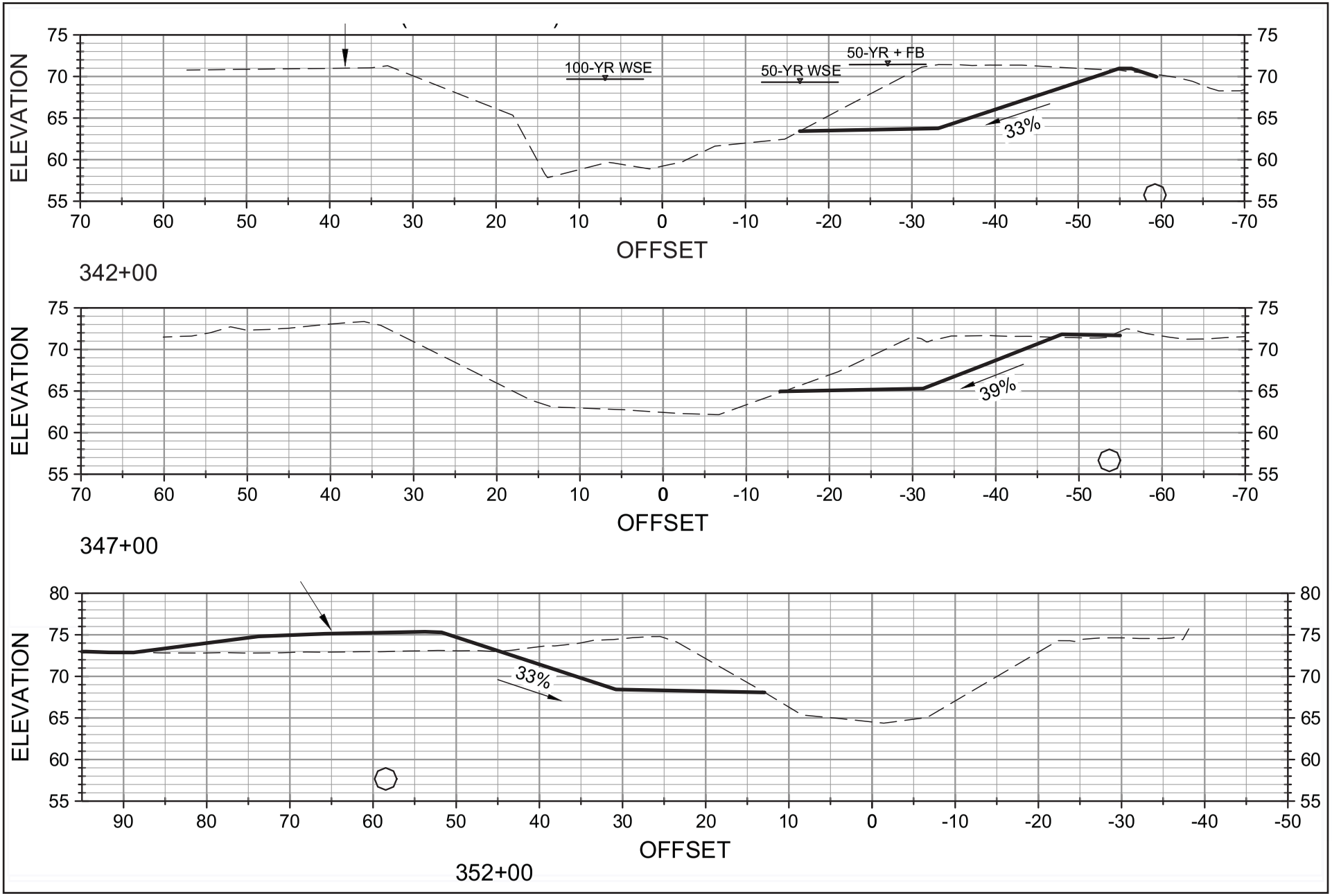
SOURCE: Restoration Design Group, Inc. 2016

FIGURE 6

IMPACT SCIENCES

Middle Reach Improvements

1273.001-06/16



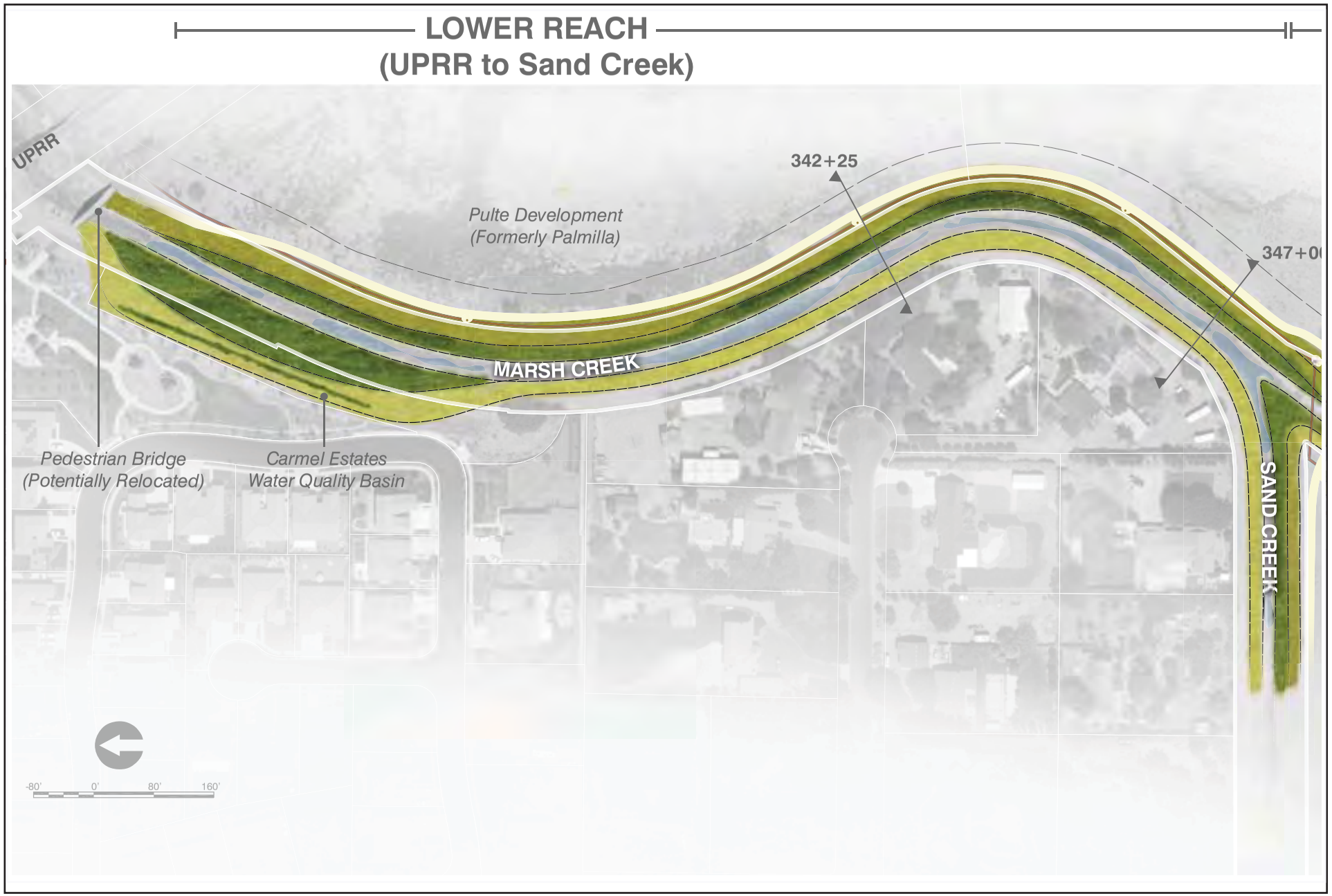
SOURCE: Restoration Design Group, Inc. 2016

FIGURE 7

IMPACT SCIENCES

Middle and Lower Reach Cross-Sections

1273.001-07/16



SOURCE: Restoration Design Group, Inc. 2016

FIGURE 8

IMPACT SCIENCES

Lower Reach Improvements

1273.001-08/16

Three Creeks Parkway Restoration Project Construction Documents - 50% Set

401 Water Quality Certification (CVRWQCB)

16 March 2018

Mike Carlson
Contra Costa Flood Control District
255 Glacier Drive
Martinez, CA 94553

CERTIFIED MAIL
91 7199 9991 7036 6989 1315

CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION AND ORDER FOR THE THREE CREEKS PARKWAY RESTORATION PROJECT, CONTRA COSTA COUNTY (WDID#5B07CR00187)

Enclosed please find a Clean Water Act Section 401 Water Quality Certification and Order, authorized by Central Valley Regional Water Quality Control Board Executive Officer, Pamela C. Creedon. This Order is issued to Contra Costa Flood Control for Three Creeks Parkway Restoration Project (Project). Attachments A through F of the Enclosure are also part of the Order.

This Order is issued in response to an application submitted by Contra Costa Flood Control District for proposed Project discharges to waters of the state, to ensure that the water quality standards for all waters of the state impacted by the Project are met. You may proceed with your Project according to the terms and conditions of the enclosed Order.

Please review your Order carefully to ensure that you understand all aspects of the Order. Note that this Order requires reporting and notification. Requirements for the content of the reporting and notification requirements are detailed in Attachment D, including specifications for photo and map documentation during the Project. Written reports and notifications must be submitted using the Reporting and Notification Cover Sheet located in Attachment D, which must be signed by the Permittee or an authorized representative.

These reports, notifications, and other submissions must be submitted in a searchable Portable Document Format (PDF). Documents less than 50 MB must be emailed to: centralvalleysacramento@waterboards.ca.gov. In the subject line of the email, include the Central Valley Water Board Contact, Project name, and WDID. Documents that are 50 MB or larger must be transferred to a disk and mailed to the Central Valley Water Board Contact.

If you require further assistance, please contact me by phone at (916) 464-4856 or by email at Nicholas.White@waterboards.ca.gov. You may also contact Elizabeth Lee, Unit Supervisor, by phone at (916) 464-4787 or by email at Elizabeth.Lee@waterboards.ca.gov.

Original Signed By:

Nicholas White
Water Resource Control Engineer
401 Water Quality Certification Unit

Enclosures (1): Order for Three Creeks Parkway Restoration Project

cc: [Via email only] (w/ enclosure):

Sam Ziegler (Electronic Copy Only)
United States Environmental Protection Agency
Ziegler.Sam@epa.gov

California Department of Fish and Wildlife, Region 3
AskBDR@wildlife.ca.gov

CWA Section 401 WQC Program
Division of Water Quality
State Water Resources Control Board
Stateboard401@waterboards.ca.gov

Elizabeth Lee
Unit Supervisor
Central Valley Regional Water Quality Control Board, Sacramento
Elizabeth.Lee@waterboards.ca.gov

cc: (w/ enclosure):
Bill Guthrie
United States Army Corps of Engineers
Sacramento District Headquarters
1325 J Street, Room 1350
Sacramento, CA 95814-2922

Bill Jennings
CA Sportfishing Protection Alliance
3536 Rainier Avenue
Stockton, CA 95204

CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION AND ORDER

Reg. Meas. ID:	416152
Place ID:	830777
WDID:	5B07CR00187
USACOE#:	SPK-2016-00934

Effective Date: 16 March 2018

Expiration Date: 15 March 2023

Program Type: Restoration

Project Type: Ecological Aquatic/Stream/Habitat Restoration

Project: Three Creeks Parkway Restoration Project (Project)

Applicant: Contra Costa County Flood Control

Applicant Contact: Mike Carlson
255 Glacier Drive
Martinez, CA 94553
Phone: (925) 313-2000
Email: mike.carlson@pw.cccounty.us

Applicant's Agent: Restoration Design Group
Rich Walking
2612 8th Street, Suite B
Berkeley, CA 94710
Phone: (510) 644-2798 x5
Email: rich@rdgmail.com

Water Board Staff: Nicholas White
Water Resource Control Engineer
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670
Phone: (916) 464-4856
Email: Nicholas.White@waterboards.ca.gov

Water Board Contact Person:
If you have any questions, please call Central Valley Regional Water Quality Control Board (Central Valley Water Board) Staff listed above or (916) 464-3291 and ask to speak with the Water Quality Certification Unit Supervisor.

Table of Contents

I. Order

This Clean Water Act (CWA) section 401 Water Quality Certification action and Order (Order) is issued at the request of Contra Costa County Flood Control (herein after Permittee) for the Project. This Order is for the purpose described in application and supplemental information submitted by the Permittee. The application was received on 14 December 2016. The application was deemed complete on 1 November 2017. Prior to receiving a complete application, Central Valley Water Board staff issued a notice of incomplete application and the Permittee responded to the request for application information on the following dates (Table 1).

Table 1: Record of Notice(s) of Incomplete Application	
Date of Notice of Incomplete Application	Date all requested information was received.
30 January 2017	12 December 2017

Central Valley Water Board staff requested additional information necessary to supplement the contents of the complete application and the Permittee responded to the request for supplemental information on the following dates (Table 2).

Table 2: Record of Supplemental Application Information	
Date of Request for Supplemental Information	Date all requested information was received.
9 January 2018	19 January 2018

Additionally, Central Valley Water Board Staff issued a Denial without Prejudice on 26 July 2017

II. Public Notice

The Central Valley Water Board provided public notice of the application pursuant to California Code of Regulations, title 23, section 3858 from 8 September 2017 to 29 September 2017. The Central Valley Water Board did not receive any comments during the comment period.

III. Project Purpose

The Three Creeks Parkway Restoration Project will allow for the improvement of flood conveyance capacity and restoration of ecological function along approximately 4,000 linear feet of Marsh Creek.

IV. Project Description

The 14-acre Project is a multi-benefit flood control and creek restoration project. The Project will improve flood conveyance capacity and restore ecological function along approximately 4,000 linear feet of Marsh Creek by widening the channel with a floodplain bench and planting with native vegetation. When complete, the site will include 2 acres of frequently inundated floodplain, 2.9 acres of open stream channel, 4.6 acres of grasslands and native scrub, and 1 acre of paved surface associated with the adjacent creek trail. Duration of 5 months is expected for construction.

V. Project Location

Marsh Creek near intersection of Central Boulevard and Dainty Avenue in Brentwood, California

Start: Latitude: 37°55'50.1" and Longitude: -121°42'38.9"
End: Latitude: 37°56'32.1" and Longitude: -121°42'24.3"

Maps showing the Project location is found in Attachment A of this Order.

VI. Project Impact and Receiving Waters Information

The Project is located within the jurisdiction of the Central Valley Water Board. Receiving waters and groundwater potentially impacted by this Project are protected in accordance with the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition, revised April 2016 (Basin Plan). The Basin Plan for the region and other plans and policies may be accessed online at: http://www.waterboards.ca.gov/plans_policies/. The Basin Plan includes water quality standards, which consist of existing and potential beneficial uses of waters of the state, water quality objectives to protect those uses, and the state and federal antidegradation policies.

It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

Project impact and receiving waters information can be found in Attachment B. Table 1 of Attachment B shows the receiving waters and beneficial uses of waters of the state impacted by the Project. Individual impact location and quantity is shown in Table 2 of Attachment B.

VII. Description of Direct Impacts to Waters of the State

Channel widening activities will occur through the Upper, Middle, and Lower Reaches of Marsh Creek as shown on Figure 2. The Upper Reach is approximately 1,600 feet of the channel between just north of the confluence of Dainty Avenue Bridge and Deer Creek. The Middle Reach, which is about 800 feet in length, will be widened along the west bank. The Lower Reach, which is about 1,600 feet in length, is less constrained and more substantial widening of the channel is planned for this area. The Project will increase the cross-sectional area of the stream channel by excavating 26,000 cubic yards (10,500 from upper, 2,500 from middle, and 13,000 from lower reach) of earth along approximately 4,000 linear feet of both banks of Marsh Creek to create new floodplain.

Upper Reach: Activities conducted at the Upper Reach will include, installing a retaining wall, rough grading and earth moving, and extending Marsh Creek Regional Trail. An approximately 250-foot long retaining wall will be constructed along the west bank. The retaining wall will rise from the back of the floodplain and will not touch the low flow channel. The Marsh Creek Regional Trail currently crosses Central Boulevard at grade. The trail will be extended beneath the Central Boulevard Bridge through placement of approximately 32 cubic yards of wet concrete and 42 cubic yards of base below the high water mark. Approximately 24 cubic yards of riprap will also be installed to protect the footings of the Central Boulevard Bridge. Rough grading and earthmoving activities along the Upper Reach would take place over a period of approximately 2 weeks during the dry season.

Middle Reach: Activities conducted along the Middle Reach will include rough grading and earth moving. These activities will take place over a period of approximately 2 weeks during the dry season.

Lower Reach: Activities conducted along the Lower Reach will include modification of grouted rock, installation of a pedestrian bridge, and rough grading and earth moving. Currently, grouted rock extends to the top of the flood control channel. The upper part, above the high water mark, will be removed during grading as part of widening the new floodplain and replaced with new grouted riprap to match the widened channel. The Project will install a pedestrian bridge across Marsh Creek upstream of the confluence of Sand Creek (Figure 2). The bridge will be 10-feet wide and approximately 100-feet long. Rough grading and earthmoving activities along the Lower Reach would take place over a period of approximately 4 weeks during the dry season.

The Project will install up to six, temporary land bridges across the creek to facilitate construction access between the east side of the creek and the west side of the creek. The bridges will be installed by placing a temporary culvert, which is wrapped in geotextile fabric, in the channel and then placing native soil fill over the culvert. The fabric keeps the fill separated from the creek environment and eases the removal process. Each bridge will use approximately 600 cubic yards of material. The bridges will be in place during the grading operations and at least one will remain in place through planting to connect the staging/disposal site on the west side of Marsh Creek with the rest of the Project.

Dewatering may occur within the Project area. Wet concrete will be placed into stream channel habitat after the area has been completely dewatered or when the work area is naturally dry.

Total Project fill/excavation quantities for all impacts are summarized in Table 2. Permanent impacts are categorized as those resulting in a physical loss in area and also those degrading ecological condition.

Table 2: Total Project Fill/Excavation Quantity

Aquatic Resource Type	Temporary Impact[1]			Permanent Impact					
				Physical Loss of Area			Degradation of Ecological Condition		
	Acres	CY[2]	LF[2]	Acres	CY	LF	Acres	CY	LF
Riparian Zone	2	-	4,000	-	-	-	-	-	-
Stream Channel	2.5	-	4,000	-	-	-	-	-	-

VIII. Description of Indirect Impacts to Waters of the State – Not Applicable

IX. Avoidance and Minimization

According to the Permittee, the following measures will be in place during construction activities to avoid, reduce, and minimize impacts to waters of the state:

1. Impacts will be avoided by restricting the overwhelming majority of grading to an elevation above the ordinary high water mark (OHWM) (root-wad installation and trail underpass will require grading below the OHWM; avoidance of impacts to waters of the State is not feasible). Long term impacts will be minimized by limiting the use of hardened structures

[1] Includes only temporary direct impacts to waters of the state and does not include upland areas of temporary disturbance which could result in a discharge to waters of the state.

[2] Cubic Yards (CY); Linear Feet (LF)

(e.g., grouted riprap) in preference of bio-engineering solutions as much as is practicable. Surface water connections must not be permanently blocked or interrupted and the installation of drop-structures or other features that create barriers to wildlife movement shall be avoided.

2. Prior to construction, the project proponent will secure authorization from the United States Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife in conformance to the Clean Water Act and Lake and Streambed Alteration Program.
3. Participation in the East Contra Costa County Habitat Conservation Plan / Natural Community Conservation Plan (HCP/NCCP) is expected to satisfy the requirements of the regulatory agencies for compensatory mitigation for unavoidable impacts on stream channels, wetlands and riparian habitat. A Planning Survey Report will be completed and submitted to the East Contra Costa County Habitat Conservancy. The submittal will include detailed drawings illustrating all temporary and permanent impacts.
4. Per the terms of the adopted HCP/NCCP, a wetland mitigation fee or on-site habitat restoration will mitigate the impacts. If accepted by the regulatory agencies, no additional mitigation for wetland impacts is typically required. HCP/NCCP fee payment will occur at project contract award.
5. For all work within and adjacent to the stream channel and riparian habitat, best management practices (BMPs) will be incorporated into the project design to minimize environmental effects.

X. Compensatory Mitigation

No compensatory mitigation is required for permanent impacts because the restoration project results in a net increase to stream (2.9 acres) and wetland (2.0 acres) habitat.

XI. California Environmental Quality Act (CEQA)

On 3 August 2016, the Contra Costa County, as lead agency, adopted an Initial Study/Mitigated Negative Declaration (IS/MND) (State Clearinghouse (SCH) No. 2016082008) for the Project and filed a Notice of Determination (NOD) at the SCH on 9 January 2017. Pursuant to CEQA, the Central Valley Water Board has made Findings of Facts (Findings) which support the issuance of this Order and are included in Attachment C.

This Order, adopts an initial study/mitigated negative declaration (IS/MND) (State Clearinghouse (SCH) No. 2016082008) and approves the mitigation monitoring and reporting program (MMRP) for the Project. Pursuant to CEQA, the Central Valley Water Board has made Findings of Facts (Findings) which support the issuance of this Order and are included in Attachment C.

XII. Petitions for Reconsideration

Any person aggrieved by this action may petition the State Water Resources Control Board to reconsider this Order in accordance with California Code of Regulations, title 23, section 3867. A petition for reconsideration must be submitted in writing and received within 30 calendar days of the issuance of this Order.

XIII. Fees Received

An application fee deposit of $200.00 was received on 16 December 2016.

The fee amount was determined as required by California Code of Regulations, title 23, sections 3833(b)(3) and 2200(a)(3), and was calculated as category D - Ecological Restoration and Enhancement Projects (fee code 85) with the dredge and fill fee calculator.

XIV. Conditions

The Central Valley Water Board has independently reviewed the record of the Project to analyze impacts to water quality and designated beneficial uses within the watershed of the Project. In accordance with this Order, the Permittee may proceed with the Project under the following terms and conditions:

A. Authorization

Impacts to waters of the state shall not exceed quantities shown in Table 2.

B. Reporting and Notification Requirements

The following section details the reporting and notification types and timing of submittals. Requirements for the content of these reporting and notification types are detailed in Attachment D, including specifications for photo and map documentation during the Project. Written reports and notifications must be submitted using the Reporting and Notification Cover Sheet located in Attachment D, which must be signed by the Permittee or an authorized representative.

The Permittee must submit all notifications, submissions, materials, data, correspondence, and reports in a searchable Portable Document Format (PDF). Documents less than 50 MB must be emailed to: centralvalleysacramento@waterboards.ca.gov. In the subject line of the email, include the Central Valley Water Board Contact, Project name, and WDID. Documents that are 50 MB or larger must be transferred to a disk and mailed to the Central Valley Water Board Contact.

1. Project Reporting

a. **Monthly Reporting:** The Permittee must submit a Monthly Report to the Central Valley Water Board on the 1st day of each month beginning the month after the submittal of the Commencement of Construction Notification. Monthly reporting shall continue until the Central Valley Water Board issues a Notice of Project Complete Letter to the Permittee.

   If no sampling is required, the Permittee shall submit a written statement stating, “No sampling was required” within two weeks of initiation of in-water construction, and every month thereafter.

b. **Annual Reporting – Not Applicable**

2. Project Status Notifications

a. **Commencement of Construction:** The Permittee shall submit a Commencement of Construction Report at least seven (7) days prior to start of initial ground disturbance activities which includes the corresponding Waste Discharge Identification Number (WDID#) issued under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ; NPDES No. CAS000002).

b. **Request for Notice of Completion of Discharges Letter:** The Permittee shall submit a Request for Notice of Completion of Discharges Letter following completion of active Project construction activities, including any required restoration and permittee-responsible mitigation. This request shall be submitted to the Central Valley Water Board staff within thirty (30) days following completion of all Project construction activities. Upon acceptance of the request, Central Valley Water Board staff shall issue a Notice of Completion of Discharges Letter to the Permittee which will end the active discharge period and associated annual fees.

c. **Request for Notice of Project Complete Letter:** The Permittee shall submit a Request for Notice of Project Complete Letter when construction and/or any post-construction monitoring is complete,[3] and no further Project activities will occur. This request shall be submitted to Central Valley Water Board staff within thirty (30) days following completion of all Project activities. Upon approval of the request, the Central Valley Water Board staff shall issue a Notice of Project Complete Letter to the Permittee which will end the post discharge monitoring period and associated annual fees.

3. **Conditional Notifications and Reports:** The following notifications and reports are required as appropriate.

a. **Accidental Discharges of Hazardous Materials**[4]

Following an accidental discharge of a reportable quantity of a hazardous material, sewage, or an unknown material, the following applies (Wat. Code, § 13271):

i. As soon as (A) Permittee has knowledge of the discharge or noncompliance, (B) notification is possible, and (C) notification can be provided without substantially impeding cleanup or other emergency measures then:

- first call – 911 (to notify local response agency)
- then call – Office of Emergency Services (OES) State Warning Center at:(800) 852-7550 or (916) 845-8911
- Lastly follow the required OES procedures as set forth in: http://www.caloes.ca.gov/FireRescueSite/Documents/CalOES-Spill_Booklet_Feb2014_FINAL_BW_Acc.pdf

ii. Following notification to OES, the Permittee shall notify Central Valley Water Board, as soon as practicable (ideally within 24 hours). Notification may be delivered via written notice, email, or other verifiable means in accordance with section XIV.B.

[3] Completion of post-construction monitoring shall be determined by Central Valley Water Board staff and shall be contingent on successful attainment of restoration and mitigation performance criteria.

[4] "Hazardous material" means any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment. (Health & Saf. Code, § 25501.)

iii. Within five (5) working days of notification to the Central Valley Water Board, the Permittee must submit an Accidental Discharge of Hazardous Material Report.

b. **Violation of Compliance with Water Quality Standards:** The Permittee shall notify the Central Valley Water Board of any event causing a violation of compliance with water quality standards. Notification may be delivered via written notice, email, or other verifiable means in accordance with section XIV.B.

i. This notification must be followed within three (3) working days by submission of a Violation of Compliance with Water Quality Standards Report.

c. **In-Water Work and Diversions**

i. The Permittee shall notify the Central Valley Water Board at least forty-eight (48) hours prior to initiating work in water or stream diversions. Notification may be delivered via written notice, email, or other verifiable means in accordance with section XIV.B.

ii. Within three (3) working days following completion of work in water or stream diversions, an In-Water Work/Diversions Water Quality Monitoring Report must be submitted to Central Valley Water Board staff.

d. **Modifications to Project**

Project modifications may require an amendment of this Order. The Permittee shall give advance notice to Central Valley Water Board staff if Project implementation as described in the application materials is altered in any way or by the imposition of subsequent permit conditions by any local, state or federal regulatory authority by submitting a Modifications to Project Report. The Permittee shall inform Central Valley Water Board staff of any Project modifications that will interfere with the Permittee's compliance with this Order. Notification may be made in accordance with conditions in the certification deviation section of this Order.

e. **Transfer of Property Ownership:** This Order is not transferable in its entirety or in part to any person or organization except after notice to the Central Valley Water Board in accordance with the following terms:

i. The Permittee must notify the Central Valley Water Board of any change in ownership or interest in ownership of the Project area by submitting a Transfer of Property Ownership Report. The Permittee and purchaser must sign and date the notification and provide such notification to the Central Valley Water Board at least 10 days prior to the transfer of ownership. The purchaser must also submit a written request to the Central Valley Water Board to be named as the permittee in a revised order.

ii. Until such time as this Order has been modified to name the purchaser as the permittee, the Permittee shall continue to be responsible for all requirements set forth in this Order.

f. **Transfer of Long-Term BMP Maintenance:** If maintenance responsibility for post-construction BMPs is legally transferred, the Permittee must submit to the Central Valley Water Board a copy of such documentation and must provide the transferee with a copy of a long-term BMP maintenance plan that complies with manufacturer or designer specifications. The Permittee must provide such notification to the Central Valley Water Board with a Transfer of Long-Term BMP

Maintenance Report at least 10 days prior to the transfer of BMP maintenance responsibility.

C. Water Quality Monitoring

1. **General:** Continuous visual surface water monitoring shall be conducted during active construction periods to detect accidental discharge of construction related pollutants (e.g. oil and grease, turbidity plume, or uncured concrete). The Permittee shall perform surface water sampling:

   a. when performing any in-water work;

   b. during the entire duration of temporary surface water diversions;

   c. in the event that the Project activities result in any materials reaching surface waters; or

   d. when any activities result in the creation of a visible plume in surface waters.

2. **Accidental Discharges/Noncompliance:** Upon occurrence of an accidental discharge of hazardous materials or a violation of compliance with a water quality standard, Central Valley Water Board staff may require water quality monitoring based on the discharge constituents and/or related water quality objectives and beneficial uses.

3. **In-Water Work or Diversions:**

   During planned in-water work or during the entire duration of temporary water diversions, any discharge(s) to waters of the state shall conform to the following water quality standards:

   a. Waters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.

   b. The pH shall not be depressed below 6.5 nor raised above 8.5.

   c. Activities shall not cause turbidity increases in surface water to exceed:

   I. where natural turbidity is less than 1 Nephelometric Turbidity Units (NTUs), controllable factors shall not cause downstream turbidity to exceed 2 NTU;

   II. where natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU;

   III. where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent;

   IV. where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs;

   V. where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

   In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected. Averaging periods may only be used with prior permission of the Central Valley Water Board Executive Officer.

Sampling during in-water work or during the entire duration of temporary water diversions shall be conducted in accordance with Table 3 sampling parameters.[5] The sampling requirements in Table 3 shall be conducted upstream out of the influence of the Project, and approximately 300 feet downstream of the work area.

The sampling frequency may be modified for certain projects with written approval from Central Valley Water Board staff. An In-Water Work and Diversions Water Quality Monitoring Report, as described in Attachment D, shall be submitted within two weeks on initiation of in-water construction, and with every monthly report thereafter. In reporting the data, the Permittee shall arrange the data in tabular form so that the sampling locations, date, constituents, and concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the Project complies with Order requirements. The report shall include surface water sampling results, visual observations, and identification of the turbidity increase in the receiving water applicable to the natural turbidity conditions specified in the turbidity criteria in XIV.C.3.c.

Table 3: Sample Type and Frequency Requirements

Parameter	Unit of Measurement	Type of Sample	Minimum Frequency
Oil and Grease	N/A	Visual	Continuous
pH[6]	Standard Units	Grab	Every 4 hours
Turbidity	NTU	Grab	Every 4 hours

4. Post-Construction:

a. Visually inspect the Project site during the rainy season for one year to ensure erosion, stream instability, or other water quality pollution is not occurring in or downstream of the Project site.

b. **A minimum of three (3) storm-sampling events for turbidity shall be conducted in the water year[7] following construction completion. The storm-sampling event shall occur during the first rain event and any other rain event of the water year forecasted for at least 0.10-inch in a twenty-four (24) hour period that is preceded by at least 30 days of dry weather.** The sampling shall be conducted upstream out of the influence of the Project, and approximately 300 feet downstream of the Project. **If water samples indicate that water quality standards for turbidity are exceeded, the Permittee shall notify the Central Valley Water Board in accordance with section XIV.B.3.b. If any erosion controls are found to be inadequate, further erosion controls shall be implemented and an additional three (3) storm-sampling events shall be conducted the following water year. Additional permits may be required to carry out any necessary site remediation.**

[5] Pollutants shall be analyzed using the analytical methods described in 40 Code of Federal Regulations Part 136; where no methods are specified for a given pollutant, the method shall be approved by Central Valley Water Board staff. Grab samples shall be taken between the surface and mid-depth and not be collected at the same time each day to get a complete representation of variations in the receiving water. A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring shall be maintained onsite.

[6] Sampling to be conducted if uncured concrete comes into contact with surface water.

[7] Water year is defined as the 12-month period starting 1 October through 30 September.

D. Standard

1. This Order is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Water Code section 13330, and California Code of Regulations, title 23, chapter 28, Article 6 commencing with Choose an item. Additionally, the Central Valley Water Board reserves the right to suspend, cancel, or modify and reissue this Order, after providing notice to the Permittee, if the Central Valley Water Board determines that: the Project fails to comply with any of the conditions of this Order; or, when necessary to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act (Wat. Code, § 13000 et seq.) or federal Clean Water Act section 303 (33 U.S.C. § 1313). For purposes of Clean Water Act section 401(d), the condition constitutes a limitation necessary to assure compliance with water quality standards and appropriate requirements of state law.

2. This Order is not intended and shall not be construed to apply to any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license, unless the pertinent certification application was filed pursuant to subsection 3855(b) of chapter 28, title 23 of the California Code of Regulations, and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

3. This Order is conditioned upon total payment of any fee required under title 23 of the California Code of Regulations and owed by the Permittee.

4. In the event of any violation or threatened violation of the conditions of this Order, the violation or threatened violation shall be subject to any remedies, penalties, process, or sanctions as provided for under state and federal law. For purposes of Clean Water Act, section 401(d), the applicability of any state law authorizing remedies, penalties, processes, or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this Order.

E. General Compliance

1. Failure to comply with any condition of this Order shall constitute a violation of the Porter-Cologne Water Quality Control Act and the Clean Water Act. The Permittee and/or discharger may then be subject to administrative and/or civil liability pursuant to Water Code section 13385.

2. Permitted actions must not cause a violation of any applicable water quality standards, including impairment of designated beneficial uses for receiving waters as adopted in the Basin Plans by any applicable Central Valley Water Board or any applicable State Water Board (collectively Water Boards) water quality control plan or policy. The source of any such discharge must be eliminated as soon as practicable.

3. In response to a suspected violation of any condition of this Order, the Central Valley Water Board may require the holder of this Order to furnish, under penalty of perjury, any technical or monitoring reports the Water Boards deem appropriate, provided that the burden, including costs, of the reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. The additional monitoring requirements ensure that permitted discharges and activities comport with any applicable effluent limitations, water quality standards, and/or other appropriate requirement of state law.

4. The Permittee must, at all times, fully comply with engineering plans, specifications, and technical reports submitted to support this Order; and all subsequent submittals required as part of this Order. The conditions within this Order and Attachments supersede conflicting provisions within Permittee submittals.
5. This Order and all of its conditions contained herein continue to have full force and effect regardless of the expiration or revocation of any federal license or permit issued for the Project. For purposes of Clean Water Act, section 401(d), this condition constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements of state law.
6. The Permittee shall adhere to all requirements in the mitigation monitoring and reporting program (MMRP) (include title and date of MMRP) which is incorporated herein by reference and any additional measures as outlined in Attachment C, CEQA Findings of Fact.
7. **Construction General Permit Requirement.** The Permittee shall obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Order No. 2009-0009-DWQ, as amended, for discharges to surface waters comprised of storm water associated with construction activity, including, but not limited to, demolition, clearing, grading, excavation, and other land disturbance activities of one or more acres, or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres.

F. Administrative

1. Signatory requirements for all document submittals required by this Order are presented in Attachment E of this Order.
2. This Order does not authorize any act which results in the taking of a threatened, endangered or candidate species or any act, which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish & G. Code, §§ 2050-2097) or the federal Endangered Species Act (16 U.S.C. §§ 1531-1544). If a “take” will result from any act authorized under this Order held by the Permittee, the Permittee must obtain authorization for the take prior to any construction or operation of the portion of the Project that may result in a take. The Permittee is responsible for meeting all requirements of the applicable endangered species act for the Project authorized under this Order.
3. The Permittee shall grant Central Valley Water Board staff, or an authorized representative (including an authorized contractor acting as a Water Board representative), upon presentation of credentials and other documents as may be required by law, permission to:
   - **a.** Enter upon the Project or compensatory mitigation site(s) premises where a regulated facility or activity is located or conducted, or where records are kept.
   - **b.** Have access to and copy any records that are kept and are relevant to the Project or the requirements of this Order.
   - **c.** Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order.
   - **d.** Sample or monitor for the purposes of assuring Order compliance.

4. A copy of this Order shall be provided to any consultants, contractors, and subcontractors working on the Project. Copies of this Order shall remain at the Project site for the duration of this Order. The Permittee shall be responsible for work conducted by its consultants, contractors, and any subcontractors.
5. A copy of this Order must be available at the Project site(s) during construction for review by site personnel and agencies. All personnel performing work on the Project shall be familiar with the content of this Order and its posted location at the Project site.

G. Construction

1. Dewatering

a. The Permittee shall develop and maintain on-site a Surface Water Diversion and/or Dewatering Plan(s). The Plan(s) must be developed prior to initiation of any water diversions. The Plan(s) shall include the proposed method and duration of diversion activities and include water quality monitoring conducted, as described in section XIV.C.3, during the entire duration of dewatering and diversion activities. The Plan(s) must be consistent with this Order and must be made available to the Central Valley Water Board staff upon request.

b. For any temporary dam or other artificial obstruction being constructed, maintained, or placed in operation, sufficient water shall at all times be allowed to pass downstream, to maintain beneficial uses of waters of the state below the dam. Construction, dewatering, and removal of temporary cofferdams shall not violate section XIV.C.3.

c. The temporary dam or other artificial obstruction shall only be built from clean materials, including, but not limited to, sandbags, gravel bags, water dams, or clean/washed gravel which will cause little or no siltation. Stream flow shall be temporarily diverted using gravity flow through temporary culverts/pipes or pumped around the work site with the use of hoses.

d. If water is present in the work area, the area must be dewatered prior to start of work.

e. This Order does not allow permanent water diversion of flow from the receiving water. This Order is invalid if any water is permanently diverted as a part of the project.

2. Directional Drilling – NOT APPLICABLE

3. Dredging – NOT APPLICABLE

4. Fugitive Dust – NOT APPLICABLE

5. Good Site Management "Housekeeping"

a. The Permittee shall develop and maintain onsite a project-specific Spill Prevention, Containment and Cleanup Plan outlining the practices to prevent, minimize, and/or clean up potential spills during construction of the Project. The Plan must detail the Project elements, construction equipment types and location, access and staging and construction sequence. The Plan must be made available to the Central Valley Water Board staff upon request.

b. Refueling of equipment within the floodplain or within 300 feet of the waterway is prohibited. If critical equipment must be refueled within 300 feet of the waterway, spill prevention and countermeasures must be implemented to avoid spills. Refueling areas shall be provided with secondary containment including drip pans and/or placement of absorbent material. No hazardous materials, pesticides, fuels, lubricants, oils, hydraulic fluids, or other construction-related potentially hazardous substances should be stored within a floodplain or within 300 feet of a waterway. The Permittee must perform frequent inspections of construction equipment prior to utilizing it near surface waters to ensure leaks from the equipment are not occurring and are not a threat to water quality.

c. All materials resulting from the Project shall be removed from the site and disposed of properly.

6. Hazardous Materials

a. The discharge of petroleum products, any construction materials, hazardous materials, pesticides, fuels, lubricants, oils, hydraulic fluids, raw cement, concrete or the washing thereof, asphalt, paint, coating material, drilling fluids, or other substances potentially hazardous to fish and wildlife resulting from or disturbed by project-related activities is prohibited and shall be prevented from contaminating the soil and/or entering waters of the state. In the event of a prohibited discharge, the Permittee shall comply with notification requirements in sections XIV.B.3.a and XIV.B.3.b.

b. Concrete must be completely cured before coming into contact with waters of the United States and waters of the state. Surface water that contacts wet concrete must be pumped out and disposed of at an appropriate off-site commercial facility, which is authorized to accept concrete wastes.

7. Invasive Species and Soil Borne Pathogens – NOT APPLICABLE

8. In-Water Work

a. Work in the streambed and riparian zone shall occur during periods of no precipitation and no flow or when the work area has been completely dewatered.

9. Post-Construction Storm Water Management – NOT APPLICABLE

10. Roads – NOT APPLICABLE

11. Sediment Control

a. Except for activities permitted by the United States Army Corps of Engineers under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act, soil, silt, or other organic materials shall not be placed where such materials could pass into surface water or surface water drainage courses.

b. Silt fencing, straw wattles, or other effective management practices must be used along the construction zone to minimize soil or sediment along the embankments from migrating into the waters of the state through the entire duration of the Project.

c. The use of netting material (e.g., monofilament-based erosion blankets) that could trap aquatic dependent wildlife is prohibited within the Project area.

12. Special Status Species – NOT APPLICABLE

13. Stabilization/Erosion Control

a. All areas disturbed by Project activities shall be protected from washout and erosion.

b. Hydroseeding shall be performed with California native seed mix.

14. Storm Water

a. During the construction phase, the Permittee must employ strategies to minimize erosion and the introduction of pollutants into storm water runoff. These strategies must include the following:

i. The Permittee must comply with the Statewide Construction Storm Water Permit, including, but not limited to, preparation and implementation of a Storm Water Pollution Prevention Plan; and

ii. An effective combination of erosion and sediment control Best Management Practices (BMPs) must be implemented and adequately working prior to the rainy season and during all phases of construction.

H. Site Specific

Marsh Creek is included on the Clean Water Act Section 303(d) list of impaired waters for mercury and is subject to the Sacramento – San Joaquin Delta Methylmercury Total Maximum Daily Load (TMDL).

1. During construction, the Permittee shall implement erosion and sediment control measures to minimize releases of mercury and methylmercury, with the goal of minimizing mercury-containing sediment erosion to protect beneficial uses and reduce mercury loads migrating downstream and to the Delta.

2. The Permittee shall implement erosion and sediment control measures and conduct monitoring ensuring compliance with the turbidity water quality standard as required in Table 3. If turbidity levels exceed the water quality standard, work shall stop and additional erosion management practices implemented.

3. Whenever practicable, the Permittee shall maximize removal of mercury-enriched sediment from the floodplain. Sediment removed from the channel shall be placed so that it will not be allowed to erode back into the creek. The Permittee may relocate sediment within the channel if the sediment is to enhance habitat and appropriate erosion controls are provided, such as revegetation.

I. Total Maximum Daily Load (TMDL) – NOT APPLICABLE

J. Mitigation for Temporary Impacts

The Permittee shall restore all areas of temporary impacts, including Project site upland areas, which could result in a discharge to waters of the state to pre-construction contours and conditions upon completion of construction activities.

K. Compensatory Mitigation for Permanent Impacts[8]

[8] Compensatory Mitigation is for permanent physical loss and permanent ecological degradation of a water of the state.

No compensatory mitigation was required for permanent impacts because the restoration project results in a net increase to stream (2.9 acres) and wetland (2.0 acres) habitat.

L. Ecological Restoration and Enhancement

The quantity of waters of the state permanently gained by the Project is shown in Table 4.

Table 4: Total Ecological Restoration and Enhancement Quantity

Aquatic Resource Type	Restoration Type	Units	Method[9]				
			Est.	Re-est.	Reh.	Enh.	Pres.
Stream Channel	PR	Acres	-	2.9	-	-	-
Wetland	PR	Acres	-	2.0	-	-	-

M. Certification Deviation

1. Minor modifications of Project locations or predicted impacts may be necessary as a result of unforeseen field conditions, necessary engineering re-design, construction concerns, or similar reasons. Some of these prospective Project modifications may have impacts on water quality. Some modifications of Project locations or predicted impacts may qualify as Certification Deviations as set forth in Attachment F. For purposes of this Certification, a “Certification Deviation” is a Project locational or impact modification that does not require an immediate amendment of the Order, because the Central Valley Water Board has determined that any potential water quality impacts that may result from the change are sufficiently addressed by the Order conditions and the CEQA Findings. After the termination of construction, this Order will be formally amended to reflect all authorized Certification Deviations and any resulting adjustments to the amount of water resource impacts and required compensatory mitigation amounts.
2. A Project modification shall not be granted a Certification Deviation if it warrants or necessitates changes that are not addressed by the Order conditions or the CEQA environmental document such that the Project impacts are not addressed in the Project's environmental document or the conditions of this Order. In this case a supplemental environmental review and different Order will be required.

[9] Methods: establishment (Est.), reestablishment (Re-est.), rehabilitation (Reh.), enhancement (Enh.), preservation (Pres.).

XV. Water Quality Certification

I hereby issue the Order for the Three Creeks Parkway Restoration Project, (WDID#5B07CR00187) certifying that as long as all of the conditions listed in this Order are met, any discharge from the referenced Project will comply with the applicable provisions of Clean Water Act sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards). The Central Valley Water Board, as lead agency, hereby adopts an initial study/mitigated negative declaration (IS/MND) (State Clearinghouse (SCH) No. 2016082008) and approves the mitigation monitoring and reporting program (MMRP) for the Project.

This discharge is also regulated pursuant to State Water Board Water Quality Order No. 2003-0017-DWQ which authorizes this Order to serve as Waste Discharge Requirements pursuant to the Porter-Cologne Water Quality Control Act (Wat. Code, § 13000 et seq.).

Except insofar as may be modified by any preceding conditions, all Order actions are contingent on: (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the conditions of this Order and the attachments to this Order; and, (b) compliance with all applicable requirements of Statewide Water Quality Control Plans and Policies, the Regional Water Boards' Water Quality Control Plans and Policies.

Original Signed By Adam Laputz for:

Pamela C. Creedon Executive Officer Central Valley Regional Water Quality Control Board	16 March 2018 Date

Attachment A	Project Map
Attachment B	Receiving Waters, Impact, and Mitigation Information
Attachment C	CEQA Findings of Facts
Attachment D	Report and Notification Requirements
Attachment E	Signatory Requirements
Attachment F	Certification Deviation Procedures

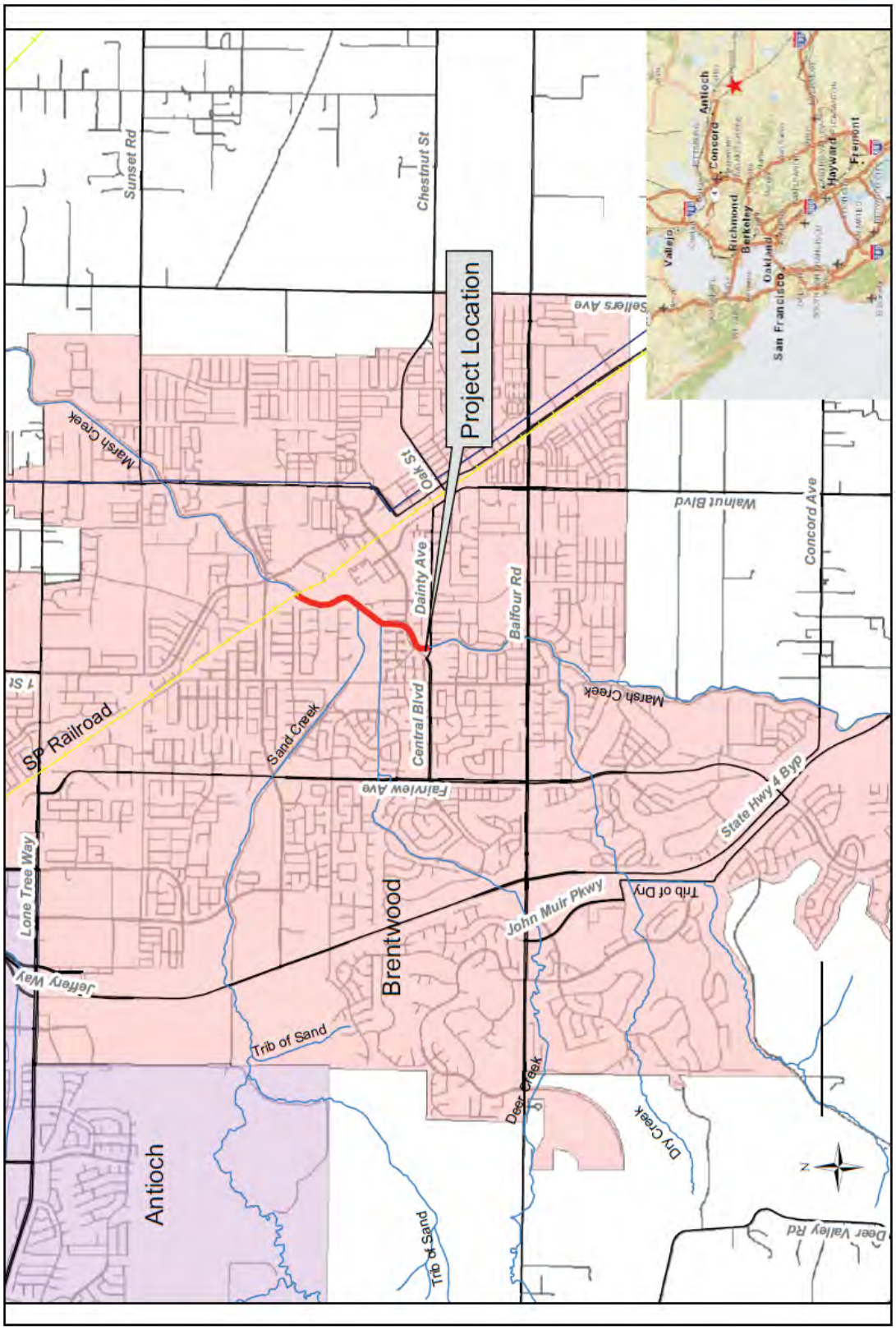


Figure 1: Project Location Map

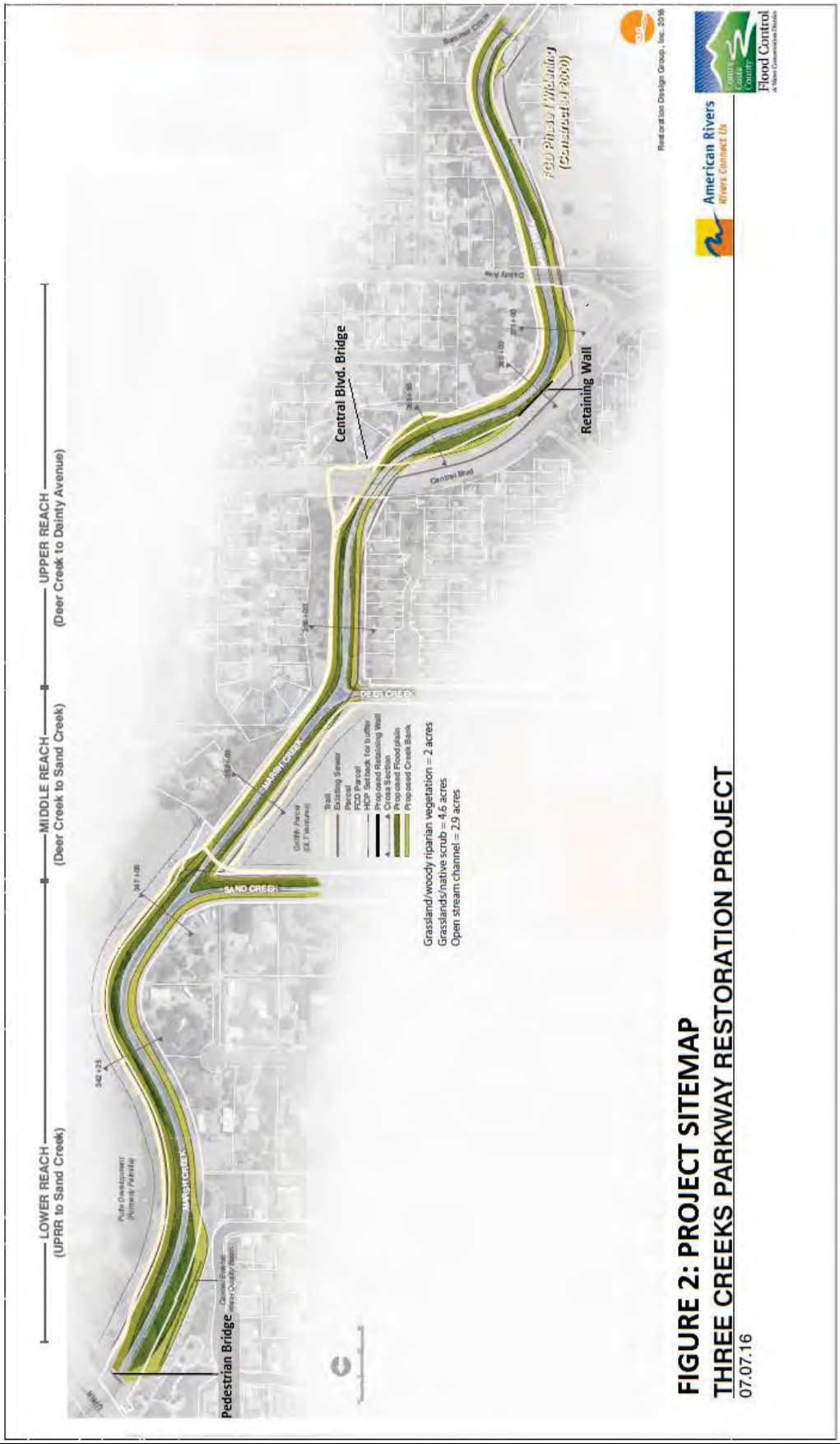


FIGURE 2: PROJECT SITEMAP

THREE CREEKS PARKWAY RESTORATION PROJECT

07.07.16

Receiving Waters

The following table shows the receiving waters associated with each impact site.

Table 1: Receiving Water(s) Information

Non-Federal Waters	Impact Site ID	Waterbody Name	Impacted Aquatic Resource Type	Water Board Hydrologic Units	Receiving Waters	Receiving Waters Beneficial Uses	303d Listing Pollutant	eCRAM ID[10]
☐	Site 01	*Marsh Creek*	*Stream*	*544.00*	*Marsh Creek*	*MUN, AGR, PROC, IND, REC-1, REC-2, WARM, COLD, MIGR, SPWN, WILD, NAV*	*Diazinon, E. coli, Mercury, Sediment toxicity, Unknown toxicity*	*N/A*
☐	Site 02		*Riparian Zone (below OHWM)*					

Individual Direct Impact Locations

The following table shows individual impact locations.

Table 2: Individual Direct Impact Information

Site ID	Latitude	Longitude	Indirect Impact Requiring Mitigation		Direct Impact Duration	Dredge			Fill/Excavation		
			Yes	No		Acres	Cubic Yards	Linear Feet	Acres	Cubic Yards	Linear Feet
1. Site 01	37°55'50.1"	-121°42'38.9"	☐	☒	Temporary	-	-	-	2.5	-	4,000
					Permanent	-	-	-	-	-	-
2. Site 02	37°55'50.1"	-121°42'38.9"	☐	☒	Temporary	-	-	-	2.0	-	4,000
					Permanent	-	-	-	-	-	-

[10] California Rapid Assessment Method (CRAM) score of impacted sites provided by the Permittee.

A. Environmental Review

On 3 August 2016, the Contra Costa County, as lead agency, adopted an Initial Study/Mitigated Negative Declaration (IS/MND) (State Clearinghouse (SCH) No. 2016082008) for the Project and filed a Notice of Determination (NOD) at the SCH on 9 January 2017. The Central Valley Water Board is a responsible agency under CEQA (Pub. Resources Code, § 21069) and in making its determinations and findings, must presume that Contra Costa County's adopted environmental document complies with the requirements of CEQA and is valid. (Pub. Resources Code, § 21167.3.) The Central Valley Water Board has reviewed and considered the environmental document and finds that the environmental document prepared by Contra Costa County addresses the Project's water quality impacts. (Cal. Code Regs., tit. 14, § 15096, subd. (f).) The environmental document includes the mitigation monitoring and reporting program (MMRP) developed by Contra Costa County for all mitigation measures that have been adopted for the Project to reduce potential significant impacts. (Pub. Resources Code, § 21081.6, subd. (a)(1); Cal. Code Regs., tit. 14, § 15074, subd. (d).)

B. Incorporation by Reference

Pursuant to CEQA, these Findings of Facts (Findings) support the issuance of this Order based on the Project IS/MND, the application for this Order, and other supplemental documentation.

All CEQA project impacts, including those discussed in subsection C below, are analyzed in detail in the Project Final IS/MND which is incorporated herein by reference. The Project IS/MND is available at: 255 Glacier Drive, Martinez, California 94553.
Requirements under the purview of the Central Valley Water Board in the MMRP are incorporated herein by reference.

The Permittee's application for this Order, including all supplemental information provided, is incorporated herein by reference.

C. Findings

The IS/MND describes the potential significant environmental effects to water quality that were mitigated in the IS/MND. Having considered the whole of the record, including comments received during the public review process, the Central Valley Water Board makes the following findings:

(1) Revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and

(2) There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment. (Cal. Code Regs., tit. 14, § 15070.)

<u>a.i. Potential Significant Impact:</u> Potential for increased erosion, sedimentation, and discharge of polluted runoff from the project site. Potential to decrease creek flow velocities and erosion potential while improving water quality.

a.ii. Facts in Support of Finding: Enrollment in NPDES program and development and implementation of a SWPPP would ensure construction activities do not exceed Central Valley Water Board water quality standards; The project would reduce the potential for erosion and sediment transport by lowering the water stage, reducing the velocity by widening the cross-sectional velocity of the channel, and establishing native riparian vegetation where compatible with the flood management objectives; The planting of vegetation such as trees along the widened creek channel would provide shade for surface waters, thereby decreasing water temperatures and increasing the currently low dissolved oxygen levels; **BIO-4:** Impacts on waters of the U.S. will be avoided by restricting grading to an elevation above the OHWM; avoidance of impacts to waters of the State is not feasible. Long-term impacts shall be minimized by limiting the use of hardened structures (e.g., grouted riprap) in preference of bioengineering solutions as much as is practicable. Surface water connections must not be permanently blocked or interrupted and the installation of drop-structures or other features that create barriers to wildlife movement shall be avoided.

For all work within and adjacent to the stream channel and riparian habitat, best management practices (BMPs) must be incorporated into the project design to minimize environmental effects.

D. Determination

The Central Valley Water Board has determined that the Project, when implemented in accordance with the MMRP and the conditions in this Order, will not result in any significant adverse water quality impacts. (Cal. Code Regs., tit. 14, § 15096, subd (h).) The Central Valley Water Board will file a NOD with the SCH within five (5) working days from the issuance of this Order. (Cal. Code Regs., tit. 14, § 15096, subd. (i).)

Copies of this Form

In order to identify your project, it is necessary to include a copy of the Project specific Cover Sheet below with your report: please retain for your records. If you need to obtain a copy of the Cover Sheet you may download a copy of this Order as follows:

1. Go to: http://www.waterboards.ca.gov/water_issues/programs/cwa401/certifications.shtml

2. Find your Order in the table based on Applicant, Date, and Subject headers.

Report Submittal Instructions

1. Check the box on the Report and Notification Cover Sheet next to the report or notification you are submitting.

- **Part A (Annual Report):** This report will be submitted annually from the anniversary of Project effective date until a Notice of Project Complete Letter is issued.
- **Part B (Project Status Notifications):** Used to notify the Central Valley Water Board of the status of the Project schedule that may affect Project billing.
- **Part C (Conditional Notifications and Reports):** Required on a case by case basis for accidental discharges of hazardous materials, violation of compliance with water quality standards, notification of in-water work, or other reports.

2. Sign the Report and Notification Cover Sheet and attach all information requested for the Report Type.

3. Electronic Report Submittal Instructions:

- Submit signed Report and Notification Cover Sheet and required information via email to: centralvalleysacramento@waterboards.ca.gov and cc: Nicholas.White@waterboards.ca.gov
- Include in the subject line of the email:
  Subject: ATTN: Nicholas White; Reg. Measure ID: 416152_Report

Definition of Reporting Terms

1. **Active Discharge Period:** The active discharge period begins with the effective date of this Order and ends on the date that the Permittee receives a Notice of Completion of Discharges Letter or, if no post-construction monitoring is required, a Notice of Project Complete Letter. The Active Discharge Period includes all elements of the Project including site construction and restoration, and any Permittee responsible compensatory mitigation construction.

2. **Request for Notice of Completion of Discharges Letter:** This request by the Permittee to the Central Valley Water Board staff pertains to projects that have post construction monitoring requirements, e.g. if site restoration was required to be monitored for 5 years following construction. Central Valley Water Board staff will review the request and send a Completion of Discharges Letter to

the Permittee upon approval. This letter will initiate the post-discharge monitoring period and a change in fees from the annual active discharge fee to the annual post-discharge monitoring fee.

3. **Request for Notice of Project Complete Letter:** This request by the Permittee to the Central Valley Water Board staff pertains to projects that either have completed post-construction monitoring and achieved performance standards or have no post-construction monitoring requirements, and no further Project activities are planned. Central Valley Water Board staff will review the request and send a Project Complete Letter to the Permittee upon approval. Termination of annual invoicing of fees will correspond with the date of this letter.

4. **Post-Discharge Monitoring Period:** The post-discharge monitoring period begins on the date of the Notice of Completion of Discharges Letter and ends on the date of the Notice of Project Complete Letter issued by the Central Valley Water Board staff. The Post-Discharge Monitoring Period includes continued water quality monitoring or compensatory mitigation monitoring.

5. **Effective Date:** 16 March 2018.

Map/Photo Documentation Information

When submitting maps or photos, please use the following formats.

1. **Map Format Information:**
   Preferred map formats of at least 1:24000 (1" = 2000') detail (listed in order of preference):
   - **GIS shapefiles**: The shapefiles must depict the boundaries of all project areas and extent of aquatic resources impacted. Each shape should be attributed with the extent/type of aquatic resources impacted. Features and boundaries should be accurate to within 33 feet (10 meters). Identify datum/projection used and if possible, provide map with a North American Datum of 1983 (NAD38) in the California Teale Albers projection in feet.
   - **Google KML files** saved from Google Maps: My Maps or Google Earth Pro. Maps must show the boundaries of all project areas and extent/type of aquatic resources impacted. Include URL(s) of maps. If this format is used include a spreadsheet with the object ID and attributed with the extent/type of aquatic resources impacted.
   - **Other electronic format** (CAD or illustration format) that provides a context for location (inclusion of landmarks, known structures, geographic coordinates, or USGS DRG or DOQQ). Maps must show the boundaries of all project areas and extent/type of aquatic resources impacted. If this format is used include a spreadsheet with the object ID and attributed with the extent/type of aquatic resources impacted.
   - Aquatic resource maps marked on paper **USGS 7.5 minute topographic maps** or **Digital Orthophoto Quarter Quads (DOQQ)** printouts. Maps must show the boundaries of all project areas and extent/type of aquatic resources impacted. If this format is used include a spreadsheet with the object ID and attributed with the extent/type of aquatic resources impacted.

2. **Photo-Documentation:** Include a unique identifier, date stamp, written description of photo details, and latitude/longitude (in decimal degrees) or map indicating location of photo. Successive photos should be taken from the same vantage point to compare pre/post construction conditions.

REPORT AND NOTIFICATION COVER SHEET

Project:	Three Creeks Parkway Restoration Project		
Permittee:	Contra Costa County Flood Control		
Reg. Meas. ID:	416152	**Place ID:**	830777
WDID:	5B07CR00187	**Construction Storm Water General Permit WDID#:**	_____
Order Effective Date:	16 March 2018		
Order Expiration Date:	15 March 2023		

Report Type Submitted

Part A – Project Reporting		
Report Type 1	☐	**Monthly Report # _____**
Report Type 2	☐	**Annual Report # _____**
Part B - Project Status Notifications		
Report Type 3	☐	**Commencement of Construction**
Report Type 4	☐	**Request for Notice of Completion of Discharges Letter**
Report Type 5	☐	**Request for Notice of Project Complete Letter**
Part C - Conditional Notifications and Reports		
Report Type 6	☐	**Accidental Discharge of Hazardous Material Report**
Report Type 7	☐	**Violation of Compliance with Water Quality Standards Report**
Report Type 8	☐	**In-Water Work/Diversions Water Quality Monitoring Report**
Report Type 9	☐	**Modifications to Project Report**
Report Type 10	☐	**Transfer of Property Ownership Report**
Report Type 11	☐	**Transfer of Long-Term BMP Maintenance Report**

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Print Name [1]	**Affiliation and Job Title**
Signature	**Date**

[1]STATEMENT OF AUTHORIZATION (include if authorization has changed since application was submitted)

I hereby authorize _____ to act in my behalf as my representative in the submittal of this report, and to furnish upon request, supplemental information in support of this submittal.

_____ _____
Permittee's Signature Date

***This Report and Notification Cover Sheet must be signed by the Permittee or a duly authorized representative and included with all written submittals.**

Part A – Project Reporting

Report Type 1	Monthly Report
Report Purpose	Notifies Central Valley Water Board staff of the Project status and environmental compliance activities on a monthly basis.
When to Submit	On the 1st day of each month beginning the month after the submittal of the Commencement of Construction Notification until a Notice of Project Complete Letter is issued to the Permittee.
Report Contents	**1. Construction Summary** Describe Project progress and schedule including initial ground disturbance, site clearing and grubbing, road construction, site construction, and the implementation status of construction storm water Best Management Practices (BMPs[11]). If construction has not started, provide estimated start date. **2. Event Summary** Describe distinct Project activities and occurrences, including environmental monitoring, surveys, and inspections. **3. Photo Summary** Provide photos of Project activities. For each photo, include a unique site identifier, date stamp, written description of photo details, and latitude/longitude (in decimal degrees) or map indicating location of photo. Successive photos should be taken from the same vantage point to compare pre/post construction conditions. **4. Compliance Summary** **a)** List name and organization of environmental surveyors, monitors, and inspectors involved with monitoring environmental compliance for the reporting period. **b)** List associated monitoring reports for the reporting period. Include sampling reports. If no sampling was required, a monitoring report must be submitted stated, “No sampling was required”. **c)** Summarize observed incidences of non-compliance, compliance issues, minor problems, or occurrences. **d)** Describe each observed incidence in detail. List monitor name and organization, date, location, type of incident, corrective action taken (if any), status, and resolution.

[11] Best Management Practices (BMPs) is a term used to describe a type of water pollution or environmental control.

Report Type 2	**Annual Report – Not Applicable**
Report Purpose	-
When to Submit	Not Required
Report Contents	-
Annual Report Topics (1-3)	
Annual Report Topic 1	**Construction Summary – Not Applicable**
When to Submit	Not Required
Report Contents	-
Annual Report Topic 2	**Mitigation for Temporary Impacts Status – Not Applicable**
When to Submit	Not Required
Report Contents	-
Annual Report Topic 3	**Compensatory Mitigation for Permanent Impacts Status – Not Applicable**
When to Submit	Not Required
Report Contents	-

Part B – Project Status Notifications

Report Type 3	Commencement of Construction
Report Purpose	Notify Central Valley Water Board staff prior to the start of construction.
When to Submit	Must be received at least seven (7) days prior to start of initial ground disturbance activities.
Report Contents	**1.** Date of commencement of construction. **2.** Anticipated date when discharges to waters of the state will occur. **3.** Project schedule milestones including a schedule for onsite compensatory mitigation, if applicable. **4.** Construction Storm Water General Permit WDID No.

Report Type 4	Request for Notice of Completion of Discharges Letter
Report Purpose	Notify Central Valley Water Board staff that post-construction monitoring is required and that active Project construction, including any mitigation and permittee responsible compensatory mitigation, is complete.
When to Submit	Must be received by Central Valley Water Board staff within thirty (30) days following completion of all Project construction activities.
Report Contents	**1.** Status of storm water Notice of Termination(s), if applicable. **2.** Status of post-construction storm water BMP installation. **3.** Pre- and post-photo documentation of all Project activity sites where the discharge of dredge and/or fill/excavation was authorized. **4.** Summary of Certification Deviation discharge quantities compared to initial authorized impacts to waters of the state, if applicable. **5.** An updated monitoring schedule for mitigation for temporary impacts to waters of the state and permittee responsible compensatory mitigation during the post-discharge monitoring period, if applicable.

Report Type 5	Request for Notice of Project Complete Letter
Report Purpose	Notify Central Valley Water Board staff that construction and/or any post-construction monitoring is complete, or is not required, and no further Project activity is planned.
When to Submit	Must be received by Central Valley Water Board staff within thirty (30) days following completion of all Project activities.
Report Contents	**Part A: Mitigation for Temporary Impacts** **1.** A report establishing that the performance standards outlined in the restoration plan have been met for Project site upland areas of temporary disturbance which could result in a discharge to waters of the state. **2.** A report establishing that the performance standards outlined in the restoration plan have been met for restored areas of temporary impacts to waters of the state. Pre- and post-photo documentation of all restoration sites.

	Part B: Permittee Responsible Compensatory Mitigation **3.** A report establishing that the performance standards outlined in the compensatory mitigation plan have been met. **4.** Status on the implementation of the long-term maintenance and management plan and funding of endowment. **5.** Pre- and post-photo documentation of all compensatory mitigation sites. **6.** Final maps of all compensatory mitigation areas (including buffers). **Part C: Post-Construction Storm Water BMPs** **7.** Date of storm water Notice of Termination(s), if applicable. **8.** Report status and functionality of all post-construction BMPs.

Part C – Conditional Notifications and Reports

Report Type 6	Accidental Discharge of Hazardous Material Report
Report Purpose	Notifies Central Valley Water Board staff that an accidental discharge of hazardous material has occurred.
When to Submit	Within five (5) working days following the date of an accidental discharge. Continue reporting as required by Central Valley Water Board staff.
Report Contents	**1.** The report shall include the OES Incident/Assessment Form, a full description and map of the accidental discharge incident (i.e. location, time and date, source, discharge constituent and quantity, aerial extent, and photo documentation). If applicable, the OES Written Follow-Up Report may be substituted. **2.** If applicable, any required sampling data, a full description of the sampling methods including frequency/dates and times of sampling, equipment, locations of sampling sites. **3.** Locations and construction specifications of any barriers, including silt curtains or diverting structures, and any associated trenching or anchoring.

Report Type 7	Violation of Compliance with Water Quality Standards Report
Report Purpose	Notifies Central Valley Water Board staff that a violation of compliance with water quality standards has occurred.
When to Submit	The Permittee shall report any event that causes a violation of water quality standards within three (3) working days of the noncompliance event notification to Central Valley Water Board staff.
Report Contents	The report shall include: the cause; the location shown on a map; and the period of the noncompliance including exact dates and times. If the noncompliance has not been corrected, include: the anticipated time it is expected to continue; the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and any monitoring results if required by Central Valley Water Board staff.

Report Type 8	In-Water Work and Diversions Water Quality Monitoring Report
Report Purpose	Notifies Central Valley Water Board staff of the start and completion of in-water work. Reports the sampling results during in-water work and during the entire duration of temporary surface water diversions.
When to Submit	Forty-eight (48) hours prior to the start of in-water work. Within three (3) working days following the completion of in-water work. Surface water monitoring reports to be submitted two (2) weeks on initiation of in-water construction and during entire duration of temporary surface water diversions. Continue reporting in accordance with the approved water quality monitoring plan or as indicated in XIV.C.3.
Report Contents	As required by the approved water quality monitoring plan or as indicated in XIV.C.3.

Report Type 9	**Modifications to Project Report**
Report Purpose	Notifies Central Valley Water Board staff if the Project, as described in the application materials, is altered in any way or by the imposition of subsequent permit conditions by any local, state or federal regulatory authority.
When to Submit	If Project implementation as described in the application materials is altered in any way or by the imposition of subsequent permit conditions by any local, state or federal regulatory authority.
Report Contents	A description and location of any alterations to Project implementation. Identification of any Project modifications that will interfere with the Permittee's compliance with the Order.

Report Type 10	**Transfer of Property Ownership Report**
Report Purpose	Notifies Central Valley Water Board staff of change in ownership of the Project or Permittee-responsible mitigation area.
When to Submit	At least 10 working days prior to the transfer of ownership.
Report Contents	**1.** A statement that the Permittee has provided the purchaser with a copy of this Order and that the purchaser understands and accepts: **a.** the Order's requirements and the obligation to implement them or be subject to administrative and/or civil liability for failure to do so; and **b.** responsibility for compliance with any long-term BMP[12] maintenance plan requirements in this Order. **2.** A statement that the Permittee has informed the purchaser to submit a written request to the Central Valley Water Board to be named as the permittee in a revised order.

Report Type 11	**Transfer of Long-Term BMP Maintenance Report**
Report Purpose	Notifies Central Valley Water Board staff of transfer of long-term BMP maintenance responsibility.
When to Submit	At least 10 working days prior to the transfer of BMP maintenance responsibility.
Report Contents	A copy of the legal document transferring maintenance responsibility of post-construction BMPs.

[12] Best Management Practices (BMPs) is a term used to describe a type of water pollution or environmental control.

SIGNATORY REQUIREMENTS

All Documents Submitted In Compliance With This Order Shall Meet The Following Signatory Requirements:

1. All applications, reports, or information submitted to the Central Valley Water Quality Control Board (Central Valley Water Board) must be signed and certified as follows:

   a) For a corporation, by a responsible corporate officer of at least the level of vice-president.
   b) For a partnership or sole proprietorship, by a general partner or proprietor, respectively.
   c) For a municipality, or a state, federal, or other public agency, by either a principal executive officer or ranking elected official.

2. A duly authorized representative of a person designated in items 1.a through 1.c above may sign documents if:

   a) The authorization is made in writing by a person described in items 1.a through 1.c above.
   b) The authorization specifies either an individual or position having responsibility for the overall operation of the regulated activity.
   c) The written authorization is submitted to the Central Valley Water Board Staff Contact prior to submitting any documents listed in item 1 above.

3. Any person signing a document under this section shall make the following certification:

   "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Certification Deviation Procedures

Introduction

These procedures are put into place to preclude the need for Order amendments for minor changes in the Project routing or location. Minor changes or modifications in project activities are often required by the Permittee following start of construction. These deviations may potentially increase or decrease impacts to waters of the state. In such cases, a Certification Deviation, as defined in Section M of the Order, may be requested by the Permittee as set forth below:

Process Steps

Who may apply: The Permittee or the Permittee's duly authorized representative or agent (hereinafter, "Permittee") for this Order.

How to apply: By letter or email to the 401 staff designated as the contact for this Order.

Certification Deviation Request: The Permittee will request verification from the Central Valley Water Board staff that the project change qualifies as a Certification Deviation, as opposed to requiring an amendment to the Order. The request should:

1. Describe the Project change or modification:
    a. Proposed activity description and purpose;
    b. Why the proposed activity is considered minor in terms of impacts to waters of the state;
    c. How the Project activity is currently addressed in the Order; and,
    d. Why a Certification Deviation is necessary for the Project.
2. Describe location (latitude/longitude coordinates), the date(s) it will occur, as well as associated impact information (i.e., temporary or permanent, federal or non-federal jurisdiction, water body name/type, estimated impact area, etc.) and minimization measures to be implemented.
3. Provide all updated environmental survey information for the new impact area.
4. Provide a map that includes the activity boundaries with photos of the site.
5. Provide verification of any mitigation needed according to the Order conditions.
6. Provide verification from the CEQA Lead Agency that the proposed changes or modifications do not trigger the need for a subsequent environmental document, an addendum to the environmental document, or a supplemental EIR. (Cal. Code Regs., tit. 14, §§ 15162-15164.)

Post-Discharge Certification Deviation Reporting:

1. Within 30 calendar days of completing the approved Certification Deviation activity, the Permittee will provide a post-discharge activity report that includes the following information:
    a. Activity description and purpose;
    b. Activity location, start date, and completion date;
    c. Erosion control and pollution prevention measures applied;
    d. The net change in impact area by water body type(s) in acres, linear feet and cubic yards;
    e. Mitigation plan, if applicable; and,
    f. Map of activity location and boundaries; post-construction photos.

Annual Summary Deviation Report:

1. Until a Notice of Completion of Discharges Letter or Notice of Project Complete Letter is issued, include in the Annual Project Report (see Construction Notification and Reporting attachment) a compilation of all Certification Deviation activities through the reporting period with the following information:
    a. Site name(s).
    b. Date(s) of Certification Deviation approval.
    c. Location(s) of authorized activities.
    d. Impact area(s) by water body type prior to activity in acres, linear feet and cubic yards, as originally authorized in the Order.
    e. Actual impact area(s) by water body type in, acres, linear feet and cubic yards, due to Certification Deviation activity(ies).
    f. The net change in impact area by water body type(s) in acres, linear feet and cubic yards;
    g. Mitigation to be provided (approved mitigation ratio and amount).

404 Water Quality Certification (USACE)

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

October 28, 2019

Regulatory Division (SPK-2016-00934)

Contra Costa County Flood Control and Water Conservation District
Attn: Mr. Mike Carlson
2612 8th Street, Suite B
Berkeley, California 94710

Dear Mr. Carlson:

We are responding to your June 10, 2019, request for a Department of the Army permit for the Three Creeks Parkway Restoration project. This approximately 23.08-acre project involves activities, including discharges of dredged or fill material, in waters of the United States, to construct a improve flood conveyance capacity and restore ecological function along an approximately 4,000 linear foot section of Marsh Creek. The project site is located along Marsh Creek at the confluences of Sand Creek and Deer Creek, Latitude 37.938389°, Longitude -121.707037°, Brentwood, East Contra Costa County, California.

Based on the information you provided, the proposed activity, resulting in the permanent loss of approximately 0.048-acre of perennial stream and temporary impacts to approximately 0.16-acre of perennial stream, is authorized by Regional General Permit number 1*, Minimal Impact Activities - East Contra Costa* County. Your work must comply with the terms and conditions of Regional General Permit number 1, which are available on our website at *http://www.spk.usace.army.mil/Missions/Regulatory/Permitting/Regional-and-Programmatic-General-Permits/*. In addition, your work must comply with the following special conditions:

Special Conditions

1. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you shall immediately notify this office of what you have found. This office will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

You must sign the enclosed Compliance Certification and return it to this office within 30 days after completion of the work in waters of the U.S. authorized by this permit.

This verification is valid for 5 years from the date of this letter or until the Regional General Permit is modified, reissued, or revoked, whichever comes first. Failure to comply with the terms and conditions, including project-specific Special Conditions of this authorization, may result in the suspension or revocation of your authorization.

We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website under *Customer Service Survey*.

Please refer to identification number SPK-2016-00934 in any correspondence concerning this project. If you have any questions, please contact Chandra Jenkins, by email at *Chandra.L.Jenkins@usace.army.mil*, or telephone at (916) 557-6652. For more information regarding our program, please visit our website at *www.spk.usace.army.mil/Missions/Regulatory.aspx*.

Sincerely,

Chandra Jenkins
Senior Project Manager
California Delta Section

Enclosures

cc: (w/o encls)
Mr. Rich Walking, Restoration Design Group, Rich@RGDmail.com
Ms. Stephanie Jentsch, U.S. Fish and Wildlife Service, Stephanie_Jentsch@FWS.gov
Ms. Kristin McCleery, National Marine Fisheries Service, Kristin.McCleery@NOAA.gov
Ms. Koren Tippett, California Office of Historic Preservation, Koren.Tippett@Parks.ca.gov
Mr. Nocholas White, Central Valley Regional Water Quality Control Board, Nicholas.White@Waterboards.ca.gov

COMPLIANCE CERTIFICATION

Permit File Number: SPK-2016-00934

Regional General Permit Number:

Permittee: Contra Costa County Flood Control & Water Cons. District
Attn: Mr. Mike Carlson
255 Glacier Drive
Martinez, California 94553

County: Contra Costa County

Date of Verification: October 28, 2019

Within 30 days after completion of the activity authorized by this permit, sign this certification and return it to the following address:

U.S. Army Corps of Engineers
Sacramento District

DLL-CESPK-RD-Compliance@usace.army.mil

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with the terms and conditions of the permit your authorization may be suspended, modified, or revoked. If you have any questions about this certification, please contact the U.S. Army Corps of Engineers.

* * * * * * * * *

I hereby certify that the work authorized by the above-referenced permit, including all the required mitigation, was completed in accordance with the terms and conditions of the permit verification.

_____ _____
Signature of Permittee Date

Regional General Permit 1

U.S. ARMY CORPS OF ENGINEERS BUILDING STRONG®

Minimal Impact Activities
East Contra Costa County, California

EFFECTIVE: June 6, 2017
EXPIRES: June 6, 2022

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee. The term "this office" refers to the U.S. Army Corps of Engineers, Sacramento District.

ISSUING OFFICE: U.S. Army Corps of Engineers, Sacramento District

ACTION ID: SPK-2001-00147

AUTHORITY: Section 404 of the Clean Water Act for the discharge of dredged or fill material in waters of the United States.

PURPOSE: The purpose of this RGP is to provide a simplified and expeditious means to authorize activities in waters of the United States (U.S.), including wetlands, that are substantially similar in nature and cause only minimal individual and cumulative impacts, within the area covered by the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP), dated December, 2006. This RGP is part of an overall strategy envisioned in the HCP/NCCP to balance the protection of important natural resources with long term economic development in the area covered by the HCP/NCCP. The HCP/NCCP is intended to enhance protection of important natural resources, including 28 listed and non-listed species and waters of the United States, by coordinating conservation activities at a regional and watershed scale, enabling protection of large, contiguous resource-rich areas and preservation of ecosystem processes and watershed functions. Appendix J of the HCP/NCCP contains a partial inventory and assessment of the functions and services of waters of the U.S. located within the HCP/NCCP Plan Area. The HCP/NCCP, associated documents and other program information are available to the public at: http://www.cocohcp.org. Definitions associated with this RGP are provided under the "Definitions" section at the end of the RGP.

LOCATION: The area covered by this RGP is east Contra Costa County, including the cities of Clayton, Brentwood, Oakley, and Pittsburg, and other areas of east Contra Costa County. It is geographically coincident with the "Plan Area" of the HCP/NCCP (see *Figures 1a* and *1b*).

ACTIVITIES COVERED: This RGP authorizes specific categories of activities with minimal individual and cumulative impacts on the aquatic environment that meet the terms and conditions of this permit. Temporary structures, fills, and work necessary to construct an activity authorized by this RGP (e.g., cofferdams, access roads) are allowed, provided such

work complies with the terms and conditions of this RGP inclusive of special conditions that the Corps may add. This RGP applies only to HCP/NCCP Covered Activities, as set forth in Section 2.3 of the HCP/NCCP (also see Definitions section). Any question as to whether a proposed activity is considered a Covered Activity under the HCP/NCCP shall be subject to confirmation by the East Contra Costa County Habitat Conservancy (Conservancy) (see Definitions section). The HCP/NCCP Covered Activities are divided among the following Activity categories in this RGP for purposes of assigning Activity-specific conditions (see section Activity Specific Conditions):

1. Residential, commercial, industrial, institutional, and other urban developments and associated infrastructure inside the Urban Limit Line of Contra Costa County or inside the City Limits of the Cities of Brentwood, Clayton, Oakley and Pittsburg, including but not limited to roads, utilities, parks, storm water management facilities, and water supply and delivery facilities. (Activity-specific conditions: 1 through 4).

2. Recreation projects, including parks, picnic areas, staging areas, trails and park maintenance facilities. Applies only to the activities set forth in Sections 2.3.2 and 2.3.4 of the HCP/NCCP. (Activity-specific conditions: 1 through 4).

3. Flood control detention basins, reservoirs[1], channels, and related facilities. Applies only to the specific planned facilities set forth in Section 2.3.2 of the HCP/NCCP. (Activity-specific conditions: 1 through 4).

4. Transportation projects, including road construction and widening, bicycle trails, rail projects, bridges and safety-related projects. Applies only to the specific planned facilities set forth in Section 2.3.2 of the HCP/NCCP. (General conditions apply only).

5. Wetland and stream restoration, creation, enhancement and management. Applies only to activities set forth in Sections 2.3.2 and 2.3.4 of the HCP/NCCP. (Activity-specific conditions: 1, 2 and 4).

6. Utility projects, including electrical transmission projects, cellular communication projects and pipelines. Applies only to the activities set forth in Sections 2.3.2 and 2.3.4 of the HCP/NCCP. (Activity-specific condition 4).

7. Maintenance, repair, rehabilitation or replacement of any previously authorized (under the RGP or other Corps permit), currently serviceable, structure or fill. Applies only to the maintenance activities set forth in Sections 2.3.1 and 2.3.3 of the HCP/NCCP. (General conditions apply only).

This RGP does not cover any activities in waters of the U.S. conducted in emergency situations.

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[1] The proposed Los Vaqueros Reservoir Expansion project is not covered by the HCP/NCCP as per Section 2.4 of the HCP/NCCP

PERMIT DURATION: This permit is valid for five years from issuance, and will expire on June 6, 2022. If this RGP is not modified or reissued by the expiration date, it automatically expires and becomes null and void. The Corps may re-evaluate the terms and conditions of this permit at any time it deems necessary to protect the public interest. This permit may be re-issued, after public notice and documentation of the decision. Activities under this permit must be verified in writing by the Corps. Verifications are valid until the permit expires.

TERMS OF AUTHORIZATION:

1. **Applying for RGP authorization**. Prior to commencing a proposed activity, applicants seeking authorization under this RGP shall notify the Corps in accordance with RGP general condition number 18 (Notification). If the Corps determines that an activity is not an eligible activity under the RGP, it will notify the applicant in writing within thirty (30) calendar days and provide instructions on the procedures to seek authorization under a standard permit, letter of permission or Nationwide permit. If the Corps determines that a proposed activity is eligible for coverage under the RGP, it will notify the applicant within 45 calendar days of receipt of a complete application. If the Corps does not provide a written response to the applicant within 45 calendar days following receipt of a complete application, the applicant may presume the proposed activity is an eligible activity that may be covered under the RGP, provided the activity complies with all other terms and conditions of the RGP.

2. **Impact Thresholds for waters of the U.S.** Impacts to waters of the U.S. shall be avoided and minimized to the maximum extent practicable. The loss of waters of the U.S. (including wetlands) resulting from individual project impacts may not exceed a total of 1.5 acres or more than 300 linear feet of perennial, intermittent or 3rd or higher order ephemeral streams (as defined in Table 2 of the RGP and further described in the HCP/NCCP), unless the linear foot limit is waived in writing by the Corps. Additional restrictions are listed in the General and Activity-Specific Conditions.

3. **Single and complete project**. The activity must be a single and complete project (see Definitions section). The same RGP authorization cannot be used more than once for the same single and complete project.

4. **After-the-fact projects**. This RGP may not be used to authorize activities after they have impacted waters of the U.S.

5. **Compliance with HCP/NCCP Conditions**. Activities to be authorized under this RGP must be HCP/NCCP Covered Activities and must fully comply with the HCP/NCCP. Compliance with the HCP/NCCP requires applicants to implement the appropriate conservation measures outlined in Chapter 6 of the HCP/NCCP.

6. **Special conditions**. The Corps may add special conditions to an authorization to ensure the activity complies with the terms and conditions of the RGP, and/or that adverse

impacts on the aquatic environment or other aspects of the public interest are individually and cumulatively minimal.

7. **Activity completion**. Any activity authorized by the Corps under the RGP shall be completed by the date specified in "Permit Duration," above. Furthermore, activities authorized under this RGP that have commenced or are under contract to commence will have 12 months from the date of the RGP's expiration, reissuance, modification or revocation to complete the activity under the terms and conditions of the RGP.

8. **Discretionary Authority**. The Corps has the discretion to suspend, modify, or revoke authorizations under this RGP. This discretionary authority may be used by the Corps to also further condition or restrict the applicability of the RGP for cases in which it has concerns associated with the Clean Water Act Section 404(b)(1) Guidelines, or regarding any public interest factor. Should the Corps determine that a proposed activity may have more than minimal individual or cumulative adverse impacts to aquatic resources or otherwise be contrary to the public interest, the Corps will modify the authorization to reduce or eliminate those adverse effects, or notify the applicant that the proposed activity is not authorized by the RGP and provide instructions on how to seek authorization under an individual permit. The Corps may restore authorization under the RGP at any time it determines that the reason for asserting discretionary authority has been resolved or satisfied by a condition, project modification, or new information. The Corps may also use its discretionary authority to modify, suspend, or revoke the RGP at any time.

GENERAL CONDITIONS:

The following general conditions apply to all Activity categories:

1. **Threatened and Endangered Species**: No activity is authorized under the RGP that does not comply with the mandatory terms and conditions of the USFWS's "Programmatic Biological Opinion for a Regional General Permit for the East Contra Costa Habitat Conservation Plan/Natural Community Conservation Plan, Contra Costa County, California" (USFWS #81420-2011-F-0655, dated April 30, 2012) (copy attached). The Biological Opinion contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" authorization under this RGP. Authorization under this RGP is conditional upon your compliance with all of the mandatory terms and conditions of the Biological Opinion. Failure to comply with the terms and conditions of the Biological Opinion would constitute non-compliance with the RGP. The USFWS is the appropriate authority to determine compliance with the terms and conditions of the Biological Opinion, and with the ESA. The permittee must comply with all applicable conditions of this Biological Opinion, including those ascribed to the Corps. If the proposed activity may affect Federally-listed endangered or threatened species that are not covered under the Programmatic Biological Opinion, specifically, species under the authority of the National Marine Fisheries Service, the Corps will initiate consultation with the National Marine Fisheries Service, pursuant to Section 7 of the Endangered Species Act, as appropriate.

2. **Water Quality Certification**: Section 401 Water Quality Certification is required for activities to be authorized by this RGP. The Corps may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal impacts, individually or cumulatively.

3. **Historic Properties**: No activity is authorized under the RGP if the activity may affect historic properties listed, or eligible for listing, in the National Register of Historic Places, until the requirements of Section 106 of the National Historic Preservation Act (NHPA), as amended, have been satisfied. Applicants must notify the Corps if the activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified historic properties. The Corps will consult with the State Historic Preservation Officer (SHPO), as appropriate, following the policy and procedural standards of 33 CFR Part 325 Appendix C .

4. **Unanticipated Cultural Resources Discoveries**: If any previously unknown historic, cultural or archeological remains or artifacts are discovered while accomplishing an activity authorized by this RGP, this permit, the applicant must immediately notify the Corps, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The Corps will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

5. **Fills within 100-Year Floodplains**: The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

6. **Bed and Bank Stabilization**: Bank stabilization activities are limited to: a) using the minimum amount of material needed for erosion protection; b) no more than 500 feet in length along the bank, unless this criterion is waived in writing by the Corps; and c) no more than an average of 1 cubic yard of material per running foot placed along the bank below the plane of the ordinary high water mark or high tide line, unless this criterion is waived in writing by the Corps.

7. **Best Management Practices**: Best Management Practices (BMPs) must be employed during construction and in project design to protect water quality and minimize impacts of stormwater runoff on aquatic resources. BMPs should be appropriately located in or adjacent to waters of the U.S. (e.g., silt curtains). The applicant shall employ the following BMPs, as appropriate and feasible, in designing and constructing the project. The applicant shall describe which BMPs are practicable as part of the notification procedure as per general condition #18, subpart (b):

a. Preservation of natural resource features on the project site (e.g., floodplains, wetlands, streams, and other drainageways, grasslands, woodlands, and native soils);

b. Preservation of natural water infiltration and storage characteristics of the site;

c. Minimization of new impervious surfaces in project design (impervious surfaces may be minimized through practices such as reducing road widths and clustering developments designed around open space);

d. Structural measures that provide water quality and quantity control;

e. Construction BMPs;

f. Low impact development (LID) BMPs.

Examples of structural BMPs include: vegetated natural buffers, grassed swales, infiltration trenches, level spreaders and channel grade controls. Examples of construction BMPs include: matting and filter fencing, or other barrier methods to intercept/capture sediment.

8. **Proper Maintenance**: Any authorized structure or fill shall be properly maintained, including maintenance necessary to ensure public safety and the movement of aquatic organisms.

9. **Aquatic Life Movements**: No activity may substantially disrupt the necessary life cycle movement of aquatic species indigenous to the water body, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low-flow conditions. If feasible, they should be designed as open-bottom culverts.

10. **Equipment**: Heavy equipment working in wetlands must be placed on mats, or other measures, such as low-ground pressure equipment, must be taken to minimize soil disturbance.

11. **Tribal Rights**: No activity or its operation may impair reserved Tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

12. **Water Supply Intakes**: No discharge of dredged or fill material may occur in the proximity of a public water supply intake, except where the discharge is for the repair or improvement of the intake structure(s), and/or adjacent bank stabilization.

13. **Suitable Material**: No discharge of dredged or fill material may consist of unsuitable material and material discharged must be free from toxic pollutants in toxic amounts (section 307 of the Clean Water Act). Unsuitable material includes, but is not limited to, trash, debris, car bodies, and asphalt.

14. **Management of Water Flows**: To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity,

and location of open waters if it benefits the aquatic environment (e.g., stream restoration project).

15. **Migratory Bird Breeding Areas**: Activities in waters of the U.S. that serve as breeding areas for migratory birds shall be avoided to the maximum extent practicable.

16. **Removal of Temporary Fills and Restoration of Affected Areas**: Temporary fills shall be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas shall be revegetated with native vegetation upon completion of the project. A restoration plan, which includes a 1-foot contour topographic map, must be submitted with the notification to the Corps.

17. **Compensatory Mitigation**: Compensatory mitigation for unavoidable impacts to waters of the U.S. must be accomplished by conforming to the minimum mitigation ratios set by the HCP/NCCP, as summarized in Table 1. Mitigation proposals are required to be consistent with the Federal mitigation rule (33 CFR Part 332).

a. The preferred mechanism for providing compensatory mitigation is by acquiring mitigation bank credits or in-lieu fee (ILF) program credits from a Corps-approved bank or ILF program, respectively. However, if an appropriate number and type of mitigation bank or ILF credits are not available at the time of notification (see general condition #18), permittee-responsible mitigation may be proposed. Pursuant to the Federal mitigation rule, the preference hierarchy for use of banks, ILF programs and permittee-responsible to fulfill compensatory mitigation requirements can be overridden based on project-specific considerations (33 CFR 332[b][2]).

b. Prior to proceeding with the activity authorized by this RGP, a final mitigation plan must be approved by the Corps, and mitigation fees (if applicable, e.g., bank and/or ILF program) must be paid. When mitigation fees are applicable, evidence of fee payment must be provided to the Corps before commencement of the activity authorized by this RGP can be initiated.

c. If the RGP verification includes permittee-responsible compensatory mitigation, the mitigation plan must contain a reporting procedure consistent with the Corps' mitigation rule (33 CFR Part 332.4[c][10]), Monitoring Requirements, as well as any Sacramento District and/or South Pacific Division compensatory mitigation guidance applicable at the time of application review.

18. **Notification**: The applicant shall provide written notification (i.e., a complete application) for a proposed activity to be authorized under the RGP prior to commencing the activity. The Corps' receipt of the complete application is the date when the Corps receives all required notification information from the applicant (see below). Written notification shall include all of the following:

a. A letter signed by the applicant requesting authorization under the RGP, identifying the Activity Category(s), a description of the proposed activity, the location of the activity (with latitude and longitude), and the area (in acres, and/or linear feet as applicable) of waters of the U.S., including wetlands, to be impacted;

b. For each general and applicable activity-specific condition of this RGP, a brief narrative describing how the activity would comply with the condition, or that the condition does not apply;

c. A vicinity map, plan-view and cross-section drawings clearly depicting the location, size and dimensions of the proposed activity, including areas to be used for access and staging. The drawings shall contain a title block, legend and scale, nearby structures, parcel boundaries, and dimensions of the proposed dock and associated access. Unless waived on a case by case basis at the Corps' discretion, all drawings shall comply with the Updated Map and Drawing Standards for the South Pacific Division Regulatory Program, which can be found at http://www.spd.usace.army.mil/Missions/Regulatory/Public-Notices-and-References/Article/651327/updated-map-and-drawing-standards/.

d. A delineation of aquatic resources in accordance with the Sacramento District's Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (available at http://www.spk.usace.army.mil/Portals/12/documents/regulatory/jd/minimum-standards/Minimum_Standards_for_Delineation_with_Template-final.pdf), or updated standards adopted by the Sacramento District, unless specifically waived by the Sacramento District.

e. A written statement explaining how the activity has been designed to avoid and minimize adverse effects, both temporary and permanent, to waters of the U.S.

f. A cultural resource survey report for the project site, including all staging, access and construction areas. The report must be prepared in accordance with the March 24, 2014, Sacramento District Guidelines for Compliance with Section 106 of the NHPA, which can be found at http://www.spk.usace.army.mil/Portals/12/documents/regulatory/sec-106-tribal/FINAL_2014-03-24_Section-106-Guidelines.pdf (or more recent guidance, if applicable).

If the Corps determines that the activity complies with the terms and conditions of the RGP, including confirmation that proposed impacts to aquatic resources are minimal, the Corps will notify the applicant in writing and include any special conditions deemed necessary. If the Corps determines the impacts of the proposed activity are more than minimal, the Corps will notify the applicant that the project does not qualify for authorization under the RGP and instruct the applicant on the procedures to seek authorization under an individual permit.

19. **Reporting Responsibilities**: The permittee must submit a letter report to the Corps within 30 days of project completion. The report will contain the following:

a. The Corps' file number;
b. Photographs showing pre- and post-construction project conditions;
c. A completed compliance certification.

20. **Access**: The permittee must allow representatives from the Corps to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of the permit.

21. **Transfer of RGP Authorization**: If the permittee sells the property associated with this permit, the permittee must obtain the signature and mailing address of the new owner on the permit verification letter, and forward a copy to this office to validate the transfer.

ACTIVITY SPECIFIC GENERAL CONDITIONS:

The following general conditions apply to Activity categories specified at the end of each condition.

1. **Stream Setbacks**. Consistent with the requirements of the HCP/NCCP, stream setbacks shall be established. See the HCP/NCCP for detailed stream setback requirements, summarized in Table 2 of this RGP. Waters of the U.S. shall not be filled in order to meet the buffer requirements (Activity categories 1, 2, 3 and 5).

2. **Permanent Protections**. All preserved, created, restored or enhanced waters of the U.S. and adjacent buffers on the project site shall be preserved and permanently protected through a deed restriction, conservation easement, or other appropriate real estate or legal instrument, consistent with the requirements of the HCP/NCCP as determined by the Corps. A recorded copy of the real estate instrument must be provided to the Corps prior to proceeding with any activity otherwise authorized by this RGP (Activity categories 1, 2, 3 and 5).

3. **Fencing and Signage**. Preserved areas on the project site must be fenced and signed as sensitive areas to discourage human disturbance (Activity categories 1, 2 and 3).

4. **Utility Lines**. All utility lines shall be constructed in accordance with the following:

a. The construction area for linear utility line projects shall be limited to a width of 75 feet, unless this limit is waived in writing by the Corps.

b. For utility line projects, directional drilling, clear span or other techniques that do not contact the waterbody shall be used if the waterbody contains perennial flow.

c. Material resulting from trench excavation may be temporarily sidecast (up to 60 days) into waters of the U.S., provided that the material is not placed in such a manner

that is dispersed by currents or other forces. The Corps may extend the period of temporary side casting for no more than a total of 180 days, where appropriate.

d. Utility lines must not adversely alter existing hydrology, including draining of wetlands. In wetland areas, utility line trenches shall be lined with clay, or other impermeable materials or structures (such as cut-off walls) to ensure that the trench through which the utility line is installed does not drain waters of the U.S. In addition, to prevent a french drain effect, gravel cannot be used as backfill material in the top 10 feet of the trench.

e. In wetland areas, the top 6”-12” of the trench shall be backfilled with topsoil excavated from the trench in the same stratification in which it was removed.

f. Excess material shall be removed to upland areas immediately upon completion of utility line construction in any segment of the project containing waters of the U.S. In no case shall the excess material be left in place until the entire utility line is completed.

g. The construction area, including unprotected slopes and streambanks, shall be stabilized (e.g., blanketed and seeded) immediately upon completion of the utility line construction in any segment of the project. In no case shall soil stabilization be delayed until the entire utility line is completed.

h. Temporarily disturbed construction areas must be restored to pre-construction conditions, including grading to original contours and revegetating (with native vegetation or other appropriate vegetation approved by the Corps) immediately upon completion of the project. A restoration plan, which includes a 1-foot contour topographic map, shall be submitted with notification (Activity categories 1, 2, 3, 5 and 6).

DEFINITIONS:

Activity is any discharge of dredged or fill material into waters of the U.S. under Section 404 of CWA.

Activity categories are descriptions of HCP/NCCP Covered Activities listed in this RGP for purposes of assigning activity-specific conditions.

Activity-specific conditions are RGP conditions that would apply to specified Activity categories defined in this RGP.

Applicant is the individual, organization, or company requesting authorization under the RGP.

Authorization is written verification by the Corps that an activity qualifies for, and may proceed under, the RGP provided all terms and conditions of the RGP are followed.

Compensatory mitigation is the restoration, establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved. See also "in-lieu fee" definition.

Complete application is all required notification materials that must be submitted by the applicant to the Corps, as listed in general condition #18. If all materials are not submitted, the application is considered incomplete.

Conservancy is the East Contra Costa County Habitat Conservancy, a joint exercise of powers agency formed by the Cities of Brentwood, Clayton, Oakley and Pittsburg and Contra Costa County to perform the role of Implementing Entity for the HCP/NCCP.

Emergency refers to the guidance provided in 33 CFR 325.2(e)(4): "…a situation which would result in an unacceptable hazard to life, a significant loss of property, or an immediate, unforeseen, and significant economic hardship if corrective action requiring a permit is not undertaken within a time period less than the normal time needed to process the application under standard procedures. This RGP does not cover any activities in waters of the U.S. conducted in emergency situations.

General conditions are RGP conditions that would apply to all activities authorized.

HCP/NCCP is the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan dated December, 2006. The United States Fish and Wildlife Service ("USFWS"), under incidental take permit TE 160958-0, and the California Department of Fish and Game ("CDFG"), under incidental take permit 2835-2007-01-03, have approved the HCP/NCCP and have authorized the "HCP/NCCP Permittees" to take certain species of plants and wildlife listed under the ESA and/or covered under the state of California's Natural Community Conservation Planning Act (NCCPA) while carrying out or approving certain development and other "covered activities." Take is defined under Federal and state laws.

HCP/NCCP Covered Activity means an activity or project within one of the categories of activities set forth in Section 2.3 of the HCP/NCCP that has been approved by an HCP/NCCP Permittee for coverage under the HCP/NCCP.

HCP/NCCP Permittee is any of the following eight local agencies that have approved the HCP/NCCP and have been authorized by USFWS and CDFG to take certain species, as take is defined respectively under Federal and state law. These are the Cities of Brentwood, Clayton, Oakley and Pittsburg, Contra Costa County, the Contra Costa County Flood Control and Water Conservation District, the Conservancy, and the East Bay Regional Park District.

Historic properties are as defined in 36 CFR Part 800.16(l). It means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term

includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

Impact is the direct and indirect loss of waters of the U.S., including wetlands, which results from the discharge of dredged and/or fill material into waters of the U.S. associated with implementation of a proposed activity. See also “loss of waters” definition.

Independent utility is a test to determine what constitutes a single and complete non-linear project in the Corps Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

In-lieu fee refers to an in-lieu fee (ILF) program as defined in 33 CFR Part 332.2. An ILF program involves the restoration, establishment (creation), enhancement and/or preservation of aquatic resources through funds paid to a governmental or non-profit natural resources management entity to satisfy compensatory mitigation (see above definition) requirements for Department of the Army (DA) permits. As required by 33 CFR Part 332.8(a), all ILF programs must be approved prior to being used to provide compensatory mitigation for projects authorized by the Corps.

Loss of waters of the U.S. refers to waters that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredge or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of an aquatic feature. The acreage of loss of waters of the U.S. is a threshold measurement of the impact to jurisdictional waters for determining if the project may qualify for the RGP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the acres or linear feet of stream bed that are filled or excavated as a result of the regulated activity.

Mitigation bank is a site where aquatic resources (e.g., wetlands, streams) are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation for impacts authorized by DA permits.

Notification is the submission of required information by the applicant to the Corps for a complete application.

Permittee is an entity that has received authorization to conduct activities in waters of the U.S. under this RGP.

Permittee-responsible mitigation refers to a type of compensatory mitigation as defined in 33 CFR Part 332.2, entailing aquatic resource restoration, establishment, enhancement, and/or

preservation activity undertaken by the permittee (or an authorized agent or contractor) to provide compensatory mitigation for which the permittee retains full responsibility.

Plan Area is the area shown in Figure 1-1 of the HCP/NCCP and *Figures 1a* and *1b* of this RGP. It is the area analyzed by the HCP/NCCP and covered by the USFWS and CDFG incidental take permits issued pursuant to the HCP/NCCP. In the HCP, the Plan Area is also referred to as the "Inventory Area." This RGP uses the term Plan Area.

Project site is the land, including waters of the U.S. and uplands, utilized for a single and complete project. The project site includes the land cleared, graded, and/or filled to construct the single and complete[2] project, including any buildings, utilities, stormwater management facilities, roads, yards, and other attendant features. Temporary construction areas (e.g., access and staging) are included. The project site also includes any other land and attendant features that are used in conjunction with the single and complete project, such as open space, roads and utilities.

Single and complete linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations, as defined in the Final Rule for Issuance of the 2017 Nationwide Permits (Federal Register Vol. 82[4], January 6, 2017).
Single and complete non-linear project is the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of ''independent utility'').

Special conditions are conditions added by the Corps for projects on a case-by case basis to ensure an activity has minimal impacts on aquatic resources and complies with the RGP. The Corps' authority to require special conditions is provided in 33 CFR Part 325.4(a).

Stream order refers to the numeric identification of the reaches within a stream network. This document follows the stream ordering system of Strahler (1964)[3]. In this system, a first order stream is a stream with an identifiable bed and bank, without any tributary streams. A second order stream is formed by the confluence of two first order streams. A third order stream is formed by the confluence of two second order streams, and so on. Addition of a lesser order stream does not change the stream order of the trunk stream.

Suspension is the temporary cancellation of the authorization while a decision is made to modify, revoke or reinstate the authorization.

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[2] Linear or non-linear (see definitions below).
[3] Strahler, A.N. 1964. Quantitative Geomorphology of drainage basins and channel networks; section 4-2, in *Handbook of Applied Hydrology*, ed. Ven te Chow, McGraw-Hill, New York.

Terms and conditions are the parameters, including thresholds, limitations and requirements, for completing an activity under the RGP. These parameters are described in each Activity category and in the general conditions and Activity-specific conditions. Special conditions may also be added by the Corps on individual authorizations to ensure an activity has minimal individual and cumulative impacts.

Urban Limit Line is the boundary for urban growth that has been set for Contra Costa County in the Contra Costa County General Plan, as amended from time to time.

Utility line is any pipeline used to transport a gaseous, liquid, liquefiable or slurry substance for any purpose, and any cable, line or wire used to transmit electrical energy, telephone, radio signals, television signals or data communication. This definition does not include pipes or ditches which serve to drain a water of the United States, such as drainage tile; however, it does apply to pipes conveying drainage from one area to another.

Waters of the U.S. are as defined in 33 CFR Part 328.3(a).

Definitions found at 33 CFR Parts 320-323, 325-329, and 331-332 and 40 CFR Part 230 are also applicable to this RGP and are incorporated by reference herein.

FURTHER INFORMATION:

1. Congressional Authorities: This RGP has been issued under Section 404 of the Clean Water Act (33 U.S.C. 1344).

2. District Engineers have the authority to determine if an activity complies with the terms and conditions of this RGP.

3. This RGP does not obviate the need to obtain other Federal, state, or local permits, approvals, or authorizations required by law.

4. This RGP does not grant any property rights or exclusive privileges.

5. This RGP does not authorize any injury to the property or rights of others.

6. This RGP does not authorize interference with any existing or proposed Federal project.

7. Limits of Federal Liability. In issuing this RGP, the Federal Government does not assume any liability for the following:

   a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

   b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

8. Reevaluation of Permit Decision. This office may reevaluate its decision on this RGP at any time the circumstances warrant. Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7.

9. Activities not meeting the terms and conditions of this RGP may be authorized through another type of permit, such as a Nationwide Permit, Letter of Permission, or Standard Permit. The Corps will determine on a case-by-case basis whether an activity has a more than minimal impact, individually or cumulatively, on the aquatic environment or may be contrary to the public interest. The Corps may include additional special conditions to any verification under this RGP to ensure the activity has minimal impact.

CONTACTS AND ADDITIONAL INFORMATION: For additional information about RGP 1, please contact the U.S. Army Corps of Engineers, Sacramento District at the address below, phone number (916) 557-5250.

ATTACHMENTS:

1. *Figure 1a*: General Location of HCP/NCCP Plan Area and Area Covered by RGP
2. *Figure 1b*: HCP/NCCP Plan Area and Area Covered by RGP
3. *Table 1*: Required Ratios and Estimated Preservation, Restoration, and Creation Requirements for Aquatic Land-Cover Types Under Initial and Maximum Urban Development Area
4. *Table 2*: Stream Setback Minimum Requirements for Streams
5. Programmatic Biological Opinion for a Regional General Permit for the East Contra Costa Habitat Conservation Plan/Natural Community Conservation Plan, Contra Costa County, California (USFWS #81420-2011-F-0655, dated April 30, 2012)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army has signed below.

Michael S. Jewell
Chief, Regulatory Division

6 June 2017
Date

Figure 1a: General Location of HCP/NCCP Plan Area and Area Covered by RGP

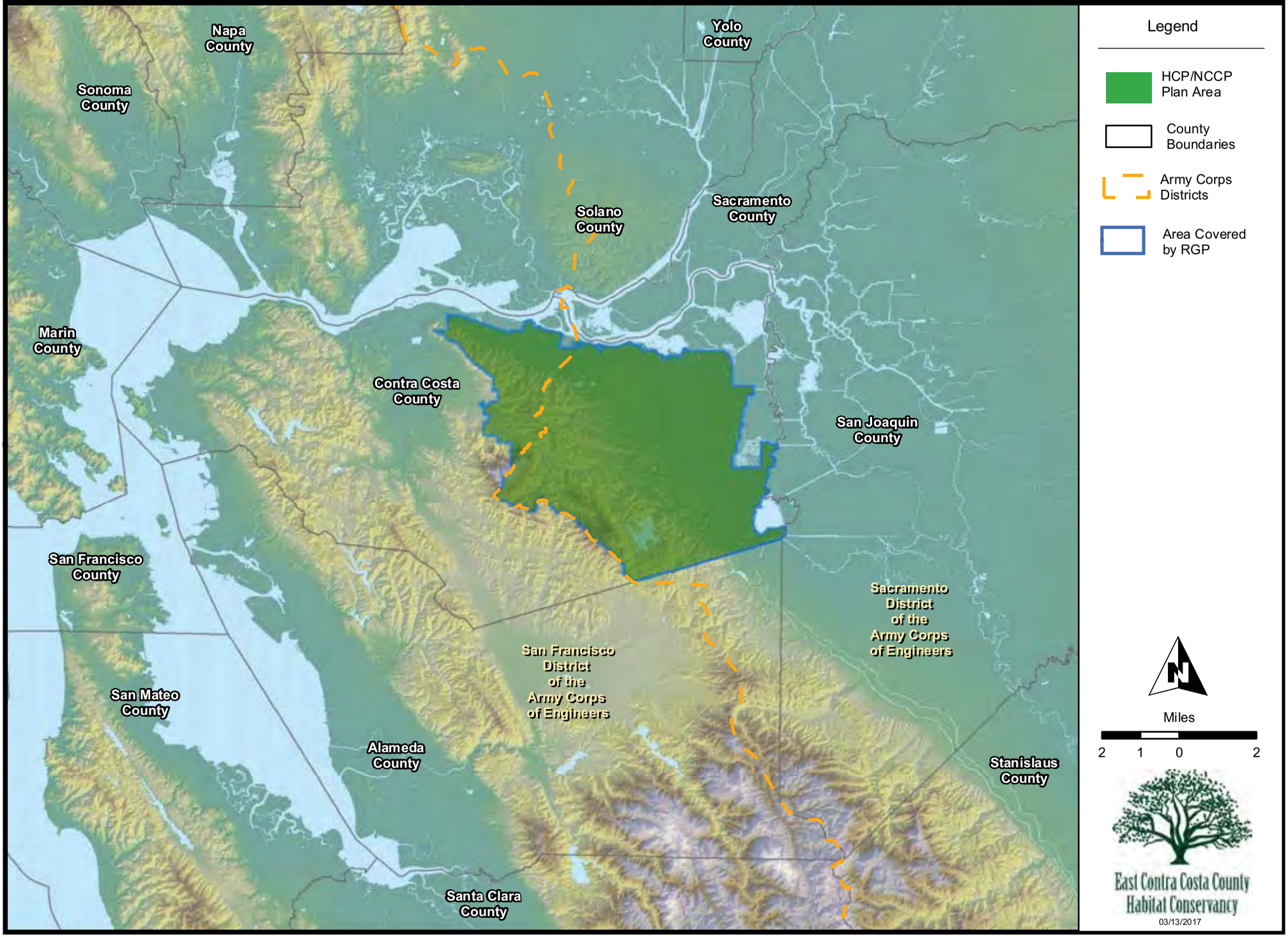

Figure 1b: HCP/NCCP Plan Area and Area Covered by RGP

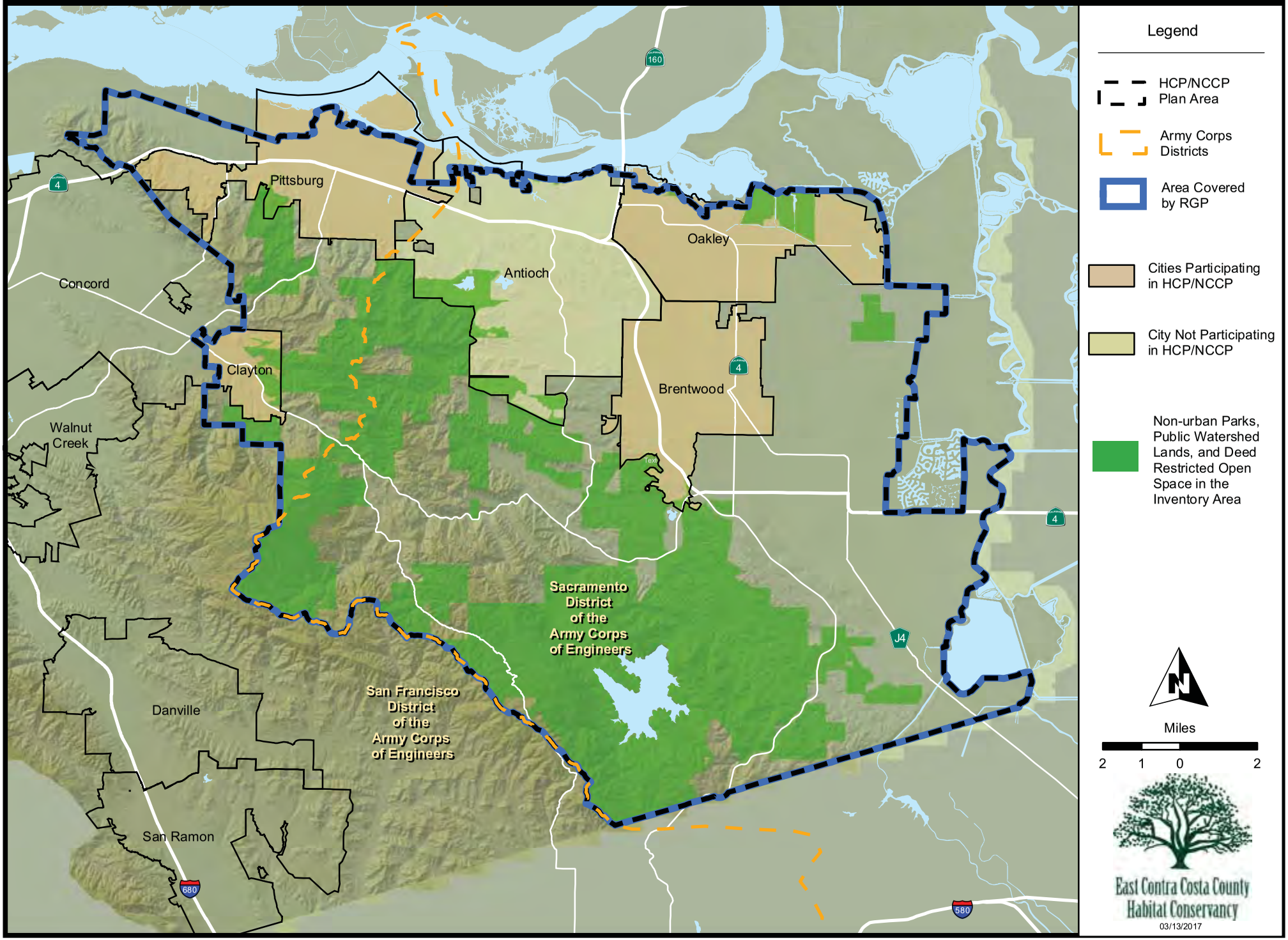

Table 1. Required Ratios and Estimated Preservation, Restoration and Creation Requirements for Aquatic Land-Cover Types under Initial and Maximum Urban Development Area
(Combines tables 5.5a, 5.5b, 5.16 and 5.17 of HCP)

	Preservation Requirements									Restoration & Creation Requirements								
	Required Preservation Ratio	Estimated Impact[1] (acres)		Estimated Preservation Requirement[1] (acres)		Impact & preservation notes	Minimum Available in Acquisition Analysis Zones[2] (acres)		Availabilty notes	Required Restoration and Creation Ratios (in addition to preservation requirements)		Estimated Restoration/ Creation Requirement[1] (acres)		Restoration or Creation Required to Contribute to Recovery (acres)		Estimated Total Restoration or Creation[1] (acres)		restoration / creation notes
Aquatic Land Cover Type		Initial Urban Development Area Scenario	Maximum Urban Development Area Scenario	Initial Urban Development Area Scenario	Maximum Urban Development Area Scenario		Initial Urban Development Area Scenario	Maximum Urban Development Area Scenario		Restoration	Creation	Initial Urban Development Area Scenario	Maximum Urban Development Area Scenario	Initial Urban Development Area Scenario	Maximum Urban Development Area Scenario	Initial Urban Development Area Scenario	Maximum Urban Development Area Scenario	
Riparian woodland/scrub	2:1	30	35	60	70		205	205		1:1	–	30	35	20	20	50	55	
Wetlands and Ponds																		
Perennial wetlands[3]	1:1	74	75	74	75	3	231	232	3	1:1	–	74	75	10	10	84	85	7
Seasonal wetlands	3:1	43	56	129	168	3, 4	172	172	3, 4, 5	2:1	–	86	112	20	20	106	132	4, 7
Alkali wetland	3:1	28	31	84	93	4	168	168	4	2:1	–	56	62	5	5	61	67	4
Ponds	2:1	7	8	14	16		80	80		–	1:1	7	8	8	8	15	16	
Slough/channel	0.5:1	72	72	36	36		137	137		1:1 or riparian	–	72	72	0	0	72	72	9
Aquatic (open water)	1:1	12	12		12		123	123		–	0.5:1 (ponds)	6 (ponds)	6 (ponds)	0	0	6 (ponds)	6 (ponds)	9
Total Aquatic Land Cover Types (acres)	–	266	289	397	470		1,117	1,117				331	370	63	63	394	433	
Perennial streams (miles)	2:1	0.3	0.4	0.6	0.8	6	18	184	6, 7	1:1	1:1 if restoration not feasible	0.3	0.4	0	0	0.3	0.4	7,10
Intermittent streams (miles)	1:1	0.3	0.4	0.3	0.4	6	184	184	6, 7	1:1	1:1 if restoration not feasible	0.3	0.4	0	0	0.3	0.4	7,10
Ephemeral streams (miles)	1:1	4	5	4	5		184	184	7	1:1	1:1 if restoration not feasible	4	5	0	0	4	5	7,10

Notes:

[1] Actual impacts, preservation requirements and restoration/creation requirements will be based on field-delineated resources at impact sites and application of the required preservation ratios in this table.

[2] Many land cover types were underestimated in the mapping conducted for this HCP/NCCP, so these figures represent minimum acreages of what is available for preservation. See Chapter 3 for a discussion of the mapping limitations.

[3] Undetermined wetlands could be seasonal wetlands or perennial wetlands (e.g., freshwater marsh). Seasonal wetlands will be mitigated at a preservation ratio of 3:1; perennial wetlands will be mitigated at a preservation ratio of 1:1. This table assumes 75% of undetermined wetlands are perennial wetlands and 25% are seasonal wetlands.

[4] Seasonal and alkali wetland acreage was quantified as the minimum polygon encompassing clusters of seasonal pools or drainages (i.e., wetland complexes). Impacts and land acquisition requirements will be tracked by jurisdictional wetland boundary, so estimates in this table overstate the expected impacts to and preservation of these land cover types. Impact restrictions and preservation ratios apply only to wetted acres.

[5] The actual amount of seasonal wetlands available for preservation in the inventory area is unknown because of a lack of field surveys. The allowable impact to seasonal wetlands by covered activities will be capped at the amount required to preserve seasonal wetlands at the required 3:1 ratio. For example, if only 30 acres are preserved, allowable impacts will be capped at 10 acres.

[6] Maximum allowable impacts for perennial and intermittent streams could not be separately estimated. Cumulative impacts for these two categories were estimated at 0.6 miles for the Initial Urban Development Area and 0.8 for the Maximum Urban Development Area. For the purposes of this table, it is assumed that the impacts are evenly split between the two categories.

[7] The approximate length of all streams of all types in the Acquisition Analysis Zone is 184 miles.

[8] Undetermined wetlands are either seasonal wetlands or perennial wetlands. Mitigation of seasonal wetlands will be accomplished through restoration at 2:1. Mitigation of perennial wetlands will be accomplished through in-kind creation at 1:1. This table assumes 75% of the undetermined wetlands are perennial wetlands and 25% are seasonal wetlands.

[9] Loss of slough/channel will be compensated by either restoring slough/channel at a 1:1 ratio or restoring riparian woodland/scrub at a 1:1 ratio (see text). These calculations assume all slough/channel impacts will be compensated through riparian woodland/scrub restoration because of the limited opportunities for slough/channel creation. Loss of open water will be compensated by creating ponds (see text).

[10] Streams will be restored at a 1:1 ratio where feasible. Where stream restoration is not feasible, out-of-kind creation of seasonal wetlands or permanent wetlands will be required to replace some of the functions of the lost stream at a 1:1 ratio. See Conservation Measure 2.10 for more details.

Table 2: Stream Setback Minimum Requirements for Streams[4]

Stream Reach Type and Location[1]	Buffer Objective/ Function (from Figure 5-11)	Example Sites in Inventory Area	Minimum Setback (from top of bank measured in aerial perspective[2])	Conditions and Limitations on Impacts To Streams[3]		Conditions and Limitations on Impacts Within Setbacks[4]		Comments
				Linear Limitations on Impacts to Streams	Activities for Which Stream Impacts Will Be Authorized	Limitations on Area of Impacts Within Setback[5]	Activities for Which Setback Impacts Will Be Authorized	
1st and 2nd order[6] ephemeral reaches in urban and agricultural areas	N/A	Multiple unnamed tributaries to intermittent and perennial reaches	Avoidance and minimization measures for drainages must be documented but no setback is required	No limitations	Any activities	No limitations	Any activities	These reaches are located in dense urban and intensive agricultural areas, and provide low habitat function for covered species. Avoidance and implementation of Conservation Measure 1.10 will minimize impacts to water quality and hydrologic functions.
Concrete-lined channels	Enhance water quality; retain restoration potential	Reaches of Kirker Creek	20 ft	No limitations	Any activities	No limitations	Any activities	These reaches are located in dense urban areas and provide low habitat function for covered species. A minimal buffer width will reduce sediment and nutrient inputs from surface flows, retain some potential for stream restoration, and provide for recreational opportunities.
1st and 2nd order[6] ephemeral reaches in natural areas	Erosion and nutrient control;	Multiple unnamed tributaries to intermittent and perennial reaches	25 ft	No limitations	Any activities	No limitations	No limitations, but avoidance and minimization must be documented.	Although ephemeral streams play a limited role in providing habitat to covered species, these systems represent the first point of entry for sediment and other contaminants into downstream reaches. Thus, unlike the stream types below, the primary objective of the setback for

[4] Stream setbacks apply Within the Urban Limit Line or City Limits of Brentwood, Clayton, Oakley or Pittsburg.

Stream Reach Type and Location[1]	Buffer Objective/ Function (from Figure 5-11)	Example Sites in Inventory Area	Minimum Setback (from top of bank measured in aerial perspective[2])	Conditions and Limitations on Impacts To Streams[3]		Conditions and Limitations on Impacts Within Setbacks[4]		Comments
				Linear Limitations on Impacts to Streams	Activities for Which Stream Impacts Will Be Authorized	Limitations on Area of Impacts Within Setback[5]	Activities for Which Setback Impacts Will Be Authorized	
								ephemeral streams is to filter out sediment and contaminants before they degrade downstream habitat.
Perennial, intermittent, or 3rd or higher order[6] ephemeral streams in urban areas except Marsh Creek mainstem	Enhance water quality; retain restoration potential	Lower Willow Creek, Lower Kirker Creek, Lower Sand and Deer Creeks	50 ft	300 feet	Necessary bridges and outfalls	Up to 15% of setback area	Necessary bridges and outfalls, access and maintenance roads for flood control, c3 facilities, and trails	These reaches are located mostly in dense urban areas and provide low habitat function for covered species. However, potential may exist for restoration of riparian vegetation and minimal floodplain areas. In addition, a minimal buffer width will reduce sediment and nutrient inputs from surface flows and provide for recreational opportunities.
Perennial, intermittent, or 3rd or higher order[6] ephemeral streams in agricultural or natural areas and Marsh Creek mainstem	Enhance water quality; retain restoration potential	See examples below[7]	75 ft	300 feet	Necessary bridges and outfalls	Up to 15% of setback area	Necessary bridges and outfalls, access and maintenance roads for flood control, trails, and other necessary facilities approved by wetlands agencies	These reaches retain the greatest habitat value and potential for restoration within the Urban Limit Line. The buffer will filter sediment and other contaminants, maintain habitat for covered species, allow for restoration of riparian vegetation and some small floodplain areas, as well as providing recreation opportunities.

[1] Location parameters (e.g., “agricultural areas”, “natural areas”, etc.) describe the setting of the stream at the time of completing this HCP/NCCP and refer to the fee zones and urban landcover shown in Figure 9-1.
[2] Where native woody riparian vegetation is present, minimum setbacks must extend to the outer dripline of the riparian vegetation or the specified number of feet measured from top of bank, whichever is greatest. Riparian vegetation is defined broadly to include oaks and other woody species that function as riparian

corridors. Setbacks must also meet minimum setback requirements of the applicable local land use agency. Contra Costa County has an ordinance regulating impacts near unimproved earthen channels. This Ordinance requires a "structure setback line" that varies between approximately 30 feet and 50 feet from top of bank depending on the height of top of bank above the channel invert (County Code Title 9, Division 914-14.012).

[3] Mitigation is required for all impacts to streams, as described in Chapter 5 of the HCP/NCCP. Restoration requirements are summarized in Tables 5-16, 5-17, and 9-5. Preservation requirements are summarized in Tables 5-5a and 5-5b and may be accomplished through payment of the development fee described in Section 9.3.1 or through provision of land in lieu of fees.

[4] Impacts within setbacks must be mitigated through: a) payment of the development fee described in Section 9.3.1 over the entire property including the setback and the stream channel; and b) through payment of the riparian impact fee (see Table 9-5 of HCP/NCCP) for every acre of impact within the setback or through direct performance of riparian restoration at a 0.5 to 1 ratio on-site or off-site.

[5] Restrictions will be measured as a percentage of the setback area excluding the area the of the stream channel.

[6] Stream order refers to the numeric identification of the links within a stream network. This document follows the stream ordering system of Strahler (1964). In this system, a first order stream is a stream with an identifiable bed and bank, without any tributary streams. A second order stream is formed by the confluence of two first order streams. A third order stream is formed by the confluence of two second order streams, and so on. Addition of a lesser order stream does not change the stream order of the trunk stream.

[7]Perennial streams in agricultural or natural areas within the Inventory Area consist of the following:

a. **Mount Diablo Creek, Russelman Creek, Peacock Creek upstream of the Oakhurst Country Club property, and tributaries to Mount Diablo Creek within Mount Diablo State Park;**

b. **Kellogg Creek in the Foothills/Upper Valley and Delta geomorphic zones;**

c. **Brushy Creek in the Delta and Lower Valley/Plain geomorphic zones;**

d. **Indian, Rock, Sand Mound, Dutch, Piper, and Taylor Sloughs, and False River (does not include reaches in concrete channels); and**

e. **Sand Creek and Oil Canyon Creek in the Montane geomorphic zone.**

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California95825-1846

In Reply Refer To:
81420-2011-F-0655

APR 3 0 2012

Kathleen A. Dadey
Chief, California Delta Branch
Attn: Mary Pakenham-Walsh
Regulatory Division
U.S. Army Corps of Engineers
650 Capitol Mall, Suite 5-200
Sacramento, California 95814

Subject: Programmatic Biological Opinion for a Regional General Permit for the East Contra Costa Habitat Conservation Plan/Natural Community Conservation Plan, Contra Costa County, California (Corps file number SPK-2001-00147)

Dear Ms. Dadey:

This programmatic Biological Opinion has been prepared in response to the U.S. Army Corps of Engineers' (Corps) June 14, 2011, request for section 7 consultation with the U.S. Fish and Wildlife Service (Service) for multiple activities that would be authorized under a Corps Regional General Permit (RGP) within the permit area for the (Plan Area) for the East Contra Costa Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP). At issue are the effects of this action on the threatened California red-legged frog (*Rana draytonii*), threatened Central California Distinct Population Segment (DPS) of the California tiger salamander (*Ambystoma californiense*) (Central California tiger salamander), threatened Alameda whipsnake (*Masticophis laterals euryxanthus*), threatened giant garter snake (*Thamnophis gigas)* endangered San Joaquin kit fox (*Vulpes macrotis mutica*), threatened vernal pool fairy shrimp (*Branchinecta lynchi)* and its critical habitat, the endangered longhorn fairy shrimp (*Branchinecta longiantenna*) and its critical habitat, and the endangered vernal pool tadpole shrimp (*Lepidurus packardi*). This programmatic Biological Opinion is issued under the authority of the Endangered Species Act, as amended (16 U.S.C. 1531 *et seq.*) (Act or ESA).

This document is based on: (1) the draft *Department of the Army Permit Regional General Permit Number 1 – Minimal Impact Activities-East Contra Costa County, California* dated June 14, 2011; (2) a public notice for the proposed issuance of a Regional General Permit (SPK-2001-00147) for activities covered under the HCP/NCCP dated February 2011; (3) a public notice for the proposed in-lieu fee program in conjunction with the HCP/NCCP (SPK-2001-00147) dated January 2011; (4) the final *East Contra Costa Habitat Conservation Plan/Natural Community Conservation Plan* dated October 2006; (5) *Exhibit B: Corrections and Updates to the*

HCP/NCCP dated December 2006; (6) the *Intra-Service Biological Opinion on Issuance of a Section 10(a)(1)(B) Incidental Take Permit for the HCP/NCCP* (Intra-Service Opinion) dated July 2007;(7) the draft *Aquatic Resources Inventory, Classification, and Function* for the HCP/NCCP dated October 2004; (8) the *East Contra Costa Habitat Conservation Plan/Natural Community Conservation Plan Annual Report 2010* dated March 2011; and (9) and other information available to the Service.

Consultation History:

June 14, 2011:	The Service received the Corps letter requesting initiation of formal consultation for the proposed action.
June 22, 2011:	The Service attended an informational workshop for the public hosted by the East Contra Costa HCP/NCCP with the Corps and the California Department of Fish and Game (CDFG) to discuss the proposed action.
March 1, 2012:	The Service received a revised RGP.

BIOLOGICAL OPINION

Description of the proposed action

The HCP/NCCP addresses effects to both federally listed and unlisted species. However, pursuant to section 7 of the Act, this Biological Opinion only addresses effects to federally listed or proposed threatened and endangered species resulting from the proposed issuance of a RGP that would authorize placement of dredged or fill materials into waters of the U.S. for activities covered under the HCP/NCCP within the Plan Area for the HCP/NCCP. For a complete description of all *Covered Activities* (Covered Activities) under the HCP/NCCP, see Chapter 2 of the HCP/NCCP (Jones and Stokes 2006).

The proposed RGP is valid for five years from the date of issuance (or reissuance), but can be extended or reissued (see *Terms of Authorization: Expiration of RGP* below); however, the HCP/NCCP and Intra-Service Opinion cover activities for a period of thirty years (expires on July 25. 2037). Because activities proposed under the RGP are a subset of the Covered Activities analyzed in the HCP/NCCP and Intra-Service Opinion, the Service will consider this Biological Opinion valid for the life of the HCP/NCCP's Incidental Take Permit (TE160958-0) (Service 2007), unless new information reveals effects of the proposed action may result in adverse effects to federally listed species in a manner not identified to date, or if a new species is listed that may be affected by the proposed action.

Project Overview

The proposed action is issuance of a RGP that would authorize placement of dredged or fill material into waters of the U.S. within the Plan Area, pursuant to section 404 of the Clean Water Act (CWA), for Covered Activities as defined in the HCP/NCCP that would have minimal individual and cumulative impacts on the aquatic environment. The RGP's procedures and associated requirements would integrate with those contained in the HCP/NCCP, resulting in consistent implementation of the section 10 permit for the HCP/NCCP and a coordinated permitting process under section 404 of the CWA.

The proposed RGP would authorize specific categories of activities with minimal individual and cumulative impacts on the aquatic environment that meet the terms and conditions of the RGP. Temporary structures, fills, and work necessary to construct an activity authorized by the RGP are allowed, provided such work complies with the terms and conditions of the RGP inclusive of special conditions that the Corps may add. The RGP applies only to HCP/NCCP Covered Activities, as set forth in Section 2.3 of the HCP/NCCP (Jones and Stokes 2006). Any question as to whether a proposed activity is considered a Covered Activity under the HCP/NCCP shall be subject to confirmation by the East Contra Costa County Habitat Conservancy, a joint exercise of powers agency formed by the Cities of Brentwood, Clayton, Oakley and Pittsburg and Contra Costa County to perform the role of Implementing Entity for the HCP/NCCP (Conservancy). The HCP/NCCP Covered Activities are divided among the following Activity categories in the RGP for purposes of assigning Activity-specific conditions (see *Activity Specific Conditions* below):

1. Residential, commercial, industrial, institutional, and other urban developments and associated infrastructure inside the Urban Limit Line of Contra Costa County or inside the City Limits of the Cities of Brentwood, Clayton, Oakley and Pittsburg, including but not limited to roads, utilities, parks, storm water management facilities, and water supply and delivery facilities (activity-specific conditions: 1 through 4).

2. Recreation projects, including parks, picnic areas, staging areas, trails and park maintenance facilities. Applies only to the activities set forth in Sections 2.3.2 and 2.3.4 of the HCP/NCCP (activity-specific conditions: 1 through 4).

3. Flood control detention basins, reservoirs, channels, and related facilities. Applies only to the specific planned facilities set forth in Section 2.3.2 of the HCP/NCCP (activity-specific conditions: 1 through 4).

4. Transportation projects, including road construction and widening, bicycle trails, rail projects, bridges and safety-related projects. Applies only to the specific planned facilities set forth in Section 2.3.2 of the HCP/NCCP (general conditions apply only).

5. Wetland and stream restoration, creation, enhancement and management. Applies only to activities set forth in Sections 2.3.2 and 2.3.4 of the HCP/NCCP (activity-specific conditions: 1, 2, and 4).

6. Utility projects, including electrical transmission projects, cellular communication projects and pipelines. Applies only to the activities set forth in Sections 2.3.2 and 2.3.4 of the HCP/NCCP (activity-specific condition 4).

7. Maintenance, repair, rehabilitation or replacement of any previously authorized (under the RGP or other Corps permit), currently serviceable, structure or fill. Applies only to the maintenance activities set forth in Sections 2.3.1 and 2.3.3 of the HCP/NCCP (general conditions apply only).

If there is any question as to which Activity category a proposed activity would apply to, the Corps will determine the applicable Activity category. The RGP does not cover any activities in waters of the U.S. conducted in emergency situations.

Terms of Authorization:

1. Applying for RGP authorization: Prior to commencing a proposed activity, applicants seeking authorization under the RGP shall notify the Corps in accordance with RGP general condition number 19 (Notification) listed in the general conditions below. If the Corps determines that an activity is not an eligible activity under the RGP, it will notify the applicant in writing within 30 calendar days and provide instructions on the procedures to seek authorization under a standard permit, letter of permission or Nationwide permit. If the Corps determines that a proposed activity is eligible for coverage under the RGP, it will notify the applicant within 45 calendar days of receipt of a complete application. If the Corps does not provide a written response to the applicant within 45 calendar days following receipt of a complete application, the applicant may presume the proposed activity is an eligible activity that may be covered under the RGP, provided the activity complies with all other terms and conditions of the RGP.

2. Impact Thresholds for waters of the U.S.: Impacts to waters of the U.S. shall be avoided and minimized to the maximum extent practicable. The loss of waters of the U.S. (including wetlands) resulting from individual project impacts may not exceed a total of 1.5 acres or more than 300 linear feet of perennial, intermittent or 3rd or higher order ephemeral streams (as defined in Table 2 of the RGP and further described in the HCP/NCCP), unless the linear limit is waived in writing by the Corps. Additional restrictions are listed in the General and Activity-Specific Conditions.

3. Single and complete project: The project must be a single and complete project. For example, if construction of a residential development involves phases, the sum of all impacted areas would be the basis for deciding whether or not the project will be covered by the RGP.

4. After-the-fact projects: The RGP may not be used to authorize activities after they have impacted waters of the U.S.

5. Compliance with HCP/NCCP Conditions: Activities to be authorized under the RGP must be HCP/NCCP Covered Activities and must fully comply with the HCP/NCCP. Compliance with the HCP/NCCP requires applicants to implement the appropriate conservation measures outlined in Chapter 6 of the HCP/NCCP.

6. Special conditions: The Corps may add special conditions to an authorization to ensure the activity complies with the terms and conditions of the RGP, and/or that adverse impacts on the aquatic environment or other aspects of the public interest are individually and cumulatively minimal.

7. Activity completion: Any activity authorized by the Corps under the RGP must be completed within three (3) years of the date it is authorized. The "authorization date" is the date the Corps verifies in writing that the activity meets the terms and conditions of the RGP. The Corps will, on a case-by-case basis, review requests for time extensions if the permittee fails to complete the activity within three years. A time extension would be considered a reverification and would be subject to review and approval policies in effect at the time of review. Pursuant to term #9, below, activities authorized under the RGP that are under construction or under contract for construction in reliance upon this authorization will remain authorized provided the activity is completed within 12 months of the date of the RGP's expiration, modification or revocation, unless the Corps exercises its discretionary authority to modify, suspend, or revoke the authorization of a specific project.

8. Discretionary Authority: The Corps has the discretion to suspend, modify, or revoke authorizations under the RGP. This discretionary authority may be used by the Corps to also further condition or restrict the applicability of the RGP for cases in which it has concerns associated with the Clean Water Act Section 404(b)(1) Guidelines, or regarding any public interest factor. Should the Corps determine that a proposed activity may have more than minimal individual or cumulative adverse impacts to aquatic resources or otherwise be contrary to the public interest, the Corps will modify the authorization to reduce or eliminate those adverse effects, or notify the applicant that the proposed activity is not authorized by the RGP and provide instructions on how to seek authorization under an individual permit. The Corps may restore authorization under the RGP at any time it determines that the reason for asserting discretionary authority has been resolved or satisfied by a condition, project modification, or new information. The Corps may also use its discretionary authority to modify, suspend, or revoke the RGP at any time.

9. Expiration of RGP: The RGP is valid for five years from the date of issuance (or reissuance). At least 60 calendar days prior to the expiration date of the RGP, the Corps will issue a public notice, with an opportunity for public comment, describing the reasons for reissuing the RGP, reissuing the RGP with modifications, or not reissuing the RGP for another five years. The Corps may extend the RGP for six months beyond the expiration date if it is

unable to reissue the RGP due to unresolved issues. If the Corps has not reissued or extended the RGP by the expiration date, the RGP will no longer be valid. The RGP may also be modified, suspended, or revoked by the Corps at any time deemed necessary. In such instance, the Corps will issue a public notice concerning the action.

General Conditions:

The following conditions apply to all Activity categories:

1. Threatened and Endangered Species: No activity is authorized under the RGP that does not comply with the mandatory terms and conditions of the Service's Section 10(a)(1)(B) Incidental Take Permit for the East Contra Costa HCP/NCCP dated July 20, 2007 (Service permit number: TE160958-0). This Biological Opinion contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" authorization under the RGP. Authorization under the RGP is conditional upon compliance with all of the mandatory terms and conditions of this Biological Opinion. Failure to comply with the terms and conditions of this Biological Opinion would constitute non-compliance with the RGP. The Service is the appropriate authority to determine compliance with the terms and conditions of the Biological Opinion, and with the ESA. The permittee must comply with all applicable conditions of this Biological Opinion, including those ascribed to the Corps.

2. Water Quality Certification: Section 401 Water Quality Certification is required for activities to be authorized by the RGP. The Corps may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal impacts, individually or cumulatively.

3. Historic Properties: No activity is authorized under the RGP if the activity may affect historic properties listed, or eligible for listing, in the National Register of Historic Places, until the requirements of Section 106 of the National Historic Preservation Act (NHPA), as amended, have been satisfied. Applicants must notify the Corps if the activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified historic properties. The Corps will consult with the State Historic Preservation Officer (SHPO), as appropriate, following the policy and procedural standards of 33 CFR Part 325 Appendix C[1].

4. Unanticipated Cultural Resources Discoveries: If previously unidentified cultural materials are unearthed during construction, all work shall be halted until a qualified archaeologist can examine the deposit and determine its nature and significance. In the event of discovery of possible human remains, state law requires that the County Coroner be contacted.

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[1] Inclusive of Appendix C Interim Guidance dated April 25, 2005 and January 31, 2007, or such guidance that is applicable at the time that a permit application is submitted. Current guidance may be found on the Sacramento District's web site at: http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/.

5. Fills within 100-Year Floodplains: The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

6. Bed and Bank Stabilization: Bank stabilization activities are limited to: (a) using the minimum amount of material needed for erosion protection; (b) no more than 500 feet in length along the bank, unless this criterion is waived in writing by the Corps; and (c) no more than an average of 1 cubic yard of material per running foot placed along the bank below the plane of the ordinary high water mark or high tide line, unless this criterion is waived in writing by the Corps.

7. Best Management Practices: Best Management Practices (BMPs) must be employed during construction and in project design to protect water quality and minimize impacts of stormwater runoff on aquatic resources. BMPs should be appropriately located in or adjacent to waters of the U.S. (e.g., silt curtains). The applicant shall employ the following BMPs, as appropriate and feasible, in designing and constructing the project. The applicant shall describe which BMPs are practicable as part of the notification procedure as per general condition #19, subpart (b) below:

   a. Preservation of natural resource features on the project site (e.g., floodplains, wetlands, streams, and other drainage ways, grasslands, woodlands, and native soils);
   b. Preservation of natural water infiltration and storage characteristics of the site;
   c. Minimization of new impervious surfaces in project design (impervious surfaces may be minimized through practices such as reducing road widths and clustering developments designed around open space);
   d. Structural measures that provide water quality and quantity control;
   e. Structural measures that provide only quantity control and conveyance;
   f. Construction BMPs;
   g. Low impact development (LID) BMPs.

   Examples of structural BMPs include: vegetated natural buffers, grassed swales, infiltration trenches, level spreaders and channel grade controls. Examples of construction BMPs include: matting and filter fencing, or other barrier methods to intercept/capture sediment.

8. Proper Maintenance: Any authorized structure or fill shall be properly maintained, including maintenance necessary to ensure public safety and the movement of aquatic organisms.

9. Aquatic Life Movements: No activity may substantially disrupt the necessary life cycle movement of aquatic species indigenous to the water body, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low-flow conditions. If feasible, they should be designed as open-bottom culverts.

10. Equipment: Heavy equipment working in wetlands must be placed on mats, or other measures, such as low-ground pressure equipment, must be taken to minimize soil disturbance.

11. Tribal Rights: No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

12. Water Supply Intakes: No discharge of dredged or fill material may occur in the proximity of a public water supply intake, except where the discharge is for the repair or improvement of the intake structure(s), and/or adjacent bank stabilization.

13. Suitable Material: No discharge of dredged or fill material may consist of unsuitable material and material discharged must be free from toxic pollutants in toxic amounts (section 307 of the CWA). Unsuitable material includes, but is not limited to, trash, debris, car bodies, and asphalt.

14. Management of Water Flows: To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration project).

15. Migratory Bird Breeding Areas: Activities in waters of the U.S. that serve as breeding areas for migratory birds shall be avoided to the maximum extent practicable.

16. Removal of Temporary Fills and Restoration of Affected Areas: Temporary fills shall be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas shall be revegetated with native vegetation upon completion of the project. A restoration plan, which includes a 1-foot contour topographic map, must be submitted with the notification to the Corps.

17. Compensatory Mitigation: Mitigation for impacts to waters of the U.S. must be accomplished by conforming to the minimum mitigation ratios set by the HCP/NCCP. Mitigation proposals are required to be consistent with the Corps' mitigation rule (33 CFR Part 332).

    a. Mitigation may be accomplished by one or more of the following mechanisms: 1) payment of the aquatic resources mitigation fee to the Conservancy in accordance with the in-lieu fee (ILF) program envisioned to be established by the Conservancy; 2) purchasing credits from a Corps-approved mitigation bank that also provides mitigation acceptable under the HCP/NCCP, and/or; 3) through a "permittee-responsible" mitigation project (33 CFR Part 332).

b. Prior to proceeding with the activity authorized by the RGP, a final mitigation plan must be approved by the Corps and the Conservancy, and/or mitigation fees must be paid. When mitigation fees are applicable, evidence of fee payment must be provided to the Corps before commencement of the activity authorized by the RGP can be initiated.
c. If the RGP verification includes permittee-responsible compensatory mitigation, the mitigation plan must contain a reporting procedure consistent with the Corps' mitigation rule (33 CFR Part 332.4[c][10]), *Monitoring Requirements*.

18. Notification: The applicant shall provide written notification (i.e., a complete application) for a proposed activity to be authorized under the RGP prior to commencing the activity. The Corps' receipt of the complete application is the date when the Corps receives all required notification information from the applicant (see below). Written notification shall include all of the following:

a. A letter signed by the applicant requesting authorization under the RGP, identifying the Activity Category(s), a description of the proposed activity, the location of the activity (with latitude and longitude), and the area (in acres, and/or linear feet as applicable) of waters of the U.S., including wetlands, to be impacted;
b. For each general and applicable activity-specific condition of the RGP, a brief narrative describing how the activity would comply with the condition, or that the condition does not apply;
c. Vicinity and project site maps;
d. A delineation of waters of the U.S., including wetlands, for the project site and for areas immediately adjacent to the project site. On-site wetlands must be delineated using the Corps Wetlands Delineation Manual (1987) and Arid West Region Regional Supplement (2008), or most recent manual(s) in effect at the time of the applicant's proposal. Off-site wetlands may be identified through the use of reference materials including local wetland inventories, soil surveys, and aerial photography. The delineation shall *also* include information on wetlands and waters, as defined in the HCP/NCCP, that are/may not be waters of the U.S.;
e. Preliminary plans (on 8 ½" x 11" or 14" reduced-sized drawings) showing all aspects of the proposed activity and the location of avoided and impacted waters of the U.S. Plan-view and cross-section plans shall be included. Both temporary (e.g., access, staging) and permanent impacts to waters of the U.S. shall be shown. The plans shall include grading contours and existing and proposed structures, such as buildings, roadways, stormwater management facilities, utilities, construction access areas and water conveyance structures. The drawings shall also show buffer areas, open space designations, locations of BMPs, deed restricted areas, and restoration areas, if required;
f. A written statement explaining how the activity has been designed to avoid and minimize adverse effects, both temporary and permanent, to waters of the U.S. For compensatory mitigation proposed in accordance with general condition #18, submit a preliminary plan to offset unavoidable impacts to waters of the U.S.;

g. A cultural resource survey report for the project site, including all staging, access and construction areas. The report must be prepared in accordance with the Sacramento District's Guidelines for Compliance with Section 106 of the NHPA (dated February 25, 2011), or more recent guidance (if applicable) at the time a permit application is submitted.

If the Corps determines that the activity complies with the terms and conditions of the RGP, including confirmation that proposed impacts to aquatic resources are minimal, the Corps will notify the applicant in writing and include any special conditions deemed necessary. If the Corps determines the impacts of the proposed activity are more than minimal, the Corps will notify the applicant that the project does not qualify for authorization under the RGP and instruct the applicant on the procedures to seek authorization under an individual permit.

19. Reporting Responsibilities: The permittee must submit a report to the Corps within 30 days of project completion. The report will contain the following:

    a. The Corps' file number;
    b. Photographs showing pre- and post-construction project conditions;
    c. A completed compliance certification.

20. Access: The permittee must allow representatives from the Corps to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of the permit.

21. Transfer of RGP Authorization: If the permittee sells the property associated with this permit, the permittee must obtain the signature and mailing address of the new owner on the permit verification letter, and forward a copy to this office to validate the transfer.

Activity-Specific Conditions:

The following conditions apply to Activity categories specified at the end of each condition.

1. Stream Setbacks. Consistent with the requirements of the HCP/NCCP, stream setbacks shall be established (see the HCP/NCCP for detailed stream setback requirements). Waters of the U.S. shall not be filled in order to meet the buffer requirements (Activity categories 1, 2, 3, and 5).

2. Permanent Protections. All preserved, created, restored or enhanced waters of the U.S. and adjacent buffers on the project site shall be preserved and permanently protected through a deed restriction, conservation easement, or other appropriate real estate or legal instrument, consistent with the requirements of the HCP/NCCP as determined by the Corps. A recorded copy of the real estate instrument must be provided to the Corps prior to proceeding with any activity otherwise authorized by the RGP (Activity categories 1, 2, 3, and 5).

3. Fencing and Signage. Preserved areas on the project site must be fenced and signed as sensitive areas to discourage human disturbance (Activity categories 1, 2, and 3).

4. Utility Lines. All utility lines shall be constructed in accordance with the following:
   a. The construction area for linear utility line projects shall be limited to a width of 75 feet, unless this limit is waived in writing by the Corps.
   b. For utility line projects, directional drilling, clear span or other techniques that do not contact the waterbody shall be used if the waterbody contains perennial flow.
   c. If the project involves the use of directional drilling below waters, notification shall include a contingency plan. The plan will include actions that will be taken to stabilize the work area and avoidance/contingency measures in the event of a potential "frac-out."
   d. Material resulting from trench excavation may be temporarily sidecast (up to 60 days) into waters of the U.S., provided that the material is not placed in such a manner that it is dispersed by currents or other forces. The Corps may extend the period of temporary side casting for no more than a total of 180 days, where appropriate.
   e. Utility lines must not adversely alter existing hydrology, including draining of wetlands. In wetland areas, utility line trenches shall be lined with clay, or other impermeable materials or structures (such as cut-off walls) to ensure that the trench through which the utility line is installed does not drain waters of the U.S. In addition, to prevent a French drain effect, gravel cannot be used as backfill material in the top 10 feet of the trench.
   f. In wetland areas, the top 6"-12" of the trench shall be backfilled with topsoil excavated from the trench in the same stratification in which it was removed.
   g. Excess material shall be removed to upland areas immediately upon completion of utility line construction in any segment of the project containing waters of the U.S. In no case shall the excess material be left in place until the entire utility line is completed.
   h. The construction area, including unprotected slopes and streambanks, shall be stabilized (e.g., blanketed and seeded) immediately upon completion of the utility line construction in any segment of the project. In no case shall soil stabilization be delayed until the entire utility line is completed.
   i. Temporarily disturbed construction areas must be restored to pre-construction conditions, including grading to original contours and revegetating (with native vegetation or other appropriate vegetation approved by the Corps) immediately upon completion of the project. A restoration plan, which includes a 1-foot contour topographic map, shall be submitted with notification (Activity categories 1, 2, 3, 5, and 6).

Limitations and Restrictions:

1. The Corps has authority to determine if an activity complies with the terms and conditions of the RGP.

2. The RGP does not obviate the need to obtain other Federal, state, or local permits, approvals, or authorizations required by law.

3. The RGP does not grant any property rights or exclusive privileges.

4. The RGP does not authorize any injury to the property or rights of others.

5. The RGP does not authorize interference with any existing or proposed Federal project.

Definitions:

This Biological Opinion incorporates by reference the Definitions contained within the RGP.

Action Area

The area covered by the RGP is geographically synonymous with the Plan Area for the HCP/NCCP in east Contra Costa County, including the cities of Clayton, Brentwood, Oakley, and Pittsburg, and specific areas of unincorporated Contra Costa County. The HCP/NCCP action area is within eastern Contra Costa County, California. The action area covers 174,018 acres, or approximately one-third of Contra Costa County, and is entirely within the eastern portion of the County. The action area is approximately bounded on the south by the Alameda–Contra Costa County line; on the east by the westernmost Delta sloughs between Oakley and the Alameda–Contra Costa County line; on the north by the San Joaquin River shoreline; and on the southwest and west by the western edges of the watersheds of Kellogg and Marsh Creeks, the Mount Diablo Meridian, and the Clayton sphere of influence.

The action area encompasses all or most of five incorporated cities: Brentwood, Clayton, Oakley, Pittsburg, and Antioch; however, Antioch is not a Permittee to the HCP/NCCP. Three-quarters of the land in the action area, approximately 128,908 acres, are in unincorporated areas of Contra Costa County. For a more detailed description of the action area refer to the Intra-Service Opinion.

Analytical Framework for the Jeopardy Analysis

Jeopardy Determination

In accordance with policy and regulation, the jeopardy analysis in this Biological Opinion relies on three components: (1) the *Status of the Species*, which evaluates the California red-legged frog, Central California tiger salamander, Alameda whipsnake, giant garter snake, San Joaquin kit fox, vernal pool fairy shrimp, longhorn fairy shrimp, and vernal pool tadpole shrimp, the factors responsible for that condition, and their survival and recovery needs; (2) the *Environmental Baseline* and evaluates the condition of these listed species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of these listed species; (3) the *Effects of the Action*, which determines the direct and indirect effects of the proposed Federal action and the effects of any interrelated or interdependent activities on these species; and (4) *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on them.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the California red-legged frog, Central California tiger salamander, Alameda whipsnake, giant garter snake, San Joaquin kit fox, vernal pool fairy shrimp, longhorn fairy shrimp, and vernal pool tadpole shrimp's current status, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of these listed species in the wild.

The jeopardy analysis in this Biological Opinion places an emphasis on consideration of the range-wide survival and recovery needs of these listed species, and the role of the action area in the survival and recovery of these listed species as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the jeopardy determination.

Adverse Modification Determination

This Biological Opinion does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statutory provisions of the ESA to complete the following analysis with respect to critical habitat.

In accordance with policy and regulation, the adverse modification analysis in this Biological Opinion relies on four components: (1) the *Status of Critical Habitat*, which evaluates the range wide condition of designated critical habitat for vernal pool tadpole shrimp and longhorn fairy shrimp in terms of primary constituent elements (PCEs), the factors responsible for that condition, and the intended recovery function of the critical habitat at the provincial and range-wide scale; (2) the *Environmental Baseline*, which evaluates the condition of the critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the PCEs and how that will influence the recovery role of affected critical habitat units; and (4) *Cumulative Effects* which evaluates the effects of future, non-Federal activities in the action area on the PCEs and how that will influence the recovery role of affected critical habitat units.

For purposes of the adverse modification determination, the effects of the proposed Federal action on vernal pool fairy shrimp and longhorn fairy shrimp critical habitat are evaluated in the context of the range-wide condition of the critical habitat at the provincial and range-wide scales, taking into account any cumulative effects, to determine if the critical habitat range-wide would remain functional(or would retain the current ability for the PCEs to be functionally established in areas of currently unsuitable but capable habitat) to serve its intended recovery role for the vernal pool fairy shrimp and longhorn fairy shrimp.

The analysis in this Biological Opinion places an emphasis on using the intended range-wide recovery function of vernal pool fairy shrimp and longhorn fairy shrimp critical habitat and the role of the action area relative to that intended function as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the adverse modification determination.

Status of the Species

California red-legged frog

Listing Status: The California red-legged frog was listed as a threatened species on May 23, 1996 (Service 1996). Critical habitat was designated for this species on April 13, 2006 (Service 2006) and revisions to the critical habitat designation were published on March 17, 2010 (Service 2010). At this time, the Service recognized the taxonomic change from *Rana aurora draytonii* to *Rana draytonii* (Shaffer *et al.* 2010). A recovery plan was published for the California red-legged frog on September12, 2002 (Service 2002a).

Status of the Species: In a study of California red-legged frog terrestrial activity in a xeric environment in eastern Contra Costa County, Tatarian (2008) noted that a 57 percent majority of frogs fitted with radio transmitters in the Round Valley study area stayed at their breeding pools, whereas 43 percent moved into adjacent upland habitat or to other aquatic sites. Her study reported a peak seasonal terrestrial movement occurring in the fall months associated with the first 0.2-inch of precipitation and tapering off into spring. Upland movement activities ranged from 3 to 233 feet, averaging 80 feet, and were associated with a variety of refugia including grass thatch, crevices, cow hoof prints, ground squirrel burrows at the base of trees or rocks, logs, and under man-made structures; others were associated with upland sites lacking refugia (Tatarian 2008). The majority of terrestrial movements lasted from 1 to 4 days; however, one adult female was reported to remain in upland habitat for 50 days (Tatarian 2008). Upland refugia closer to aquatic sites were used more often and were more commonly associated with areas exhibiting higher object cover, e.g., woody debris, rocks, and vegetative cover. Subterranean cover was not significantly different between occupied upland habitat and non-occupied upland habitat.

With the exception of the information provided above, the Service has determined that the Status of the Species is substantively unchanged from the time the Service issued its Intra-Service Opinion for the HCP/NCCP. Therefore, the Service is incorporating by reference the Status of the Species from that opinion. For additional information regarding the Status of the Species, including description, distribution, status and natural history, and threats, refer to the Intra-Service Opinion for the HCP/NCCP.

Central California Tiger Salamander

Listing Status: The Service proposed to list the Central California tiger salamander as threatened on May 23, 2003. At this time reclassification of the Santa Barbara County and Sonoma County

DPSs from endangered to threatened was also proposed (Service 2003). In the same notice the Service also proposed a special rule under section 4(d) of the Act to exempt take for routine ranching operations for the Central DPS and, if reclassified to threatened, for the Santa Barbara and Sonoma County DPSs (Service 2003). On August 4, 2004, after determining that the listed Central DPS was threatened (Service 2004), the Service determined that the Santa Barbara and Sonoma County DPSs were threatened as well, and reclassified the California tiger salamander as threatened throughout its range, removing the Santa Barbara and Sonoma County populations as separately listed DPSs (Service 2004). In this notice we also finalized the special rule to exempt take for routine ranching operations for the California tiger salamander throughout its range (Service 2004).

On August 18, 2005, as a result of litigation of the August 4, 2004, final rule on the reclassification of the California tiger salamander DPSs (*Center for Biological Diversity et al. v. United States Fish and Wildlife Service et al.*, C 04-04324 WHA (N.D. Cal. 2005), the District Court of Northern California sustained the portion of the 2004 rule pertaining to listing the Central California tiger salamander as threatened with a special rule, vacated the 2004 rule with regard to the Santa Barbara and Sonoma DPSs, and reinstated their prior listing as endangered. The List of Endangered and Threatened Wildlife in part 17, subchapter B of Chapter I, title 50 of the Code of Federal Regulations (CFR) has not been amended to reflect the vacatures contained in this order, and continues to show the range-wide reclassification of the California tiger salamander as a threatened species with a special rule. We are currently in the process of correcting the CFR to reflect the current status of the species throughout its range. The California tiger salamander was listed by the State of California as a threatened species on May 20, 2010.

Status of the Species: Thirty-one percent (221 of 711 records and occurrences) of all Central California tiger salamander records and occurrences are located in Alameda, Santa Clara, San Benito (excluding the extreme western end of the County), southwestern San Joaquin, western Stanislaus, western Merced, and southeastern San Mateo counties. Of these counties, most of the records are from eastern Alameda and Santa Clara counties (CDFG 2010; Service 2004). The CDFG (2010) now considers 13 of these records from the Bay Area region as extirpated or likely to be extirpated.

Of the 140 reported California tiger salamander localities where wetland habitat was identified, only 7 percent were located in vernal pools (CDFG 2010). The Bay Area is located within the Central Coast and Livermore vernal pool regions (Keeler-Wolf *et al.* 1998). Vernal pools within the Coast Range are more sporadically distributed than vernal pools in the Central Valley (Holland 2003). This rate of loss suggests that vernal pools in these counties are disappearing faster than previously reported (Holland 2003). Most of the vernal pools in the Livermore Region in Alameda County have been destroyed or degraded by urban development, agriculture, water diversions, poor water quality, and long-term overgrazing (Keeler-Wolf *et al.* 1998). During the 1980s and 1990s, vernal pools were lost at a 1.1 percent annual rate in Alameda County (Holland 1998).

Due to the extensive losses of vernal pool complexes and their limited distribution in the Bay Area region, many breeding sites consist of artificial water bodies. Overall, 89 percent (124) of the identified water bodies are stock, farm, or berm ponds used by cattle grazing and/or as a temporary water source for small farm irrigation (CDFG 2010). This places the California tiger salamander at great risk of hybridization with non-native tiger salamanders, especially in Santa Clara and San Benito counties. Without long-term maintenance, the longevity of artificial breeding habitats is uncertain relative to naturally occurring vernal pools that are dependent on the continuation of seasonal weather patterns (Shaffer *et al.* 2004). California tiger salamanders are now primarily restricted to artificial breeding ponds, such as bermed ponds or stock ponds, which are typically located at higher elevations (CDFG 2010).

With the exception of the information provided above, the Service has determined that the Status of the Species is substantively unchanged from the time the Service issued its Intra-Service Opinion for the HCP/NCCP. Therefore, the Service is incorporating by reference the Status of the Species from that opinion. For additional information regarding the Status of the Species, including description, distribution, status and natural history, and threats, refer to the Intra-Service Opinion for the HCP/NCCP.

Alameda whipsnake

Listing Status: The Alameda whipsnake was federally listed as threatened on December 5, 1997 (Service 1997). Approximately 406,598 acres within Contra Costa, Alameda, Santa Clara, and San Joaquin counties were designated critical habitat for the Alameda whipsnake on October 3, 2000 (Service 2000). The final rule was vacated and remanded on May 9, 2003. Critical habitat was re-proposed on October 18, 2005 (Service 2005b). A final rule on critical habitat was released on October 2, 2006 (Service 2006a). A draft recovery plan was published in November 2002 (Service 2002b).

Status of the Species: The Alameda whipsnake is known to inhabit chemise-redshank chaparral, mixed chaparral, coastal scrub, annual grassland, blue oak-foothill pine, blue oak woodland, coastal oak woodland, valley oak woodland, eucalyptus, redwood, and riparian communities (Mayer and Laudenslayer, Jr. 1988). Grassland and oak woodland habitat independent of chaparral habitat may also be important for Alameda whipsnake populations. A recent examination of recorded whipsnake observations revealed that the species has been found 32 percent of the time in grass- or woodland habitats on slopes of varying aspects (Alvarez 2006). Additional data on habitat use gathered from incidental observations of free-ranging Alameda whipsnakes and recapture data from trapping surveys showed regular use of these habitats at distances greater than 600 feet from scrub and chaparral and included observations of the species more than 3.7 miles from scrub and chaparral communities (Swaim pers. comm. 2004).

With the exception of the information provided above, the Service has determined that the Status of the Species is substantively unchanged from the time the Service issued its Intra-Service Opinion for the HCP/NCCP. Therefore, the Service is incorporating by reference the Status of the Species from that opinion. For additional information regarding the Status of the Species,

including description, distribution, status and natural history, and threats, refer to the Intra-Service Opinion for the HCP/NCCP.

Giant garter snake

Listing Status: The giant garter snake was listed as a threatened species on October 20, 1993 (Service 1993). The Service published the *Draft Recovery Plan for the Giant Garter Snake* in July 1999.

Status of the Species: With the exception of the information provided above, the Service has determined that the Status of the Species is substantively unchanged from the time the Service issued its Intra-Service Opinion for the HCP/NCCP. Therefore, the Service is incorporating by reference the Status of the Species from that opinion. For additional information regarding the Status of the Species, including description, distribution, status and natural history, and threats, refer to the Intra-Service Opinion for the HCP/NCCP.

San Joaquin Kit Fox

Listing Status: The San Joaquin kit fox was listed as an endangered species on March 11, 1967 (Service 1967) and it was listed by the State of California as a threatened species on June 27, 1971.

Status of the Species: The status of the San Joaquin kit fox population in Contra Costa County is not well documented, but the infrequency of confirmed sightings suggest their density is low or their occurrence could be periodic (Jones and Stokes 2006). Maintaining a connection to core San Joaquin kit fox populations in the San Joaquin Valley is likely critical to supporting a viable kit fox population in Contra Costa County. The HCP/NCCP aims to protect land in the Plan Area in order to protect San Joaquin kit fox habitat and to provide linkages to areas to the south and east. Currently, the HCP/NCCP has acquired numerous parcels to the east of Los Vaqueros Reservoir area and in the vicinity of Black Diamond Mines Regional Preserve that are to be incorporated into the preserve system of the HCP/NCCP.

With the exception of the information provided above, the Service had determined that the Status of the Species is substantively unchanged from the time the Service issued its Intra-Service Opinion for the HCP/NCCP. Therefore, the Service is incorporating by reference the Status of the Species from that opinion. For additional information regarding the Status of the Species, including description, distribution, status and natural history, and threats, refer to the Intra-Service Opinion for the HCP/NCCP.

Vernal Pool Fairy Shrimp

Listing Status: A final rule was published on September 19, 1994, listing the vernal pool fairy shrimp as threatened under the Act (Service 1994). The final rule to designate critical habitat for 15 vernal pool species, including the vernal pool fairy shrimp, was published on August 6, 2003 (Service 2003). A final rule was published again on August 11, 2005 (Service 2005a). Further

information on the life history and ecology of the vernal pool fairy shrimp may be found in the final listing rule, the final rule to designate critical habitat, the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (Service 2005c), Eng *et al.* (1990), Helm (1998), Simovich *et al.* (1992), and Volmar (2002).

Status of the Species: With the exception of the information provided above, the Service has determined that the Status of the Species is substantively unchanged from the time the Service issued its Intra-Service Opinion for the HCP/NCCP. Therefore, the Service is incorporating by reference the Status of the Species from that opinion. For additional information regarding the Status of the Species, including description, distribution, status and natural history, and threats, refer to the Intra-Service Opinion for the HCP/NCCP.

Longhorn Fairy Shrimp

Listing Status: A final rule was published on September 19, 1994, to list longhorn fairy shrimp as endangered under the Act (Service 1994). The final rule to designate critical habitat for 15 vernal pool species, including the longhorn fairy shrimp, was published on August 6, 2003 (Service 2003). A final rule was published again on August 11, 2005 (Service 2005a). Further information on the life history and ecology of the longhorn fairy shrimp may be found in the final listing rule, the final rule to designate critical habitat, the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (Service 2005b), and Eng *et al.* (1990).

Status of the Species: Since the time of listing, surveys for longhorn fairy shrimp throughout its range have not located additional populations of the species, although additional occurrences within the four known populations have been detected. Currently, the California Natural Diversity Database reports 11 occurrences of longhorn fairy shrimp (CDFG 2010).

Informal monitoring of known populations of longhorn fairy shrimp has occurred within the Brushy Peak Preserve, Alameda County. There are several vernal pools that have longhorn fairy shrimp within the 507-acre Brushy Peak Preserve, which is owned by the Livermore Area Recreation and Park District and managed by the East Bay Regional Park District (EBRPD). These pools are within rock outcrops within multiple indentations that seasonally pool water, but the exact number of vernal pools containing longhorn fairy shrimp has not been quantified.

With the exception of the information provided above, the Service has determined that the Status of the Species is substantively unchanged from the time the Service issued its Intra-Service Opinion for the HCP/NCCP. Therefore, the Service is incorporating by reference the Status of the Species from that opinion. For additional information regarding the Status of the Species, including description, distribution, status and natural history, and threats, refer to the Intra-Service Opinion for the HCP/NCCP.

Vernal Pool Tadpole Shrimp

Listing Status: A final rule was published on September 19, 1994, to list vernal pool tadpole shrimp as endangered under the Act (Service 1994). The final rule to designate critical habitat for 15 vernal pool species, including the vernal pool tadpole shrimp, was published on August 6, 2003 (Service 2003). A final rule was published again on August 11, 2005 (Service 2005a). Further information on the life history and ecology of the vernal pool tadpole shrimp may be found in the final listing rule, the final rule to designate critical habitat, the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (Service 2005b), and Eng *et al.* (1990).

Status of the Species: The vernal pool tadpole shrimp is a California Great Central Valley endemic species, with the majority of the populations occurring in the Sacramento Valley. This species has also been reported from the Sacramento River Delta to the east side of San Francisco Bay, and from a few scattered localities in the San Joaquin Valley from San Joaquin County to Madera County (Rodgers 2001). Currently, the CNDDB lists 270 occurrences of vernal pool tadpole shrimp with one occurrence in Contra Costa County within the city limits of Antioch along Empire Mine Road (CDFG 2011). Currently the city of Antioch is not a permittee under the HCP/NCCP nor are any activities within the Antioch city limits covered by the HCP/NCCP.

With the exception of the information provided above, the Service has determined that the Status of the Species is substantively unchanged from the time the Service issued its Intra-Service Opinion for the HCP/NCCP. Therefore, the Service is incorporating by reference the Status of the Species from that opinion. For additional information regarding the Status of the Species, including description, distribution, status and natural history, and threats, refer to the Intra-Service Opinion for the HCP/NCCP.

Vernal Pool Fairy Shrimp and Longhorn Fairy Shrimp Critical Habitat

The Service designated 228,785 acres of critical habitat for the vernal pool fairy shrimp and 13,557 acres of critical habitat for the longhorn fairy shrimp in 2005 (Service 2005a). In a February 10, 2006, revision, we identified the designated critical habitat on a species by unit basis (Service 2006). In determining which areas to designate as critical habitat, the Service considers those physical and biological features (primary constituent elements) that are essential to the conservation of the species, and that may require special management considerations and protections (50 CFR § 424.14).

The primary constituent elements of critical habitat for both vernal pool fairy shrimp and longhorn fairy shrimp are the habitat components that provide:(1) topographic features characterized by mounds and swales and depressions within a matrix of surrounding uplands that result in complexes of continuously, or intermittently, flowing surface water in the swales connecting the pools and providing for dispersal and promoting hydroperiods of adequate length in the pools; (2) depressional features including isolated vernal pools with underlying restrictive soil layers that become inundated during winter rains and that continuously hold water for a

minimum of 23 days in all but the driest years; thereby providing adequate water for incubation, maturation, and reproduction. As these features are inundated on a seasonal basis, they do not promote the development of obligate wetland vegetation habitats typical of permanently flooded emergent wetlands; (3) sources of food, expected to be detritus occurring in the pools, contributed by overland flow from the pools' watershed, or the results of biological processes within the pools themselves, such as single-celled bacteria, algae, and dead organic matter, to provide for feeding; and (4) structure within the pools consisting of organic and inorganic materials, such as living and dead plants from plant species adapted to seasonally inundated environments, rocks, and other inorganic debris that may be washed, blown, or otherwise transported into the pools, that provide shelter.

Environmental Baseline

All Species

As of the 2010 annual report for the HCP/NCCP, 61.4 acres of terrestrial impacts, 0.61 acres of aquatic (non-stream) impacts, and 138.3 linear feet of aquatic (stream) impacts have been authorized under the HCP/NCCP. In addition, 4,475.7 acres of terrestrial habitat, 36.9 acres of aquatic (non-stream) habitat, and 116,569.2 linear feet of aquatic (stream) habitat have been conserved under the HCP/NCCP, which support numerous occurrences of the Covered Species.

California Red-legged frog

The proposed action is located in the East San Francisco Bay Core Area of the East San Francisco Bay Recovery Unit number 16 for the California red-legged frog (Service 2002a). California red-legged frogs have been documented throughout the 18,500-acre Los Vaqueros Watershed (Watershed) and stock ponds in the Watershed support some of the highest densities of California red-legged frog in the region (Jones and Stokes Associates 2006). The CNDDB reports 96 California red-legged frog occurrences in and near the Watershed (CDFG 2010).

The HCP/NCCP provides a regional conservation strategy that includes the development and acquisition of a preserve system. A completed preserve system will encompass 23,800 to 30,300 acres of land in eastern Contra Costa County and will include connections linking existing and future protected private and public lands.

There are 127 occurrences of the California red-legged frog within the action area in the CNDDB (CDFG 2011). A few additional occurrences of the California red-legged frog have been documented within the action area and some additional take of the species has occurred since the HCP/NCCP was permitted. The current expansion of the Los Vaqueros Reservoir will result in the inundation of 451.27 acres of upland habitat and two ponds and four marshes that support California red-legged; however, the Service believes that the Environmental Baseline for this species is not substantively different from that described in the Service's Intra-Service Opinion for the HCP/NCCP. Therefore, the Service is incorporating by reference the Environmental Baseline from that opinion. For additional information regarding the

Environmental Baseline for the California red-legged frog, refer to the Intra-Service Opinion for the HCP/NCCP.

Central California tiger salamander

The CNDDB describes over 150 occurrences of the Central California tiger salamanders in Contra Costa County with the majority of these records from the vicinity of the Los Vaqueros Watershed (CDFG 2010). A few additional occurrences of the Central California tiger salamander have been documented within the action area and some additional take of the species has occurred since the HCP/NCCP was permitted. The current expansion of the Los Vaqueros Reservoir will result in the inundation of 451.27 acres of upland habitat and one pond and one marsh known to support breeding populations of the Central California tiger salamander; however, the Service believes that the Environmental Baseline for this species is not substantively different from that described in the Service's Intra-Service Opinion for the HCP/NCCP. Therefore, the Service is incorporating by reference the Environmental Baseline from that opinion. For additional information regarding the Environmental Baseline for the Central California tiger salamander, refer to the Intra-Service Opinion for the HCP/NCCP.

Alameda whipsnake

There are 22 occurrences of the Alameda whipsnake within the action area in the CNDDB (CDFG 2011). The Service believes that the Environmental Baseline for this species is not substantively different from that described in the Service's Intra-Service Opinion for the HCP/NCCP. Therefore, the Service is incorporating by reference the Environmental Baseline from that opinion. For additional information regarding the Environmental Baseline for the Alameda whipsnake, refer to the Intra-Service Opinion for the HCP/NCCP.

Giant garter snake

There are no records of the giant garter snake within the action area in the CNDDB (CDFG 2011). The Service believes that the Environmental Baseline for this species is not substantively different from that described in the Service's Intra-Service Opinion for the HCP/NCCP. Therefore, the Service is incorporating by reference the Environmental Baseline from that opinion. For additional information regarding the Environmental Baseline for the giant garter snake refer to the Intra-Service Opinion for the HCP/NCCP.

San Joaquin Kit Fox

The Bureau of Reclamation recently completed formal consultation on the Contra Costa Water District's (CCWD) proposed expansion of the Los Vaqueros Reservoir (Reservoir Expansion) (Service file number 81420-2009-F-0201-1). The Reservoir Expansion will result in permanent impacts to 410.21 acres of annual grasslands and 29.34 acres of oak woodland. The expanded reservoir will also raise the waterline into three sections of oak woodland habitat to the west of the existing reservoir isolating two large grassland areas (totaling 284.76 acres) from

surrounding grasslands likely rendering these areas inaccessible to San Joaquin kit fox. In addition, a grassland corridor to the west of the reservoir will be interrupted by approximately 700 feet of oak woodland at each of three locations making it unlikely that San Joaquin kit fox will use the remaining area to the west of the expanded reservoir following reservoir expansion. Loss of this corridor will compromise the southern branch of the Round Valley corridor to Black Diamond Mines Regional Preserve.

In order to compensate for temporary and permanent effects to San Joaquin kit fox from loss of habitat from the Reservoir Expansion, the CCWD will acquire and preserve, in perpetuity, a minimum of 4,890 acres. This includes additional lands preserved to those impacted in order to account for the loss of habitat, movement corridors, and habitat connectivity for San Joaquin kit fox within the northern portion of their range, and for the loss of San Joaquin kit fox conservation easement lands. The compensation is expected to preserve existing movement corridors within the northern San Joaquin kit fox range and currently includes one large under crossing of the I-580 corridor in Alameda County.

San Joaquin kit fox sightings have been documented within and surrounding the action area (CDFG 2010, CCWD 2010). Documented sightings within and near the action area include: multiple sightings between 1967 and 1989 along Brushy Creek east of Vasco Road (CDFG 2010); two San Joaquin kit fox sightings along the proposed Vasco Road alignment in 1989 (Jones and Stokes 1990); two records from May 2001 and June 2002 on Vasco Caves Regional Preserve (Clark *et al.* 2003); and two sightings near Brushy Creek in 2002 (CDFG 2010). CCWD has performed annual kit fox surveys throughout the Los Vaqueros Watershed since constructing the reservoir in 1998. During this period a single San Joaquin kit fox was observed in 2008 in close proximity to the Los Vaqueros Watershed Administrative Offices northeast of the reservoir (Howard 2008).

Grasslands throughout the action area provide suitable San Joaquin kit fox habitat. Because San Joaquin kit foxes can use native habitats interspersed with development if there is minimal disturbance, adequate dispersal corridors, and sufficient prey-base the HCP/NCCP considers grassland habitat within wind turbine areas suitable for kit fox use. Threats within the action area include the loss, fragmentation, and degradation of habitat through urban, rural, agricultural, and wind development. Although the use of pesticides to control rodents and other pests is restricted on CCWD and HCP/NCCP preserve lands, use of pesticides on private land within the action area may pose a threat to kit fox on private lands either directly through poisoning or indirectly through reduction of prey abundance. In addition, coyotes, cited as a significant source of San Joaquin kit fox mortality, are thought to have increased in number on the Los Vaqueros Watershed since reservoir filling in 1998 (CCWD 2011).

Longhorn Fairy Shrimp

There are two known occurrences of longhorn fairy shrimp within the action area in the CNDDB (CDFG 2011). The Service believes that the Environmental Baseline for this species is not substantively different from that described in the Service's Intra-Service Opinion for the HCP/NCCP. Therefore, the Service is incorporating by reference the Environmental Baseline

from that opinion. For additional information regarding the Environmental Baseline for the longhorn fairy shrimp, refer to the Intra-Service Opinion for the HCP/NCCP.

Vernal Pool Fairy Shrimp

There are thirteen known occurrence of vernal pool fairy shrimp within the action area in the CNDDB (CDFG 2011). The Service believes that the Environmental Baseline for this species is not substantively different from that described in the Service's Intra-Service Opinion for the HCP/NCCP. Therefore, the Service is incorporating by reference the Environmental Baseline from that opinion. For additional information regarding the Environmental Baseline for the vernal pool fairy shrimp, refer to the Intra-Service Opinion for the HCP/NCCP.

Vernal Pool Tadpole Shrimp

There are no known occurrences of vernal pool tadpole shrimp within the action area in the CNDDB (CDFG 2011). The Service believes that the Environmental Baseline for this species is not substantively different from that described in the Service's Intra-Service Opinion for the HCP/NCCP. Therefore, the Service is incorporating by reference the Environmental Baseline from that opinion. For additional information regarding the Environmental Baseline for the vernal pool tadpole shrimp, refer to the Intra-Service Opinion for the HCP/NCCP.

Vernal Pool Fairy Shrimp and Longhorn Fairy Shrimp Critical Habitat

Critical Habitat Unit 19 for vernal pool fairy shrimp includes three subunits; Units 19A-B are located in Contra Costa County. Unit 19C is located in Alameda County. Units 19A and 19B fall within the Plan Area. Unit 19A lies just north of Marsh Creek Road and Unit 19B lies north of Corral Hollow Road, west of Clifton Court Forebay (Service 2005a). Unit 19C is outside the action area. Units 19A-B include approximately 6,439 acres (Service 2005a). These units are essential to the conservation of the species because they support nearly all of the known occurrences of vernal pool fairy shrimp within Contra Costa and Alameda Counties and because they are necessary to maintain the current geographic and ecological distribution of the species.

Critical Habitat Unit 1 for longhorn fairy shrimp includes two subunits referred to as the Altamont Pass Subunits; Unit 1A is located in Contra Costa County and Unit 1B in Alameda County. Within the Altamont Pass subunits longhorn fairy shrimp occur within clear depression pools in sandstone outcrops (Service 2005a). Unit 1A falls within the Plan Area primarily within the Vasco Caves Regional Preserve. Unit 1B is outside the action area. Units 1A-B include approximately 791 acres (Service 2005a). These units are essential to the conservation of the species because they support nearly all of the known occurrences of longhorn fairy shrimp within Contra Costa and Alameda Counties and because they are necessary to maintain the current geographic and ecological distribution of the species.

Effects of the Proposed Action

California Red-legged frog and Central California Tiger Salamander

The proposed action will result in temporary and permanent effects to aquatic and upland habitat for California red-legged frog and Central California tiger salamander. This could result in individuals being directly and/or indirectly injured or killed by activities that disturb breeding, feeding, sheltering, and dispersal habitat. The effects of activities covered by the RGP were analyzed in the Intra-Service Opinion for the HCP/NCCP, including minimization and mitigation measures for both species. No additional effects or effects different from those analyzed in the Intra-Service Opinion for the HCP/NCCP are expected. Therefore, the Service is incorporating by reference the Effects of the Proposed Action from that opinion. For additional information regarding the Effects of the Proposed Action on California red-legged frogs and the Central California tiger salamander, refer to the Intra-Service Opinion for the HCP/NCCP.

Alameda Whipsnake

The proposed action will result in temporary and permanent effects to habitat suitable for Alameda whipsnake resulting in direct and indirect effects to the species. The effects of activities covered by the RGP were analyzed in the Intra-Service Opinion for the HCP/NCCP, including minimization and mitigation measures. No additional effects or effects different from those analyzed in the Intra-Service Opinion for the HCP/NCCP are expected. Therefore, the Service is incorporating by reference the Effects of the Proposed Action from that opinion. For additional information regarding the Effects of the Proposed Action on Alameda whipsnakes, refer to the Intra-Service Opinion for the HCP/NCCP.

Giant Garter Snake

The proposed action will result in temporary and permanent effects to habitat suitable for giant garter snake resulting in direct and indirect effects to the species. The effects of activities covered by the RGP were analyzed in the Intra-Service Opinion for the HCP/NCCP, including minimization and mitigation measures. No additional effects or effects different from those analyzed in the Intra-Service Opinion for the HCP/NCCP are expected. Therefore, the Service is incorporating by reference the Effects of the Proposed Action from that opinion. For additional information regarding the Effects of the Proposed Action on giant garter snakes, refer to the Intra-Service Opinion for the HCP/NCCP.

San Joaquin Kit Fox

The proposed action will result in temporary and permanent effects to annual grassland habitat suitable for San Joaquin kit fox denning, foraging, or dispersal resulting in direct and indirect effects to the species. The effects of activities covered by the RGP were analyzed in the Intra-Service Opinion for the HCP/NCCP, including minimization and mitigation measures. No additional effects or effects different from those analyzed in the Intra-Service Opinion for the

HCP/NCCP are expected. Therefore, the Service is incorporating by reference the Effects of the Proposed Action from that opinion. For additional information regarding the Effects of the Proposed Action on San Joaquin kit foxes, refer to the Intra-Service Opinion for the HCP/NCCP.

Vernal Pool Fairy Shrimp, Longhorn Fairy Shrimp, and Vernal Pool Tadpole Shrimp

Direct and indirect effects to vernal pool fairy shrimp, longhorn fairy shrimp, and tadpole shrimp will result from activities covered by the proposed RGP. The effects of activities covered by the RGP were analyzed in the Intra-Service Opinion for the HCP/NCCP, including minimization and mitigation measures for both species. No additional effects or effects different from those analyzed in the Intra-Service Opinion for the HCP/NCCP are expected. Therefore, the Service is incorporating by reference the Effects of the Proposed Action from that opinion. For additional information regarding the Effects of the Proposed Action on vernal pool fairy shrimp and longhorn fairy shrimp, refer to the Intra-Service Opinion for the HCP/NCCP.

Vernal Pool Fairy Shrimp Critical Habitat

Critical habitat for vernal pool fairy shrimp is found within the action area. Effects to vernal pool fairy shrimp critical habitat will result from activities covered by the proposed RGP. The effects of activities covered by the RGP were analyzed in the Intra-Service Opinion for the HCP/NCCP, including minimization and mitigation measures. No additional effects or effects different from those analyzed in the Intra-Service Opinion for the HCP/NCCP are expected. Therefore, the Service is incorporating by reference the Effects of the Proposed Action from that opinion. For additional information regarding the Effects of the Proposed Action on vernal pool fairy shrimp critical habitat, refer to the Intra-Service Opinion for the HCP/NCCP.

Longhorn Fairy Shrimp Critical Habitat

Critical habitat for longhorn fairy shrimp is found within the action area. Effects to longhorn fairy shrimp critical habitat will result from activities covered by the proposed RGP. The effects of activities covered by the RGP were analyzed in the Intra-Service Opinion for the HCP/NCCP, including minimization and mitigation measures. No additional effects or effects different from those analyzed in the Intra-Service Opinion for the HCP/NCCP are expected. Therefore, the Service is incorporating by reference the Effects of the Proposed Action from that opinion. For additional information regarding the Effects of the Proposed Action on longhorn fairy shrimp critical habitat, refer to the Intra-Service Opinion for the HCP/NCCP.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this Biological Opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The Service is aware of numerous non-federal actions currently planned in the vicinity of the proposed action, defined here as eastern Contra Costa County. Environmental analysis is either underway or completed for many of these projects. These projects include such actions as urban expansion, road improvement projects, water transfers and developments, and continued agricultural development. The cumulative effects of these known actions pose a significant threat to the eventual recovery of all listed species in this area. However, many of these activities will be reviewed under section 7 of the Act as a result of the Federal nexus provided by section 404 of the Federal Water Pollution Control Act, as amended (Clean Water Act). Additionally, many of these activities are included as Covered Activities for the HCP/NCCP and effects resulting from these activities are being mitigated for under the HCP/NCCP.

Urban expansion in eastern Contra Costa and Alameda counties and western San Joaquin County will further fragment and isolate populations of California red-legged frogs, California tiger salamanders, and San Joaquin kit fox from other nearby populations. Urban expansion is accompanied by increased traffic resulting in increased wildlife injury and mortality from vehicle strikes. A 2009 wildlife movement study conducted along a 2.5-mile stretch of Vasco Road adjacent to the action area documented substantial wildlife mortality from vehicle strikes including 50 California tiger salamanders and 120 California red-legged frogs over a 15 month period (Mendelsohn *et al.* 2009). Continued development and maintenance of roadways and water projects to serve expanding urban areas are also likely to further fragment and isolate populations of these species. In addition, urban expansion is generally accompanied by increased predation associated with domesticated pets or feral animals that negatively affect populations of these species.

The global average temperature has risen by approximately 0.6 degrees Celsius during the 20th Century (IPPC 2001, 2007; Adger *et al.* 2007). There is an international scientific consensus that most of the warming observed has been caused by human activities (IPPC 2001, 2007; Adger *et al.* 2007), and that it is "very likely" that it is largely due to manmade emissions of carbon dioxide and other greenhouse gases (Adger *et al.* 2007). Ongoing climate change (Anonymous 2007; Inkley *et al.* 2004; Adger *et al.* 2007; Kanter 2007) likely imperils several listed species including the California red-legged frog, Central California tiger salamander, Alameda whipsnake, giant garter snake, San Joaquin kit fox, vernal pool fairy shrimp, longhorn fairy shrimp, and vernal pool tadpole shrimp and the resources necessary for their survival. Since climate change threatens to disrupt annual weather patterns, it may result in a loss of their habitats and/or food sources, and/or increased numbers of their predators, parasites, and diseases. Where populations are isolated, a changing climate may result in local extinction, with range shifts precluded by lack of habitat.

Conclusion

After reviewing the current status of the California red-legged frog, Central California tiger salamander, Alameda whipsnake, giant garter snake, San Joaquin kit fox, vernal pool fairy shrimp, longhorn fairy shrimp, and vernal pool tadpole shrimp, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's

biological opinion that the RGP that would be used to authorize placement of dredged or fill material into waters of the U.S. for multiple actions considered to be Covered Activities under the East Contra Costa Habitat Conservation Plan/Natural Community Conservation Plan, as proposed, is not likely to jeopardize the continued existence of the California red-legged frog, Central California tiger salamander, Alameda whipsnake, giant garter snake, San Joaquin kit fox, vernal pool fairy shrimp, longhorn fairy shrimp, or vernal pool tadpole shrimp. We base this conclusion on the following: (1) some project effects are temporary in nature;(2) the proposed action does not include effects to listed species that were not analyzed in the Intra-Service Opinion for the HCP/NCCP; and (3) establishment of a 23,800 to 30,300 acres preserve system in eastern Contra Costa County to preserve and manage habitat for listed species in perpetuity.

The project is located within critical habitat for the vernal pool fairy shrimp and longhorn fairy shrimp; however the proposed action will not result in its adverse modification or destruction. We based this conclusion on the following: (1) only a small percentage of critical habitat for vernal pool fairy shrimp and longhorn fairy shrimp would be affected by the proposed action; (2) the PCEs that are essential to the conservation value of vernal pool fairy shrimp and longhorn fairy shrimp critical habitat will remain and continue to contribute to the conservation function of the unit as a whole; and (3) range-wide critical habitat for vernal pool fairy shrimp and longhorn fairy shrimp would remain functional.

INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as actions that create the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are nondiscretionary, and must be implemented by the Corps so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption under section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity that is covered by this incidental take statement. If the Corps (1) fails to require the applicant, or any of its contractors to adhere to the terms and conditions of the incidental take statement through enforceable terms, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

Amount or Extent of Take

All Listed Species

The amount of incidental take exempted from the prohibitions described under section 9 of the Act through this Biological Opinion is a subset of the incidental take authorized under the HCP/NCCP. Take associated with activities carried out under the HCP/NCCP has been authorized under a section 10(a)(1)(B) permit; however, incidental take associated with actions authorized, funded, or carried out by Federal Agencies cannot be authorized under section 10 of the Act.

The extent of the take will be difficult to detect or quantify because of the ecology and biology of these species. Additionally, their size and cryptic nature makes the finding of a dead specimen unlikely. Seasonal population fluctuations may also make losses of these species difficult to quantify. Due to the difficulty in quantifying the number of California red-legged frog, Central California tiger salamander, Alameda whipsnake, giant garter snake, San Joaquin kit fox, vernal pool fairy shrimp, longhorn fairy shrimp, or vernal pool tadpole shrimp that will be taken as a result of the proposed action, the Service is quantifying take incidental to the proposed project as the number of acres of habitat that will become unsuitable for the species as a result of the action.

The exact subset of incidental take expected in conjunction with the RGP cannot be specifically segregated from the amount of take authorized under the HCP/NCCP, therefore, the Service is only authorizing the same amount of incidental take associated with the HCP/NCCP (i.e., the take is not in addition to that associated with the HCP/NCCP). The Service estimates that incidental take of California red-legged frog, Central California tiger salamander, San Joaquin kit fox, giant garter snake, Alameda whipsnake, vernal pool fairy shrimp, longhorn fairy shrimp, and vernal pool tadpole shrimp associated with loss of up to 13,387 acres of habitat will be affected.

Upon implementation of the Reasonable and Prudent Measures, incidental take of California red-legged frog, Central California tiger salamander, San Joaquin kit fox, giant garter snake, Alameda whipsnake, vernal pool fairy shrimp, longhorn fairy shrimp, and vernal pool tadpole shrimp associated with the Corps' proposed RGP will become exempt from the prohibitions described under section 9 of the Act.

Effect of the Take

In the accompanying biological opinion and the Intra-Service Opinion for the HCP/NCCP, the Service has determined that this level of anticipated take is not likely to result in jeopardy to the California red-legged frog, Central California tiger salamander, San Joaquin kit fox, giant garter snake, Alameda whipsnake, vernal pool fairy shrimp, longhorn fairy shrimp, and vernal pool tadpole shrimp

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measure is necessary and appropriate to minimize the effect of take on the Central California tiger salamander, San Joaquin kit fox, giant garter snake, Alameda whipsnake, vernal pool fairy shrimp, longhorn fairy shrimp, and vernal pool tadpole shrimp:

1. The proposed action will be implemented by the project proponent as described in the *Description of the Proposed Action* and the East Contra Costa Habitat Conservation Plan/Natural Communities Conservation Plan and further, conservation measures shall be supplemented by terms and conditions (a) through (e).

Terms and Conditions

To be exempt from the prohibitions of Section 9 of the Act, the Corps shall ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

The following terms and conditions will implement the Reasonable and Prudent Measure described above:

a. The applicant shall minimize the potential for harm, harassment, injury, and death of federally listed wildlife species resulting from project related activities including implementation of the Conservation Measures in this Biological Opinion.

b. The applicant shall adhere to all of the conservation and management measures of the HCP/NCCP and the Terms and Conditions of its Incidental Take Permit (TE160958-0).

c. All activities authorized by the Corps under this RGP must occur while the HCP/NCCP's Incidental Take Permit (TE160958-0) is valid.

d. If the Corps determines that the activity complies with the terms and conditions of the RGP, including confirmation that proposed impacts to aquatic resources are minimal, written notification will be provided to the Conservancy, the Service, and CDFG consistent with the reporting requirements of the HCP/NCCP; this confirmation will be identified in the Corps' section 7 initiation letter to the Service for individual project applications under the RGP.

e. The permittee must allow representatives from the Conservancy, Service and CDFG to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with East Contra Costa HCP/NCCP and the Terms and Conditions of its Incidental Take Permit (TE160958-0).

f. All preserved, created, restored or enhanced waters of the U.S. and adjacent buffers on the project site shall be preserved and permanently protected consistent with the requirements of the East Contra Costa HCP/NCCP and subject to review and approval by the Service and CDFG.

Reporting Requirements

The Service is incorporating by reference the reporting requirements of the East Contra Costa HCP/NCCP and its associated permit and Terms and Conditions (TE160958-0).

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases. The Service requests notification of the implementation of any conservation recommendations in order to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats. No voluntary conservation recommendations are needed or proposed for the proposed action.

RENITIATION - CLOSING STATEMENT

This concludes formal consultation on the proposed issuance of a RGP for the East Contra Costa Habitat Conservation Plan/Natural Community Conservation Plan in Contra Costa County, California. As provided in 50 CFR 402.16, reinitiating of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this Biological Opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must immediately cease, pending reinitiating.

If you have any questions regarding this Biological Opinion on the proposed issuance of a Regional General Permit for the East Contra Costa Habitat Conservation Plan/Natural Community Conservation Plan in Contra Costa County, California, please contact Stephanie Jentsch, Mike Thomas, or Eric Tattersall (Deputy Assistant Field Supervisor) of my staff at the letterhead address or at telephone (916) 414-6600.

Sincerely,

Susan K. Moore

Susan K. Moore
Field Supervisor

cc:

Scott Wilson, California Department of Fish and Game, Yountville, California.
John Kopchik, Contra Costa County, Martinez, California.

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Planning Survey Report/Certificate of Coverage (HCP)

Contra Costa County
Public Works
Department

Brian M. Balbas, Director
Deputy Directors
Stephen Kowalewski, Chief
Allison Knapp
Warren Lai
Carrie Ricci
Joe Yee

January 30, 2020

Mr. Tim Jensen
Contra Costa County Flood Control District
255 Glacier Drive
Martinez, CA 94553

RE: Three Creeks Parkway Restoration Project
Our File: 7562-6D8490

Dear Mr. Jensen:

The United States Fish and Wildlife Service and the California Department of Fish and Game have issued permits pursuant to the federal Endangered Species Act and the California Natural Community Conservation Planning Act (collectively "Permits") authorizing "Take" of certain species in accordance with the terms and conditions of the Permits, the East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan ("HCP/NCCP") and the January 22, 2007 Implementing Agreement for the HCP/NCCP ("Implementing Agreement"). Under the Permits, certain activities by certain parties may be authorized to "take" certain species, provided all applicable terms and conditions of the Permits, the HCP/NCCP, and the associated Implementing Agreement are met.

Contra Costa County Flood Control and Water Conservation District ("District") is a "Permittee" of the HCP/NCCP and as such are authorized to implement covered projects and activities performed by the District. In accordance with the Implementing Agreement a Permittee is responsible for ensuring its own compliance with the terms of the Implementing Agreement, the HCP/NCCP, and the Permits with regard to any covered activity it implements. The District intends to implement the Three Creeks Parkway Restoration Project at Marsh Creek ("Project"), an HCP/NCCP covered activity.

In compliance with the HCP/NCCP, a Planning Survey Report ("PSR") application for the Project was prepared and submitted to the East Contra Costa County Habitat Conservancy (the HCP/NCCP "Implementing Entity" or "Conservancy") for review and approval. The Conservancy has determined that the PSR last modified on August 14, 2019 complies with the HCP/NCCP.

The Project is entitled to coverage under the Permits for the proposed activities described in the PSR, with respect to any take of species as identified in the HCP/NCCP. Take authorization under the Permits applies only to the uses of the Project area and conditions described in the PSR. If the District does not fully comply with the conditions set forth in the PSR, take authorization under the Permits will thereby be invalidated and can be temporarily or permanently revoked by the United States Fish and Wildlife Service and the California Department of Fish and Wildlife. The take authorization and conditions and limitations that apply to the take authorization are generally described in the Permits, the HCP/NCCP, and the Implementing Agreement.

This Certification of Coverage does not increase the state and federal agencies regulatory authority over the District, but instead ensures compliance with the federal Endangered Species Act (including 50 CFR section 13.25(d)), the California Natural Community Conservation Planning Act, and the California Endangered Species Act. Coverage under the Permits will become effective immediately.

Should you have any questions, please contact me at (925) 313-2192.

Sincerely,

Claudia Gemberling

Claudia Gemberling
Environmental Analyst III
Environmental Services Division

CG:
\\PW-DATA\grpdata\engsvc\ENVIRO\Flood Control\Three Creeks Parkway Restoration Project (WO#8490, 8176)\Permits\HCP\Certificate of Coverage_1-30-20.docx

Enclosure

c: Sarah Beamish, American Rivers
Rich Walkling, RDG

Application Form and Planning Survey Report

To Comply With and Receive Permit Coverage Under
The East Contra Costa County Habitat Conservation Plan
and Natural Community Conservation Plan

Please complete this application to apply for take authorization under the state and federal East Contra Costa County HCP/NCCP incidental take permits. The East Contra Costa County Habitat Conservancy ("Conservancy") or local jurisdiction (City of Brentwood, City of Clayton, City of Oakley, City of Pittsburg, and Contra Costa County) may request more information in order to deem the application complete.

I. PROJECT OVERVIEW

PROJECT INFORMATION	
PROJECT NAME: Three Creeks Parkway Restoration Project at Marsh Creek	
PROJECT TYPE: ☐ Residential ☐ Commercial ☐ Transportation ☐ Utility ☒ Other creek restoration	
PROJECT DESCRIPTION (BRIEF): to improve flood protection and restore Marsh Creek at the confluence of Sand Creek and Deer Creek	
PROJECT ADDRESS/LOCATION: Marsh Creek channel between Dainty Avenue and the railroad crossing.	
PARCEL/PROJECT SIZE (ACRES): 23.076 acres	
PROJECT APN(S): 017-170-007, 017-170-008, 017-17c-004	
APPLICATION SUBMITTAL DATE:	**FINAL PSR DATE:** (City/County/Conservancy use)
LEAD PLANNER: Claudia Gemberling, (925) 313-2192, claudia.gemberling@pw.cccounty.us **JURISDICTION:** ☐ City of Brentwood ☐ City of Clayton ☐ City of Oakley ☐ City of Pittsburg ☒ Contra Costa County ☐ Participating Special Entity* *Participating Special Entities are organizations not subject to the authority of a local jurisdiction. Such organizations may include school districts, irrigation districts, transportation agencies, local park districts, geological hazard abatement districts, or other utilities or special districts that own land or provide public services.	
DEVELOPMENT FEE ZONE: ☒ Zone I ☐ Zone II ☐ Zone III ☐ Zone IV See figure 9-1 of the HCP/NCCP at www.cocohcp.org for a generalized development fee zone map. Detailed development fee zone maps by jurisdiction are available from the jurisdiction.	

PROJECT APPLICANT INFORMATION	
APPLICANT'S NAME: Contra Costa County Flood Control & Water Conservation District	
AUTHORIZED AGENT'S NAME AND TITLE: Mike Carlson	
PHONE NO.: (925) 313-2000	**APPLICANT'S E-MAIL:** Mike.Carlson@pw.cccounty.us
MAILING ADDRESS: 255 Glacier Drive, Martinez, CA 94553	

BIOLOGIST INFORMATION[1]	
BIOLOGICAL/ENVIRONMENTAL FIRM: Wood Biological Consulting	
CONTACT NAME AND TITLE: Chris Rogers	
PHONE NO.: (415) 254-4835	**CONTACT'S E-MAIL:** chris@wood-biological.com
MAILING ADDRESS: PO Box 1569, El Granada, CA 94018	

[1] A USFWS/CDFW-approved biologist (project-specific) is required to conduct the surveys. Please submit biologist(s) approval request to the Conservancy.

II. PROJECT DETAILS

Please complete and/or provide the following attachments:

1) ***Project Description***
   *Attach as **Attachment A: Project Description**. Provide a detailed written description that concisely and completely describes the project and location. Include the following information:*
   - *All activities proposed for the site or project, including roads utilized, construction staging areas, and the installation of underground facilities, to ensure the entire project is covered by the HCP/NCCP permit*
   - *Proposed construction dates, including details on construction phases, if applicable*
   - *Reference a City/County application number for the project, if applicable*
   - *General Best Management Practices, if applicable*
   - *If the project will have temporary impacts, please provide a restoration plan describing how the site will be restored to pre-project conditions, including revegetation seed mixes or plantings and timing*

2) ***Project Vicinity Map***
   *Provide a project vicinity map. Attach as **Figure 1** in **Attachment B: Figures**.*

3) ***Project Site Plans***
   *Provide any project site plans for the project. Attach as **Figure 2** in **Attachment B: Figures**.*

4) ***CEQA Document***
   Indicate the status of CEQA documents prepared for the project. Provide additional comments below table if necessary.

Type of Document	Status	Date Completed
☒ Initial Study	adopted; addendum is pending	8/2/2016; adopted 9/27/16
☐ Notice of Preparation		
☐ Draft EIR		
☐ Final EIR		
☐ Notice of Categorical Exemption		
☐ Notice of Statutory Exemption		
☒ Other (Mitigated Neg Declaration)	adopted; addendum is pending	8/2/2016; adopted 9/27/16

An Initial Study/Mitigated Negative Declaration was completed and filed with the State Clearinghouse (SCH #2016082008). However, there were additions to the project description and an Addendum was approved by Contra Costa County on April 6, 2018. The Project Description (Attachment A) reflects these changes.

III. EXISTING CONDITIONS AND IMPACTS

Please complete and/or provide the following attachments:

1) ***Field-Verified Land Cover Map***[2]
   *Attach a field-verified land cover map in **Attachment B: Figures** and label as **Figure 3**. The map should contain all land cover types present on-site overlaid on aerial/satellite imagery. Map colors for the land cover types should conform to the HCP/NCCP (see Figure 3-3: Landcover in the Inventory Area for land cover type legend).*

2) ***Photographs of the Project Site***
   *Attach representative photos of the project site in **Attachment B: Figures** and label as **Figure 4**. Please provide captions for each photo.*

[2] For PSEs and city or county public works projects, please also identify permanent and temporary impact areas by overlaying crosshatching (permanent impacts) and hatching (temporary impacts) on the land cover map.

3) Land Cover Types and Impacts and Supplemental Tables

- *For all terrestrial land cover types please provide calculations to the nearest* ***hundredth of an acre (0.01)****.*
  For aquatic land cover types please provide calculations to the nearest ***thousandth of an acre (0.001)****.*
- ***Permanent Impacts*** *are broadly defined in the ECCC HCP/NCCP to include all areas removed from an undeveloped or habitat-providing state and includes land in the same parcel or project that is not developed, graded, physically altered, or directly affected in any way but is isolated from natural areas by the covered activity. Unless such undeveloped land is dedicated to the Preserve System or is a deed-restricted creek setback, the development mitigation fee will apply (if proposed, would require Conservancy approval).*
- ***Temporary Impacts*** *are broadly defined in the ECCC HCP/NCCP as any impact on vegetation or habitat that does not result in permanent habitat removal (i.e. vegetation can eventually recover).*
- *If* ***wetland (riparian woodland/scrub, wetland, or aquatic)*** *land cover types are present on the parcel but will not be impacted please discuss in the following section 4) Jurisdictional Wetlands and Waters. Wetland impact fees will only be charged if wetland features are impacted. However, development fees will apply to the entire parcel.*
- ***Stream*** *land cover type is considered a linear feature where impacts are calculated based on length impacted. The acreage within a stream, below Top of Bank (TOB), must be assigned to the adjacent land cover type(s). Insert area of impact to stream below TOB in parentheses after the Land Cover acreage number (e.g., Riparian Woodland/Scrub: 10 (0.036) – where 10 is the total impacted acreage* <u>*including*</u> *0.036 acre, which is the acreage within stream TOB). Complete following supplemental* ***Stream Feature Detail*** *table to provide information for linear feet.*
- ***Total Impacts*** *acreage should be the* <u>*total parcel acreage*</u> *(development project) or* <u>*project footprint acreage*</u> *(rural infrastructure or utility project).*

Table 1: Land Cover Types and Impacts

Land Cover Type	Permanent Impacts	Temporary Impacts	*Proposed for HCP/NCCP Dedication on the Parcel (Requires Conservancy Approval)* *Stream Setback*	*Preserve System Dedication*
Grassland				
Annual Grassland				
Alkali Grassland				
Ruderal	1.262	14.221		
Shrubland				
Chaparral and Scrub				
Woodland				
Oak Savannah				
Oak Woodland				
Riparian				
Riparian Woodland/Scrub				
Wetland				
Permanent Wetland				
Seasonal Wetland				
Alkali Wetland				
Aquatic				
Aquatic (Reservoir/Open Water)				
Slough/Channel		0.057		
Pond				
Stream (in linear feet)			-	-
Irrigated Agriculture				
Pasture				
Cropland				
Orchard				
Vineyard				
Other				
Nonnative woodland				
Wind turbines				
Developed (not counted toward Fees)				
Urban	1.117	1.266		
Aqueduct				
Turf				
Landfill				
TOTAL IMPACTS	2.379	15.544		

Identify any uncommon vegetation and uncommon landscape features[3]:

Supplemental to Table 1: Uncommon Vegetation and Landscape Features

	Permanent Impacts	Temporary Impacts
Uncommon Grassland Alliances		
Purple Needlegrass Grassland		
Blue Wildrye Grassland		
Creeping Ryegrass Grassland		
Wildflower Fields		
Squirreltail Grassland		
One-sided Bluegrass Grassland		
Serpentine Bunchgrass Grassland		
Saltgrass Grassland		
Alkali Sacaton Bunchgrass Grassland		
☐ Other		
Uncommon Landscape Features		
Rock Outcrops		
Caves		
Springs and seeps		
Scalds		
Sand Deposits		
☐ Mines[4]		
☐ Buildings (bat roosts)[3]		
☐ Potential nest sites (trees or cliffs)[3]		

Please provide details of impacts to stream features:

Stream Name: Marsh Creek

Watershed: Marsh Creek

Supplemental to Table 1: Stream Feature Detail[5]

Stream Width	Stream Type[6]	Permanent Impacts (linear feet)[7]	Temporary Impacts (linear feet)[7]
☐ ≤ 25 feet wide ☒ > 25 feet wide	☒ Perennial ☐ Intermittent ☐ Ephemeral, 3rd or higher order ☐ Ephemeral, 1st or 2nd order	0	4,000
☐ ≤ 25 feet wide ☐ > 25 feet wide	☐ Perennial ☐ Intermittent ☐ Ephemeral, 3rd or higher order ☐ Ephemeral, 1st or 2nd order		
☐ ≤ 25 feet wide ☐ > 25 feet wide	☐ Perennial ☐ Intermittent ☐ Ephemeral, 3rd or higher order ☐ Ephemeral, 1st or 2nd order		

[3] These acreages are for Conservancy tracking purposes. Impacts to these uncommon vegetation and landscape features should be accounted for within the land cover types in Table 1 (e.g., x acres of purple needlegrass in this supplemental table should be accounted for within annual grassland in Table 1).
[4] Insert amount/number, not acreage. Provide additional information on these features in Attachment A: Project Description.
[5] Use more than 1 row as necessary to describe impacts to streams on site.
[6] See glossary (Appendix A) for definition of stream type and order.
[7] Stream length is measured along stream centerline, based on length of impact to any part of the stream channel, TOB to TOB.

4) Summary of Land Cover Types

Please provide a written summary of descriptions for land cover types found on site including characteristic vegetation.

The entire project area has been highly modified historically by flood control and agricultural activities. No natural, unaltered plant communities are present. As shown in Figure 3-1 (Landcover in the Inventory Area), the predominant vegetation type that would be affected by Project implementation is mapped as urban/future urban, with an area of orchard at the Hancock parcel; Marsh Creek is mapped as slough/channel.

As shown in the field-verified land cover map (Attachment B, Figure 3-2), urban land cover is present on both sides of Marsh Creek, corresponding to paved and unpaved access roads and trails. Urban lands are mostly unvegetated, although scattered herbs species typical of ruderal habitat may occur on unpaved portions.

The Hancock parcel supports ruderal habitat (see Attachment B, Figure 4, pages 19-22). Ruderal habitat on site supports low vegetative cover due to routine disking. At the time of the present surveys, commonly encountered plant species included bristly ox-tongue (*Helminthotheca echioides*), field bindweed (*Convolvulus arvensis*), Italian ryegrass (*Festuca perenne*), Italian thistle (*Carduus pycnocephalus*), ripgut brome (*Bromus diandrus*), wild lettuce (*Lactuca serriola*), summer mustard (*Hirschfeldia incana*), bull mallow (*Malva nicaeensis*), red-stemmed filaree (*Erodium cicutarium*), wild radish (*Raphanus sativus*), and wild oats (*Avena fatua*). Remnant orchard trees present include sweet almond and black walnut. Scattered native herbs detected include alkali mallow (*Sida leprosa*), annual fireweed (*Epilobium brachyantherum*), common fiddleneck (*Amsinckia intermedia*), dove weed (*Croton setiger*), coyote brush (*Baccharis pilularis*), and salt grass (*Distichlis spicata*). Native trees present include coast live oak (*Quercus agrifolia*) and valley oak (*Quercus lobata*).

Within the project site, Marsh Creek is characterized as the slough/channel land cover type. The Marsh Creek channel is a perennial stream course subject to high winter scouring flows (see Attachment B, Figure 4, pages 2-10) and vegetation management to maintain flood capacity. As such, there is little opportunity for the establishment of perennial emergent vegetation. Included in the slough/channel habitat type is an ephemeral marsh wetland that only exists during low flow seasons. As flows subside at the end of winter, a narrow band of freshwater marsh habitat develops along the base of each channel bank of the middle and lower reaches of the Project site. Native wetland indicator species detected include broadleaf cattail (*Typha latifolia*), California bulrush (*Schoenoplectus californicus*), three-square (*Schoenoplectus americanus*), umbrella sedge (*Cyperus eragrostis*), and water cress (*Nasturtium officinale*). Saplings of native riparian trees are also present, including Fremont cottonwood (*Populus fremontii*), black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), and Oregon ash (*Fraxinus latifolia*). This is mapped as slough/channel land cover type.

Non-native wetland indicator species detected include knotgrass (*Paspalum disthichum*), water bentgrass (*Polypogon viridis*), and water mint (*Mentha aquatica*).

Although the HCP/NCCP maps the Marsh Creek channel as slough/channel, the area that will be impacted along the flood control channel banks is outside of the active channel and classified as ruderal. The banks of the flood control channel have been altered historically by grading and filling. Along the banks of Marsh Creek, ruderal habitat on site is dominated by non-native grasses and forbs such as bristly ox-tongue, bull mallow, field bindweed, Italian ryegrass, Italian thistle, milk thistle, red brome, redstemmed filaree, ripgut brome, summer mustard, wild lettuce, wild oats, and wild radish, among others. Native plant species detected on the channel banks include alkali mallow, blue wildrye, California brome, common evening primrose, and Douglas' mugwort.

5) Jurisdictional Wetlands and Waters

If wetlands and waters are present on the project site, project proponents must conduct a delineation of jurisdictional wetlands and waters. Jurisdictional wetlands and waters are defined on pages 1-18 and 1-19 of the ECCC HCP/NCCP as the following land cover types: permanent wetland, seasonal wetland, alkali wetland, aquatic, pond, slough/channel, and stream. It should be noted that these features differ for federal and state jurisdictions. If you have identified any of these land cover types in Table 1, complete the section below.

a) *Attach the wetland delineation report as* ***Attachment E: Wetland Delineation.*** *If a wetland delineation has not been completed, please explain below in section 4c.*

b) Please check the following permits the project may require. Please submit copies of these permits to the Conservancy prior to the start of construction:

☒ CWA Section 404 Permit[8] ☒ CWA Section 401 Water Quality Certification

☐ Waste Discharge Requirements ☒ Lake and Streambed Alteration Agreement

c) Provide any additional information on impacts to jurisdictional wetland and waters below, including status of the permit(s):

As described in the Biological Resource Assessment report (Attachment F; see Section 3.1), freshwater marsh wetland vegetation is occasionally present in narrow patches along the shoreline of Marsh Creek during low flow seasons. This vegetation is considered ephemeral in nature in that it is washed away with winter storm events, and then recolonizes with the return to low summer flows. These are mapped and counted as part of the slough/channel land cover. Given all of the above, a formal wetland delineation was deemed not to be warranted.

A preliminary delineation of the limits of waters of the U.S./waters of the State was performed for the Upper, Middle and Lower reaches of the proposed Project, completed during separate surveys conducted on May 12, 2015, November 17, 2015, and July 22, 2016. Methods were in accordance with the procedures outlined in Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE, 2008). Determination of the limits of the ordinary high water mark (OHWM) conformed to procedures outlined in USACE (2006). The limits of jurisdiction are based on the OHWM for Water of the U.S. and the top of bank (TOB) for Waters of the State. Permit applications have been prepared and submitted to the USACE, CDFW, and RWQCB. A summary of project effects on the creek is presented in Attachment A – Project Description, and Table 1.

6) Species-Specific Planning Survey Requirements

Based on the land cover types found on-site and identified in Table 1, check the applicable boxes in Table 2a.

Table 2a. Species –Specific Planning Survey Requirements

Land Cover Type in Project Area	Required Survey Species	Habitat Element in Project Area	Planning Survey Requirement[9]	Info in HCP
☒ Grasslands, oak savannah, agriculture, or ruderal	☐ San Joaquin kit fox	Assumed if within modeled range of species	If within modeled range of species, identify and map potential breeding or denning habitat within the project site and a 250-ft radius around the project footprint.	pp. 6-37 to 6-38
	☒ Western burrowing owl	Assumed	Identify and map potential breeding habitat within the project site and a 500-ft radius around the project footprint. Please note the HCP requires buffers for occupied burrows. Surveys may need to encompass an area larger than the project footprint.	pp. 6-39 to 6-41
☒ Aquatic (ponds, wetlands, streams, sloughs, channels, and marshes)	☐ Giant garter snake	Aquatic habitat accessible from the San Joaquin River	Identify and map potential habitat.	pp. 6-43 to 6-45
	☐ California tiger salamander	Ponds and wetlands Vernal pools Reservoirs Small lakes	Identify and map potential breeding habitat. Document habitat quality and features. Provide the Conservancy with photo-documentation and report.	pp. 6-45

[8] The USACE Sacramento District issued a Regional General Permit 1 (RGP) related to ECCC HCP/NCCP covered activities. The RGP is designed to streamline wetland permitting in the entire ECCC HCP/NCCP Plan Area by coordinating the avoidance, minimization, and mitigation measures in the Plan with the Corps' wetland permitting requirement. Applicants seeking authorization under this RGP shall notify the Corps in accordance with RGP general condition number 18 (Notification).

[9] The planning survey requirements in this table are not comprehensive. Please refer to Chapter 6.4.3 in the ECCC HCP/NCCP for more detail.

	☒ California red-legged frog	Slow-moving streams, ponds and wetlands	Identify and map potential breeding habitat. Document habitat quality and features. Provide the Conservancy with photo-documentation and report.	p. 6-46
	☐ Covered shrimp	Seasonal wetlands Vernal pools Sandstone rock outcrops Sandstone depressions	Identify and map potential habitat. Please note the HCP requires a 50 foot non-disturbance buffer from seasonal wetlands that may be occupied by covered shrimp. Surveys may need to encompass an area larger than the project footprint.	pp. 6-46 to 6-48
☒ Any	☐ Townsend's big-eared bat	Rock formations with caves Mines Abandoned buildings outside urban area	Map and document potential breeding or roosting habitat.	pp. 6-36 to 6-37
	☒ Swainson's hawk	Potential nest sites within 1,000 feet of project	Inspect large trees for presence of nest sites. Document and map.	pp. 6-41 to 6-43
	☒ Golden Eagle	Potential nest sites with ½ mile of project	Inspect large trees for presence of nest sites. Document and map.	pp. 6-38 to 6-39

Surveys for all covered species must be conducted by a qualified biologist (USFWS/CDFW project-specific approved). Please submit biologist approval request to the East Contra Costa County Habitat Conservancy.
Surveys for all covered species must be conducted according to the respective USFWS or CDFW survey protocols, as identified in Chapter 6.4.3 in the HCP/NCCP.

7) Planning Survey Species Habitat Maps

*Provide Planning Survey Species Habitat Maps as required in Table 2a, attach as **Figure 5** in **Attachment B: Figures**.*

8) Results of Species Specific Surveys

Provide a written summary describing the results of the planning surveys. Please discuss the location, quantity, and quality of suitable habitat for specified covered wildlife species on the project site.

Survey Methods

An initial reconnaissance-level survey was performed by biologist Michael Wood on May 12, 2015. The study area initially encompassed a section of Marsh Creek from just upstream of the confluence of Deer Creek and Sand Creek, extending downstream approximately 1,220 m (4,000 ft) to the Union Pacific Railroad crossing, and from the top of the left (western) bank to approximately 732 m (2,400 ft) beyond the top of the right (eastern) bank (see Figures 1 and 3).

The study area was subsequently expanded upstream to the Dainty Avenue Bridge over Marsh Creek, extending the Project another 503 m (1,650 ft). A second survey of the expanded area was performed by biologists Mr. Wood and Isabelle de Geofroy on November 17, 2015. During both surveys, all habitat types at and adjacent to the study area were surveyed and classified, and plant and animal species observed were recorded.

As the proposed Project limits expanded further, a third survey was warranted. This site reconnaissance was performed by Mr. Wood on July 22, 2016, focusing on the section of Marsh Creek upstream of Dainty Avenue and the bio-system detention swale beyond the left bank of the Lower Reach of the Project. Finally, to address the addition of the Hancock parcel as a soil disposal site, a fourth reconnaissance survey was performed by Mr. Wood on July 24, 2017.

Focused wildlife surveys were not performed as part of this analysis. However, the timing of the May 2015 survey corresponded with the spring flowering season for special-status plant species.

Survey Results and Discussion

No plant species listed in the HCP/NCCP as "covered" or "no-take" have been detected within the study area and none is expected to occur due to a lack of suitable habitat or substrate, geographic isolation from known populations, or the fact that they would have been detectable during the surveys performed.

Two animal species listed in the HCP/NCCP as "covered" were detected within the study area. Resident burrowing owls and a single foraging Swainson's hawk were recorded during the May 2015 survey.

No other "covered" or "no-take" animal species have been detected within the study area. However, due to the presence of suitable or marginally suitable habitat, the presence of seven species cannot be ruled out; these species are discussed below. A detailed evaluation of all special-status animal species known from the Project region is presented in the Biological Resource Assessment (Wood Biological Consulting, Inc., 2017), included as Attachment F of this submittal.

California Red-legged Frog (CRF). The section of Marsh Creek at the Project site is not mapped as potential CRF breeding habitat but is mapped as potential migration and aestivation habitat, as modelled in the HCP/NCCP (see Attachment B, Figure 5a). The nearest record for CRF (Occurrence # 933) consists of a 2005 report from Sand Creek, east of Deer Valley Road, approximately 5.7 km (3.5 mi) west of the Project site (CNDDB, 2017). No suitable breeding habitat for CRF is present on site or in the Project vicinity. Due to the presence of aquatic habitat on site and a lack of significant barriers to movement between the Project site and potential source populations, the potential occurrence of CRF cannot be ruled out. If present at the time of construction, take of the species could occur. The CRF is listed under the HCP/NCCP as a "covered" species.

Swainson's Hawk. The Project site is not mapped as providing potential breeding or suitable foraging habitat for the species, as modeled in the HCP/NCCP and there is no suitable nesting habitat within the Project site (see Attachment B, Figure 5b). There are 11 records for nesting Swainson's hawk within an 8 km (5 mi) radius of the Project site (CNDDB, 2017). The nearest record for CRF (Occurrence # 933) consists of a 2005 report from Sand Creek, east of Deer Valley Road, approximately 5.7 km (3.5 mi) west of the Project site. One record (Occurrence #1911) consists of a non-specific report from the Project area made in 1921. The nearest contemporary record (Occurrence #1712) consists of a 2006 report at the intersection of Grant Street and Lone Oak Road approximately 1.4 km (0.9 mi) north-northeast of the Project site. Suitable nesting habitat in the form of tall eucalyptus trees is present in the Project vicinity. A single Swainson's hawk was observed foraging and perching on site over the course of the 2015 survey. There is a potential for nesting Swainson's hawks within 1000 feet of the Project site. The Swainson's hawk is listed under the HCP/NCCP as a "covered" species.

Golden Eagle. The Project site is mapped as providing suitable habitat for the species, as modeled in the HCP/NCCP (see Attachment B, Figure 5c). There are no records for nesting golden eagle within 4.8 km (3 mi) of the Project site (CNDDB). The nearest record (Occurrence #145 consists of a 1995 report southwest of the intersection of Walnut Boulevard and Camino Diablo Road approximately 6.7 km (4.2 mi) south of the Project site. Only marginally suitable nest trees are present for the golden eagle in the Project vicinity. However, the potential for occurrence of nesting golden eagles within 0.5 miles of the Project site cannot be ruled out. The golden eagle is listed under the HCP/NCCP as a "no-take" species.

Western Burrowing Owl. The Project site is mapped as providing suitable habitat and suitable low-use habitat for the species, as modeled in the HCP/NCCP (see Attachment B, Figure 5d). Two adult burrowing owls and one juvenile were observed along the eastern boundary of the proposed area of impact during the May 2015 reconnaissance survey (see Attachment F – Biological Resource Assessment [Appendix D]). However, no burrowing owls were observed during each of the subsequent surveys.

There are 31 records for burrowing owl within 4.8 km (3 mi) of the Project site. The nearest record (Occurrence #707) consists of a 2012 report from along the Union Pacific Railroad embankment approximately 200 m (656 ft) north of the pedestrian bridge at the downstream end of the Project site. Suitable breeding habitat is present in the grasslands on site as well as on the banks of the tributary to Marsh Creek (see Appendix B, Figure 5e). Although no burrowing owls or their sign were observed, the presence of fossorial mammals in these areas indicates that suitable nesting habitat is present on site and nearby. The western burrowing owl is listed under the HCP/NCCP as a "covered" species.

Western Pond Turtle. The Project site is mapped as providing suitable core habitat and movement habitat for the species, as modeled in the HCP/NCCP (see Attachment B, Figure 5f). There are no records of western pond turtle occurring from within 4.8 km (3 mi) of the Project site. The nearest record (Occurrence #131) consists of a 1993 report two adults observed at Marsh Creek Reservoir, approximately 5.5 km (3.4 mi) south-southwest

of the Project site. Although not detected during any of the Project surveys, the reach of Marsh Creek in which the Project is located provide both suitable breeding habitat and a movement corridor for the species. If present, construction activities could result in direct mortalities. In the long-term, however, Project implementation would increase suitable habitat for the species. The western pond turtle is listed under the HCP/NCCP as a "covered" species.

White-tailed Kite. Although not detected during any of the Project surveys, suitable habitat for nesting by white-tailed kite is present in the immediate vicinity of the Project. There are three records (Occurrence #76, 87, and 113) for nesting white-tailed kite from 4.8-5 km (3-5 mi) from the Project site, but none closer than 4.8 km (3 mi). The white-tailed kite is listed under the HCP/NCCP as a "no-take" species.

Silvery Legless Lizard. The Project site is not mapped as providing suitable habitat for the species, as modeled in the HCP/NCCP (see Attachment B, Figure 5g). The nearest record (Occurrence #10) consists of a collection made in the project vicinity in the 1920s. The nearest contemporary records (Occurrence #8 and #9) consist of 2005 reports from Oakley approximately 5.9 km (3.7 mi) north-northeast of the Project site. The loose loamy soils found at the Hancock parcel are marginally suitable for the SLL, and the subspecies is well documented in the Oakley and Brentwood region. Although the site has been heavily disturbed by human activities associated with flood control, agriculture, and development, the potential for occurrence of SLL cannot be ruled out. The SLL is listed under the HCP/NCCP as a "covered" species.

9) Covered and No-Take Plants

Please check the applicable boxes in Table 2b based on the land cover types found in the project area. If suitable land cover types are present on site, surveys must be conducted using approved CDFW/USFWS methods during the appropriate season for identification of covered and no-take species (see page 6-9 of the ECCC HCP/NCCP). Reference populations of covered and no-take plants should be visited, where possible, prior to conducting surveys to confirm that the plant species is visible and detectable at the time surveys are conducted. In order to complete all the necessary covered and no-take plant surveys, spring, summer, and fall surveys may be required.

Table 2b. Covered and No-Take Plant Species

Plant Species	Covered (C) or No-Take (N)	Associated Land Cover Type	Typical Habitat or Physical Conditions, if Known	Typical Blooming Period	Suitable Land Cover Type Present
Adobe navarretia (*Navarretia nigelliformis* ssp. *radians*) [a]	C	Annual Grassland	Generally found on clay barrens in Annual Grassland [b]	Apr–Jun	☐ Yes ☒ No
Alkali milkvetch (*Astragalus tener* ssp. *tener*)	N	Alkali grassland Alkali wetland Annual grassland Seasonal wetland	Generally found in vernally moist habitat in soils with a slight to strongly elevated pH	Mar–Jun	☐ Yes ☒ No
Big tarplant (*Blepharizonia plumosa*)	C	Annual grassland	Elevation below 1500 feet [d] most often on Altamont Series or Complex soils	Jul–Oct	☐ Yes ☒ No
Brewer's dwarf flax (*Hesperolinon breweri*)	C	Annual grassland Chaparral and scrub Oak savanna Oak woodland	Generally, restricted to grassland areas within a 500+ buffer from oak woodland and/or chaparral/scrub [d]	May–Jul	☐ Yes ☒ No
Brittlescale (*Atriplex depressa*)	C	Alkali grassland Alkali wetland	Restricted to soils of the Pescadero or Solano soil series; generally found in southeastern region of plan area [d]	May–Oct	☐ Yes ☒ No
Caper-fruited tropidocarpum (*Tropidocarpum capparideum)*	N	Alkali grassland		Mar–Apr	☐ Yes ☒ No
Contra Costa goldfields (*Lasthenia conjugens*)	N	Alkali grassland Alkali wetland Annual grassland Seasonal wetland	Generally found in vernal pools	Mar–Jun	☐ Yes ☒ No
Diablo Helianthella (*Helianthella castanea*)	C	Chaparral and scrub Oak savanna Oak woodland	Elevations generally above 650 feet [d]	Mar–Jun	☐ Yes ☒ No
Diamond-petaled poppy (*Eschscholzia rhombipetala*)	N	Annual grassland		Mar–Apr	☐ Yes ☒ No

Large-flowered fiddleneck (*Amsinckia grandiflora*)	N	Annual grassland	Generally on clay soil	Apr–May	☐ Yes ☒ No
Mount Diablo buckwheat (*Eriogonum truncatum*)	N	Annual grassland Chaparral and scrub	Ecotone of grassland and chaparral/scrub	Apr–Sep	☐ Yes ☒ No
Mount Diablo fairy-lantern (*Calochortus pulchellus*)	C	Annual grassland Chaparral and scrub Oak savanna Oak woodland	Elevations generally between 650 and 2,600[d]	Apr–Jun	☐ Yes ☒ No
Mount Diablo Manzanita (*Arctostaphylos auriculata*)	C	Chaparral and scrub	Elevations generally between 700 and 1,860 feet; restricted to the eastern and northern flanks of Mt. Diablo [d] and the vicinity of Black Diamond Mines	Jan–Mar	☐ Yes ☒ No
Recurved larkspur (*Delphinium recurvatum*)	C	Alkali grassland Alkali wetland		Mar–Jun	☐ Yes ☒ No
Round-leaved filaree (*California macrophylla*) [c]	C	Annual grassland		Mar–May	☐ Yes ☒ No
San Joaquin spearscale (*Extriplex joaquiniana*) [e]	C	Alkali grassland Alkali wetland		Apr–Oct	☐ Yes ☒ No
Showy madia (*Madia radiata*)	C	Annual grassland Oak savanna Oak woodland	Primarily occupies open grassland or grassland on edge of oak woodland	Mar–May	☐ Yes ☒ No

[a] The species *Navarretia nigelliformis* subsp. *nigelliformis* is no longer considered to occur within Contra Costa County based on specimen annotations at the UC and Jepson Herbaria at the University of California Berkeley as well as the opinions of experts in the genus. This taxon is now recognized as *Navarretia nigelliformis* subsp. *radians.* Any subspecies of *Navarretia nigelliformis* encountered as a part of botanical surveys in support of a PSR should be considered as covered under this HCP/NCCP.

[b] Habitat for the *Navarretia nigelliformis* subspecies that occurs within the inventory are is inaccurately described in the HCP/NCCP as vernal pools. The entity within the Inventory generally occupies clay barrens within Annual Grassland habitat, which is an upland habitat type.

[c] From California Native Plant Society. 2007. *Inventory of Rare and Endangered Plants* (online edition, v7-07d). Sacramento, CA. Species may be identifiable outside of the typical blooming period; a professional botanist shall determine if a covered or no take plant occurs on the project site. Reference population of covered and no-take plants should be visited, where possible, prior to conducting surveys to confirm that the plant is visible and detectable at the time surveys are conducted.

[d] See Species Profiles in Appendix D of the Final HCP/NCCP. Reference populations of covered and no-take plants should be visited, where possible, prior to conducting surveys to confirm that the plant species is visible and detectable at the time surveys are conducted.

[e] In the recent update to the Jepson eflora (JFP 2013) *Atriplex joaquinana* has been circumscribed and segregated into a new genus called *Extriplex* based on the work of Elizabeth Zacharias and Bruce Baldwin (2010). The etymology of the genus *Extriplex* means, "beyond or outside Atriplex".

10) Results of Covered and No-Take Plant Species

Provide a written summary describing the results of the planning surveys conducted as required in Table 2b. Describe the methods used to survey the site for all covered and no-take plants, including the dates and times of all surveys conducted (see Tables 3-8 and 6-5 of the ECCC HCP/NCCP for covered and no-take plants), including reference populations visited prior to conducting surveys.

If any covered or no-take plant species were found, include the following information in the results summary:

- *Description and number of occurrences and their rough population size.*
- *Description of the "health" of each occurrence, as defined on pages 5-49 and 5-50 of the HCP/NCCP.*
- *A map of all the occurrences.*
- *Justification of surveying time window, if outside of the plant's blooming period.*
- *The CNDDB form(s) submitted to CDFW (if this is a new occurrence).*
- *A description of the anticipated impacts that the covered activity will have on the occurrence and how the project will avoid impacts to all covered and no-take plant species. If impacts to covered plant species cannot be avoided and plants will be removed by covered activity, the Conservancy must be notified and has the option to salvage the covered plants. All projects must demonstrate avoidance of all six no-take plants (see table 6-5 of the HCP/NCCP).*

Based on an assessment of existing habitats, soils, and history of disturbance, no covered or no-take plant species are considered to have any potential for occurrence within the impact area of the proposed Project (please refer to the Biological Resource Assessment [Wood Biological Consulting, Inc., 2017], included as Attachment F of this submittal.

IV. SPECIES-SPECIFIC AVOIDANCE AND MINIMIZATION REQUIREMENTS

Please complete and/or provide the following attachments:

1) **Species-Specific Avoidance and Minimization for Selected Covered Wildlife**
Complete the following table and check the applicable box for covered species determined by the planning surveys.

Table 3. Summary of Applicable Preconstruction Surveys, Avoidance and Minimization, and Construction Monitoring Requirements[10]

Species	Preconstruction Survey Requirements	Avoidance and Minimization Requirements	Construction Monitoring Required	Info in HCP
☐ San Joaquin kit fox	• On project footprint and 250-ft radius, map all dens (>5 in. diameter) and determine status • Provide written survey results to USFWS within 5 working days after surveying	• Monitor dens • Destroy unoccupied dens • Discourage use of occupied (non-natal) dens	• Establish exclusion zones (>50 ft for potential dens, and >100 ft for known dens) • Notify USFWS of occupied natal dens	pp. 6-37 to 6-38
☒ Western burrowing owl	• On project footprint and 500-ft radius, identify and map all owls and burrows, and determine status • Document use of habitat (e.g. breeding, foraging)	• Avoid occupied nests during breeding season (Feb-Sep) • Avoid occupied burrows during nonbreeding season (Sep – Feb) • Install one-way doors in occupied burrow (if avoidance not possible) • Monitor burrows with doors installed	• Establish buffer zones (250 ft around nests) • Establish buffer zones (160 ft around burrows)	pp. 6-39 to 6-41
☐ Giant garter snake	• Delineate aquatic habitat up to 200 ft from water's edge on each side • Document any occurrences	• Limit construction to Oct-May • Dewater habitat April 15 – Sep 30 prior to construction • Minimize clearing for construction	• Delineate 200 ft buffer around potential habitat near construction • Provide field report on monitoring efforts • Stop construction activities if snake is encountered; allow snake to passively relocate • Remove temporary fill or debris from construction site • Mandatory training for construction personnel	pp. 6-43 to 6-45
☐ California tiger salamander	• Provide written notification to USFWS and CDFW regarding timing of construction and likelihood of occurrence on site	• Allow agency staff to translocate species, if requested	• None	p. 6-45
☒ California red-legged frog	• Provide written notification to USFWS and CDFW regarding timing of construction and likelihood of occurrence on site	• Allow agency staff to translocate species, if requested	• None	p. 6-46
☐ Covered shrimp	• Establish presence/absence • Document and evaluate use of all habitat features (e.g. vernal pools, rock outcrops)	• Establish buffer near construction activities • Prohibit incompatible activities	• Establish buffer around outer edge of all hydric vegetation associated with habitat (50 ft or immediate watershed, whichever is larger) • Mandatory training for construction personnel	pp. 6-46 to 6-48
☐ Townsend's big-eared bat	• Establish presence/absence • Determine if potential sites were recently occupied (guano)	• Seal hibernacula before Nov • Seal nursery sites before April • Delay construction near occupied sites until hibernation or nursery seasons are over	• None	pp. 6-36 to 6-37
☒ Swainson's hawk	• Determine whether potential nests are occupied	• No construction within 1,000 ft of occupied nests within breeding season (March 15 - Sep 15) • If necessary, remove active nest tree after nesting season to prevent occupancy in second year.	• Establish 1,000 ft buffer around active nest and monitor compliance (no activity within established buffer)	pp. 6-41 to 6-43
☒ Golden Eagle	• Establish presence/absence of nesting eagles	• No construction within ½ mile near active nests (most activity late Jan – Aug)	• Establish ½ mile buffer around active nest and monitor compliance with buffer	pp. 6-38 to 6-39

[10] The requirements in this table are not comprehensive; they are detailed in the next section on the following page.

2) Required Preconstruction Surveys, Avoidance and Minimization, and Construction Monitoring

All preconstruction surveys shall be conducted in accordance with the requirements set forth in Section 6.4.3, Species-Level Measures, and Table 6-1 of the ECCC HCP/NCCP. Detailed descriptions of preconstruction surveys, avoidance and minimization, and construction monitoring applicable to each of the wildlife species in Table 3 are located below. Please remove the species-specific measures that do not apply to your project (highlight entire section and delete).

WESTERN BURROWING OWL

Preconstruction Surveys

Prior to any ground disturbance related to covered activities, a USFWS/CDFW- approved biologist will conduct a preconstruction survey in areas identified in the planning surveys as having potential burrowing owl habitat. The surveys will establish the presence or absence of western burrowing owl and/or habitat features and evaluate use by owls in accordance with CDFW survey guidelines (California Department of Fish and Game 1995).

On the parcel where the activity is proposed, the biologist will survey the proposed disturbance footprint and a 500-foot radius from the perimeter of the proposed footprint to identify burrows and owls. Adjacent parcels under different land ownership will not be surveyed. Surveys should take place near sunrise or sunset in accordance with CDFW guidelines. All burrows or burrowing owls will be identified and mapped. Surveys will take place no more than 30 days prior to construction. During the breeding season (February 1– August 31), surveys will document whether burrowing owls are nesting in or directly adjacent to disturbance areas. During the nonbreeding season (September 1–January 31), surveys will document whether burrowing owls are using habitat in or directly adjacent to any disturbance area. Survey results will be valid only for the season (breeding or nonbreeding) during which the survey is conducted.

Avoidance and Minimization and Construction Monitoring

This measure incorporates avoidance and minimization guidelines from CDFW's *Staff Report on Burrowing Owl Mitigation* (California Department of Fish and Game 1995).

If burrowing owls are found during the breeding season (February 1 – August 31), the Project proponent will avoid all nest sites that could be disturbed by Project construction during the remainder of the breeding season or while the nest is occupied by adults or young. Avoidance will include establishment of a non-disturbance buffer zone (described below). Construction may occur during the breeding season if a qualified biologist monitors the nest and determines that the birds have not begun egg-laying and incubation or that the juveniles from the occupied burrows have fledged. During the nonbreeding season (September 1 – January 31), the Project proponent should avoid the owls and the burrows they are using, if possible. Avoidance will include the establishment of a buffer zone (described below).

During the breeding season, buffer zones of at least 250 feet in which no construction activities can occur will be established around each occupied burrow (nest site). Buffer zones of 160 feet will be established around each burrow being used during the nonbreeding season. The buffers will be delineated by highly visible, temporary construction fencing.

If occupied burrows for burrowing owls are not avoided, passive relocation will be implemented. Owls should be excluded from burrows in the immediate impact zone and within a 160-foot buffer zone by installing one-way doors in burrow entrances. These doors should be in place for 48 hours prior to excavation. The Project area should be monitored daily for 1 week to confirm that the owl has abandoned the burrow. Whenever possible, burrows should be excavated using hand tools and refilled to prevent reoccupation (California Department of Fish and Game 1995). Plastic tubing or a similar structure should be inserted in the tunnels during excavation to maintain an escape route for any owls inside the burrow.

CALIFORNIA RED-LEGGED FROG

Minimization

Written notification to USFWS, CDFW, and the Implementing Entity, including photos and habitat assessment, is required prior to disturbance of any suitable breeding habitat. The Project proponent will also notify these parties of the approximate date of removal of the breeding habitat at least 30 days prior to this removal to allow USFWS or CDFW staff to translocate individuals, if requested. USFWS or CDFW must notify the Project proponent of their intent to translocate California red-legged frog within 14 days of receiving notice from the Project proponent. The applicant must allow USFWS or CDFW access to the site prior to construction if they request it.

There are no restrictions under this Plan on the nature of the disturbance or the date of the disturbance unless CDFW or USFWS notify the Project proponent of their intent to translocate individuals within the required time period. In this case, the Project proponent must coordinate the timing of disturbance of the breeding habitat to allow USFWS or CDFW to translocate the individuals. USFWS and CDFW shall be allowed 45 days to translocate individuals from the date the first written notification was submitted by the Project proponent (or a longer period agreed to by the Project proponent, USFWS, and CDFW).

SWAINSON'S HAWK

Preconstruction Survey

Prior to any ground disturbance related to covered activities that occurs during the nesting season (March 15–September 15), a qualified biologist will conduct a preconstruction survey no more than 1 month prior to construction to establish whether Swainson's hawk nests within 1,000 feet of the Project site are occupied. If potentially occupied nests within 1,000 feet are off the Project site, then their occupancy will be determined by observation from public roads or by observations of Swainson's hawk activity (e.g., foraging) near the Project site. If nests are occupied, minimization measures and construction monitoring are required (see below).

Avoidance and Minimization and Construction Monitoring

During the nesting season (March 15–September 15), covered activities within 1,000 feet of occupied nests or nests under construction will be prohibited to prevent nest abandonment. If site-specific conditions or the nature of the covered activity (e.g., steep topography, dense vegetation, limited activities) indicate that a smaller buffer could be used, the Implementing Entity will coordinate with CDFW/USFWS to determine the appropriate buffer size.

If young fledge prior to September 15, covered activities can proceed normally. If the active nest site is shielded from view and noise from the Project site by other development, topography, or other features, the Project applicant can apply to the Implementing Entity for a waiver of this avoidance measure. Any waiver must also be approved by USFWS and CDFW. While the nest is occupied, activities outside the buffer can take place.

All active nest trees will be preserved on site, if feasible. Nest trees, including non-native trees, lost to covered activities will be mitigated by the Project proponent according to the requirements below.

Mitigation for Loss of Nest Trees

The loss of non-riparian Swainson's hawk nest trees will be mitigated by the Project proponent by:

- If feasible on-site, planting 15 saplings for every tree lost with the objective of having at least 5 mature trees established for every tree lost according to the requirements listed below.

  AND either

  1) Pay the Implementing Entity an additional fee to purchase, plant, maintain, and monitor 15 saplings on the HCP/NCCP Preserve System for every tree lost according to the requirements listed below, OR

  2) The Project proponent will plant, maintain, and monitor 15 saplings for every tree lost at a site to be approved by the Implementing Entity (e.g., within an HCP/NCCP Preserve or existing open space linked to HCP/NCCP preserves), according to the requirements listed below.

The following requirements will be met for all planting options:

- Tree survival shall be monitored at least annually for 5 years, then every other year until year 12. All trees lost during the first 5 years will be replaced. Success will be reached at the end of 12 years if at least 5 trees per tree lost survive without supplemental irrigation or protection from herbivory. Trees must also survive for at least three years without irrigation.
- Irrigation and fencing to protect from deer and other herbivores may be needed for the first several years to ensure maximum tree survival.
- Native trees suitable for this site should be planted. When site conditions permit, a variety of native trees will be planted for each tree lost to provide trees with different growth rates, maturation, and life span, and to provide a variety of tree canopy structures for Swainson's hawk. This variety will help to ensure that nest trees will be available in the short term (5-10 years for cottonwoods and willows) and in the long term (e.g., Valley oak, sycamore). This will also minimize the temporal loss of nest trees.
- Riparian woodland restoration conducted as a result of covered activities (i.e., loss of riparian woodland) can be used to offset the nest tree planting requirement above, if the nest trees are riparian species.
- Whenever feasible and when site conditions permit, trees should be planted in clumps together or with existing trees to provide larger areas of suitable nesting habitat and to create a natural buffer between nest trees and adjacent development (if plantings occur on the development site).
- Whenever feasible, plantings on the site should occur closest to suitable foraging habitat outside the UDA.
- Trees planted in the HCP/NCCP preserves or other approved offsite location will occur within the known range of Swainson's hawk in the inventory area and as close as possible to high-quality foraging habitat.

GOLDEN EAGLE

Preconstruction Survey

Prior to implementation of covered activities, a qualified biologist will conduct a preconstruction survey to establish whether nests of golden eagles are occupied (see Section 6.3.1, *Planning Surveys*). If nests are occupied, minimization requirements and construction monitoring will be required.

Avoidance and Minimization

Covered activities will be prohibited within 0.5 mile of active nests. Nests can be built and active at almost any time of the year, although mating and egg incubation occurs late January through August, with peak activity in March through July. If site-specific conditions or the nature of the covered activity (e.g., steep topography, dense vegetation, limited activities) indicate that a smaller buffer could be appropriate or that a larger buffer should be implemented, the Implementing Entity will coordinate with CDFW/USFWS to determine the appropriate buffer size.

Construction Monitoring

Construction monitoring will focus on ensuring that no covered activities occur within the buffer zone established around an active nest. Although no known golden eagle nest sites occur within or near the ULL, covered activities inside and outside of the Preserve System have the potential to disturb golden eagle nest sites. Construction monitoring will ensure that direct effects to golden eagles are minimized.

☒ Check box to acknowledge this requirement.

V. SPECIFIC CONDITIONS ON COVERED ACTIVITIES

1) Check off the HCP conservation measures that apply to the project.

APPLIES TO ALL PROJECTS

☒ **Conservation Measure 1.11. Avoid Direct Impacts on Extremely Rare Plants, Fully Protected Wildlife Species, or Migratory Birds.** This conservation measure applies to all projects. All projects will avoid all impacts on extremely rare plants and fully protected species listed in Table 6-5 of the ECCC HCP/NCCP. See HCP pp. 6-23 to 6-25, and Table 6-5.

APPLIES TO PROJECTS THAT IMPACT COVERED PLANT SPECIES

☐ **Conservation Measure 3.10. Plant Salvage when Impacts are Unavoidable.** This condition applies to projects that cannot avoid impacts on covered plants and help protect covered plants by prescribing salvage whenever avoidance of impacts is not feasible. Project proponents wishing to remove populations of covered plants must notify the Conservancy of their construction schedule to allow the Conservancy the option of salvaging the populations. See HCP pp. 6-48 to 6-50.

APPLIES TO PROJECTS THAT INCLUDE ARE ADJACENT TO STREAMS, PONDS, OR WETLANDS

☒ **Conservation Measure 2.12. Wetland, Pond, and Stream Avoidance and Minimization.** All projects will implement measures described in the HCP to avoid and minimize impacts on wetlands, ponds, streams, and riparian woodland/scrub. See HCP pp. 6-33 to 6-35.

APPLIES TO NEW DEVELOPMENT PROJECTS

☐ **Conservation Measure 1.10. Maintain Hydrologic Conditions and Minimize Erosion.** All new development must avoid or minimize direct and indirect impacts on local hydrological conditions and erosion by incorporating the applicable Provision C.3 Amendments of the Contra Costa County Clean Water Program's (CCCCWP's) amended NPDES Permit (order no. R2-2003-0022; permit no. CAS002912). The overall goal of this measure is to ensure that new development covered under the HCP has no or minimal adverse effects on downstream fisheries to avoid take of fish listed under ESA or CESA. See HCP pp. 6-21 to 6-22.

APPLIES TO NEW DEVELOPMENT PROJECTS THAT INCLUDE OR ARE ADJACENT TO STREAMS, PONDS, OR WETLANDS

☒ **Conservation Measure 1.7. Establish Stream Setbacks.** A stream setback will be applied to all development projects covered by the HCP according to the stream types listed in Table 6-2 of the HCP. See HCP pp. 6-15 to 6-18 and Table 6-2.

APPLIES TO NEW DEVELOPMENT PROJECTS ADJACENT TO EXISTING PUBLIC OPEN SPACE, HCP PRESERVES, OR LIKELY HCP ACQUISITION SITES

☐ **Conservation Measure 1.6. Minimize Development Footprint Adjacent to Open Space.** Project applicants are encouraged to minimize their development footprint and set aside portions of their land to contribute to the HCP Preserve System. Land set aside that contributes to the HCP biological goals and objectives may be credited against development fees. See HCP pages 6-14 to 6-15.

☐ **Conservation Measure 1.8. Establish Fuel Management Buffer to Protect Preserves and Property.** Buffer zones will provide a buffer between development and wildlands that allows adequate fuel management to minimize the risk of wildlife damage to property or to the preserve. The minimum buffer zone for new development is 100 feet. See HCP pages 6-18 to 6-19.

☐ **Conservation Measure 1.9. Incorporate Urban-Wildlife Interface Design Elements.** These projects will incorporate design elements at the urban-wildlife interface to minimize the indirect impacts of development on the adjacent preserve. See HCP pp. 6-20 to 6-21.

APPLIES TO ROAD MAINTENANCE PROJECTS OUTSIDE THE UDA

☐ **Conservation Measure 1.12. Implement Best Management Practices for Rural Road Maintenance.** Road maintenance activities have the potential to affect covered species by introducing sediment and other pollutants into downstream waterways, spreading invasive weeds, and disturbing breeding wildlife. In order to avoid and minimize these impacts, BMPs described in the HCP will be used where appropriate and feasible. See HCP pp. 6-25 to 6-26.

APPLIES TO NEW ROADS OR ROAD IMPROVEMENTS OUTSIDE THE UDA

☐ **Conservation Measure 1.14. Design Requirements for Covered Roads Outside the Urban Development Area (UDA).** New roads or road improvements outside the UDA have impacts on many covered species far beyond the direct impacts of their project footprints. To minimize the impacts of new, expanded, and improved roads in agricultural and natural areas of the inventory area, road and bridge construction projects will adopt siting, design, and construction requirements described in the HCP and listed in Table 6-6. See HCP pp. 6-27 to 6-33 and Table 6-6.

APPLIES TO FLOOD CONTROL MAINTENANCE ACTIVITIES

☐ **Conservation Measure 1.13. Implement Best Management Practices for Flood Control Facility Maintenance.** Flood control maintenance activities have the potential to affect covered species by introducing sediment and other pollutants into downstream waterways and disturbing breeding wildlife. In order to avoid and minimize these impacts, BMPs described in the HCP will be used where appropriate and feasible. See HCP pp. 6-26 to 6-27.

1) **For all checked conservation measures, describe how the project will comply with each measure. Attach as Attachment C: Project Compliance to HCP Conditions.**

See Attachment C.

VI. MITIGATION MEASURES

1) **Mitigation Fee Calculator(s)**
Complete and attach the fee calculator (use permanent and/or temporary impact fee calculator as appropriate), and attach as ***Attachment D: Fee Calculator(s)****.*

2) **Briefly describe the amount of fees to be paid <u>and</u> when applicant plans to submit payment.**

The Project site is located in Development Fee Zone 1 – Cultivated and Disturbed Lands. Lands within this zone are dominated by cultivated agriculture and undeveloped urban areas. Habitat values are typically lower in this zone than in natural land cover types (see Attachment B, Figure 3-1).

Construction of the Project will result in a total area of **1.262** acres of **permanent impacts** to natural land cover types. This includes permanent impacts to ruderal habitat (1.262 acres) resulting from new bridge footings, pervious and impervious paving of a pathway beneath the Central Avenue Bridge, rock slope protection and a riprap trench, and paved Class I trail relocated to areas currently mapped as ruderal. The permanent impact fee would be $19,362.71. However, the Project is a restoration project that will convert some ruderal habitat and existing urban features to grassland and riparian habitat on the Project site, and the channel will remain an open water course and no barriers to the movement of fish or other aquatic organisms will result. Therefore, the Project's permanent impacts are not subject to HCP/NCCP permanent impact fees as determined in coordination with the Conservancy. In addition, the Contra Costa County Flood Control & Water Conservation District, a co-permittee of the ECCC HCP/NCCP, and the Conservancy, a joint sponsor of the Three Creeks Parkway Restoration Project, are working together to explore options to incorporate the restoration site into the ECCC HCP/NCCP Preserve System at a future date (via a conservation easement or by some other permanent dedication to the Preserve System that is approved by CDFW and USFWS).

Construction of the Project will result in a total area of **temporary impacts** to natural land cover types of **14.278 acres**. This includes temporary impacts to slough/channel land cover type (0.057 acre) resulting from grading and temporary dewatering for temporary creek crossings, and to ruderal habitat (14.221 acres) resulting from grading, staging areas and temporary spoils disposal. The temporary impact fee would be $14,604.38. However, as noted above, because the Project is a restoration project that will convert some ruderal habitat and existing urban features to grassland and riparian habitat, the Project's temporary impacts are not subject to HCP/NCCP temporary impact fees. In addition, the Contra Costa County Flood Control & Water Conservation District and the Conservancy are exploring options to incorporate the restoration site into the ECCC HCP/NCCP Preserve System at a future date.

ATTACHMENT D: FEE CALCULATOR(S)

ATTACHMENT A: PROJECT DESCRIPTION

Attachment 1 - Project Description

Introduction

The Three Creeks Parkway Restoration Project (Project) is a multi-benefit flood control and creek restoration project. It proposes to improve flood conveyance capacity and restore ecological function along an approximately 4,000 linear feet section of Marsh Creek located in Brentwood, California by widening the channel with a floodplain bench and planting with native vegetation.

The area within the Project's limit of work is 23.076 acres inclusive of staging areas, access routes, and a potential soil disposal area immediately adjacent to the creek on the west bank (approximately 9 acres). The area is currently 16.581 acres of ruderal land cover, 3.605 acres of urban land cover, and 2.889 acres of slough/channel land cover.

When implementation is complete, the Project site will include 3.369 acres of frequently inundated floodplain/woody riparian vegetation, 2.889 acres of slough/channel, 1.763 acres of grasslands and native scrub, 11.333 acres of ruderal vegetation, and 3.726 acres of concrete, impervious (hot mix) asphalt, riprap, or permeable decomposed granite paving associated with the adjacent East Bay Regional Park District (EBRPD) Marsh Creek Trail and rock slope protection.

Channel Widening

The main function of expanding the channel is to create enough conveyance capacity to allow for the planting of woody riparian vegetation (trees) while also safely conveying large flood flows. The Project would increase the cross-sectional area of the stream channel by excavating 26,000 cubic yards of earth along approximately 4,000 linear feet of both banks of Marsh Creek to create new floodplain.

For the sake of the channel widening discussion, the Project is divided into three reaches:

- Upper Reach which is the upper 1,600 linear-foot section of the creek from near Dainty Avenue Bridge to Deer Creek confluence.
- Middle Reach which is the 800 linear-foot section of the creek between Deer Creek confluence and Sand Creek confluence
- Lower Reach which is the 1,600 linear-foot section of the creek from the Sand Creek confluence (to the pedestrian bridge near the railroad tracks

Table 1 – Channel Widening by Reach

Element	Upper Reach	Middle Reach	Lower Reach
Length	1,600 feet	800 feet	1,600 feet
Soil Excavation	10,500 cu yards	2,500 cu yards	13,000 cu yards
Floodplain or bench width	Avg: 26 ft Max: 56 ft	Avg: 16 ft Max: 22 ft	Avg: 20 ft Max: 38 ft
Bench slopes to top of bank	2:1 or 3:1	2:1 or 3:1	3:1 or less typical, 2:1 max.

Upper Reach

Photo 1: Upper Reach looking upstream (south) with Marsh Creek Regional Trail on left (river right) and Central Blvd on right (river left). Dashed red line indicates estimated OHWM.

The Upper Reach is approximately 1,600 feet of the channel between just north of Dainty Avenue Bridge and the Deer Creek confluence. The reach is constrained by development on both sides and channel widening in this section would include excavation of both banks to construct a number of floodplain benches on both sides of the creek of varying widths (average 26 ft, maximum 56 ft) with slopes ranging from 2:1 to 3:1. The benches would be located above the ordinary high water mark (OHWM). The construction of the floodplain benches would satisfy the Flood Control District's freeboard requirements for an earthen channel. Once the benches are constructed, bio-engineering slope protection such as erosion control matting or other biotechnical methods would be installed on all benches and slopes for slope stabilization and to prevent long-term effects of erosion. The selected erosion control material would provide soil stabilization and promote vegetation growth.

Rough grading and earthmoving activities along the Upper Reach would take place over a period of approximately 2 weeks during the dry season. Construction equipment to be used would include tractors, backhoes, excavators, graders, and dump trucks. Staging for the Upper Reach portion of the Project would be within the Flood Control District-owned parcels or on a City-owned parcel to the east of the creek south of Central Boulevard. Approximately 5,500 cubic yards of soil excavated for channel expansion would require disposal (see Soil Disposal section for further discussion).

Middle Reach

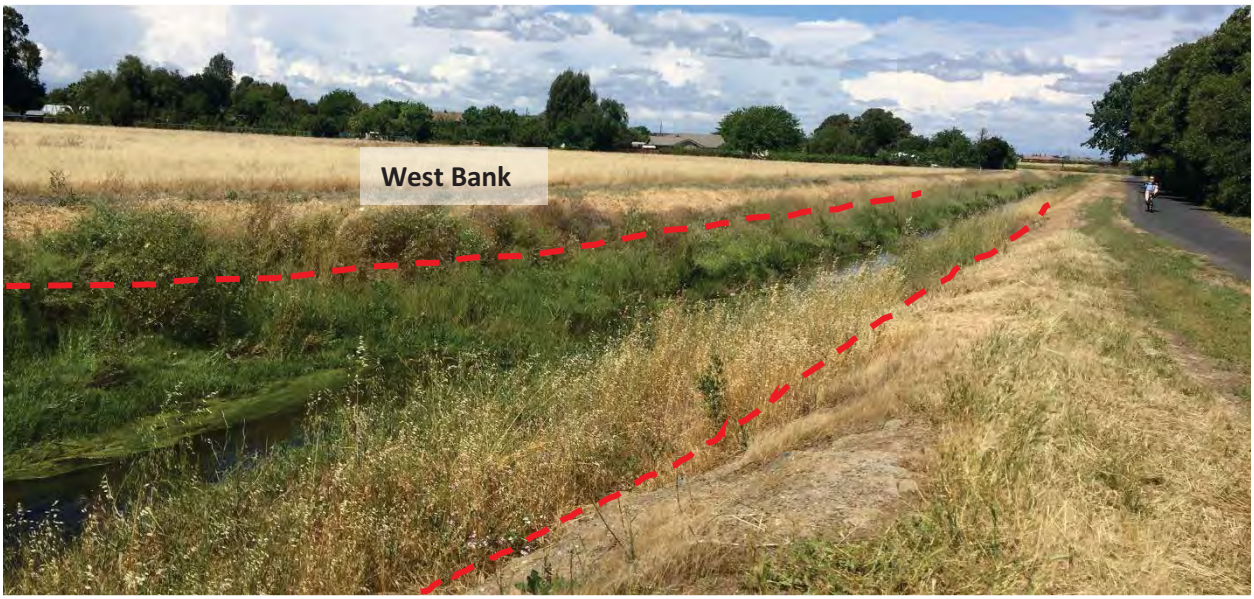


Photo 2: Middle Reach looking downstream (north) with Marsh Creek Regional Trail on right (river right). Dashed red line indicates estimated OHWM.

The Middle Reach, which is about 800 feet in length from the confluence of Marsh Creek and Deer Creek to the confluence of Marsh Creek and Sand Creek, would be widened along the west bank as part of the proposed Project. As the Middle Reach is also constrained, channel widening would involve excavation of both banks to construct a number of floodplain benches of varying widths (average 16 ft, maximum 22 ft) with slopes ranging from 2:1 to 3:1. The benches would be located above the OHWM. The construction of the floodplain benches would satisfy the Flood Control District's freeboard requirements for an earthen channel.

Rough grading and earthmoving activities along the Middle Reach would also take place over a period of approximately 2 weeks during the dry season. Construction equipment to be used would include tractors, backhoes, excavators, graders, and dump trucks. Staging for the Middle Reach portion of the Project would take place on the Flood Control District-owned parcels that contain the Middle Reach of the creek or the adjacent property to the west. Approximately 2,500 cubic yards of spoils excavated for channel expansion would require disposal (see Soil Disposal section for further discussion).

Lower Reach

Photo 3: Lower Reach looking downstream (north) with Marsh Creek Regional Trail on right (river right). Dashed red line indicates estimated OHWM.

The Lower Reach, which is about 1,600 feet in length, is less constrained and more substantial widening of the channel is planned for this area. The Project would excavate the east (right) bank of the creek down to the OHWM to create a new floodplain (average 20 ft, maximum 38 ft) with slopes typically 3:1 or less, but no more than 2:1.

To prevent weathering and erosion of slopes, bio-technical forms of permanent slope would be installed, and the material would provide soil stabilization and promote vegetation growth.

Rough grading of the Lower Reach improvements would take place over a period of approximately 4 weeks during the dry season. Staging for the Lower Reach portion of the Project would take place on the Flood Control District-owned parcels containing the creek or the adjacent vacant private land parcel. Construction equipment to be used would include tractors, backhoes, excavators, graders, and dump trucks. Approximately 13,000 cubic yards of spoils excavated for channel expansion would require disposal (see Soil Disposal section for further discussion).

Project Activities and Impacts

Soil Disposal

The Project sponsors are working with the landowner of the Hancock property adjacent to the west side of the middle reach to accept and store 26,000 cubic yards of excavated materials on approximately 9 acres of the property (ruderal land cover temporary impacts). If that is not possible, excavated materials would be temporarily stored in the staging areas and later removed for use on other nearby land development projects or would be off-hauled to the Dutch Slough project site in Oakley where it would be used as upland fill.

Staging Areas

Staging areas have been identified and detailed in the sections above and total 0.146 acres of temporary impacts to ruderal land cover and 0.4 acres on urban land cover (see Site Overview T-2).

Clearing and Grubbing

Clearing and grubbing will take place throughout the entire project site and results in 16.581 acres of temporary impacts to ruderal land cover and on 3.605 acres of urban land cover.

Low Flow Channel Modification

The existing low-flow channel within the Project limits is engineered with rock grade control structures and banks. The existing, engineered channel has proven stable over the last 50 years and the rock grade control structures create a sequence of pools and riffles that provide some habitat for aquatic species. The excavation for floodplain widening typically will not touch the low-flow channel below the OHWM. The new floodplain would be graded to inundate during the storm events with the low-flow channel continuing to function much as it does today.

Some work in the low-flow channel may be performed. It would include creation of instream habitat in the low-flow channel in the Lower Reach by placing rootwads and rock slope protection in some portions of the low-flow channel in the Upper and Middle Reaches for bank stabilization around critical infrastructure.

Woody debris installation would be in the form of eight rootwads, each roughly 20 feet long. Each rootwad would require the excavation of roughly nine cubic yards of material for a total of 72 cubic yards. Much of this material would be refilled into the rootwad trenches with the remained hauled off site. Installation will be by excavator.

In the event that the Project implements modifications to the low-flow channel and there is water in the channel, the contractor will design, install, and operate either a) a coffer dam/pumping system capable of pumping all flows, both daily and small storm within the creek into a bypass pipe(s) (or fire hose) around the construction work in the low-flow channel and back into the low-flow channel downstream or b) a temporary diversion structure that directs flows to the opposite side of the creek. The cofferdam may not be constructed from soil but may use native gravel materials or other clean materials. Less than one cfs is expected in the channel during construction. This cofferdam, if constructed, would be one of the six temporary land bridges (described below) but the exact location is not yet known and will be determined by the selected construction contractor.

Temporary Land Bridges
The Project will install up to six temporary land bridges across the creek to facilitate construction access between the excavation areas on the east side of the creek and the excavated soils disposal site on the west side of the creek. Four are shown in Figure 2 - Project Plans; one across Marsh Creek near the WQ Basin in the lower reach, and three across Sand, Marsh and Deer creeks to the likely disposal site on the west bank. The crossings will be installed by placing a temporary culvert in the channel and then placing soil fill (from on-site) over the culvert that is wrapped in geotextile fabric. The fabric keeps the fill separated from the creek environment and makes the removal clean and quick, as the material is kept separate from the creek. The culvert length may be as long as 60 ft. Total area is roughly 2,500 square feet (0.057 ac) and each crossing will use approximately 600 cubic yards of material. The culverts will occur below the OHWM but fill is expected to remain mostly above. The crossings will be in place during the grading operations though at least one may remain in place through planting to connect the staging/disposal site on the west side of Marsh Creek with the rest of the Project. The final design will be developed by the contractor.

Rock slope protection/Riprap
The Project also includes modification of grouted rock at the Deer and Sand Creek confluences (Photos 4 and 5, below). Currently, grouted rock extends all the way to the top of the flood control channel. The upper part (above the OHWM) will be removed during grading as part of widening the new floodplain and replaced with new grouted riprap that matches the widened channel. The project will remove 0.137 acres of existing rock slope protection and install 0.395 acres of rock slope protection to accommodate the larger channel.

To protect the banks of the flood control channel, the Project will install 3150 linear feet of riprap buried in a trench along near the toe of the slope break between the floodplain and the flood control channel banks. The footprint of the trench is 0.181 acres and counted as a permanent impact to urban and ruderal land cover. It will be buried beneath the riparian floodplain habitat.

The Project may also install small amounts of riprap (0.003 acres) to protect the footing of the Central Blvd. Bridge (see Trail Extension Below Central Boulevard discussion below) which will impact ruderal land cover.

Photo 4: Marsh Creek and Deer Creek confluence looking west up Deer Creek. Dashed red line indicates estimated OHWM.

Photo 5: Marsh Creek and Sand Creek confluence looking west up Sand Creek. Dashed red line indicates estimated OHWM. The pedestrian bridge shown in the photo is described in its own section below.

Storm Drains

There are fourteen outfalls in the Project area. Six will remain untouched. Three will be removed completely. The Project will modify five existing outfalls by cutting them back to slope. They will be protected with less than one cubic yard of riprap each. If the invert of the stormdrain outfall is below the floodplain, the Project will create a small swale through the floodplain to connect the outfalls to the creek. All work will be above the OHWM. The modification of these five existing outfalls will result in 0.001 acres of permanent impact of ruderal land cover type.

Revegetation
Currently, no trees exist within either the low-flow channel or the larger flood control channel. Some trees do currently exist on the non-creek side of the Marsh Creek Regional Trail in the upper reach. Where possible, these will be protected and retained. Following the construction of channel widening activities, depending on location, the Project area will be planted with wetland plants, grasses, scrub, and trees. Riparian trees would be planted on the upper banks and along the creek side and would include valley oak, sycamore, live oak, box elder, buckeye, cottonwood, and willow. Slopes and banks would be planted with grassland and scrub species, which would include creeping wild rye, California brome, purple needlegrass, dense-flowered lupine, mugwort, common fiddleneck, elegant clarkia, and California poppy. Areas of the floodplain would be planted with seasonal wetland species that will include, but not be limited to, creek clover, Baltic rush, and deer sedge. Planting would occur in November and December and would be accomplished by hand tools and power augers. Specific ways and means will be determined by the selected contractor. The Project is estimated to result in new grassland (1.763 acres) and riparian habitat (3.369 acres).

Trails/Access Roads
As part of the channel widening and reconfiguration of the channel, trail, and maintenance access roads, the Project will demolish 0.63 acres of impervious paving mostly along the right bank of the lower reach (Marsh Creek Regional Trail) and 0.762 acres of pervious paving (maintenance access road) mostly along the left bank by the water quality basin at the downstream end of the project, along the left bank of the middle and upper reaches. To realign the trails and access roads, including around the modified water quality basin, the project will install 0.455 acres of impervious paving (hot asphalt mix or concrete) and 0.639 acres of pervious paving (decomposed granite).

Trail Extension Below Central Boulevard
The Marsh Creek Regional Trail currently crosses the busy Central Blvd. at grade. The Project will extend the trail beneath the Central Blvd. bridge (Photo 6). This trail extension will consist of concrete below the OHWM (to be closed when flooded) (approximately 170 LF, 0.04 AC, 32 CY of concrete and 42 CY of base course). This results in 0.04 acres of permanent impact of ruderal land cover type (already included in the Trails/Access Roads total above). The Project will also install small amounts of riprap to protect the footing of the Central Blvd. Bridge (>200 LF, 0.003 AC). This results in an additional 0.003 acres of permanent impact to what is currently ruderal land cover. An excavator, steamroller, front-end loader, and road paving machine may be used. Equipment to be used will be determined by the contactor.

Photo 6: Area beneath Central Blvd. Bridge where trail extension will go. Note bridge footings that will require riprap protection (impact to ruderal land cover).

Pedestrian Bridge

Contingent on available funding, the Project may install a pedestrian bridge across Marsh Creek just upstream of the confluence with Sand Creek (Sheet L-3.4). The bridge will be 10 feet wide and approximately 100 feet long. The bridge will be a free-spanning bridge. Under the HCP/NCCP, clear span bridges do not amount to any slough/channel impacts. The abutments outside of OHWM total 0.003 acres of impacts to ruderal land cover.

If funding is not available, the Project may install the abutments outside of the OHWM or nothing at all. The bridge and abutments will be included as a bid alternate in the bid package and whether or not it gets built in this phase of construction will be determined after bids are received.

Modification of Water Quality Basin

Photo 7: Water quality basin looking upstream (south) with County Flood Control District maintenance road berm on left between basin and Lower Reach of Marsh Creek.

A water quality basin runs parallel to the Project for approximately 500 feet at the downstream end of the project and modification can improve flood conveyance and allow for increased restoration planting. The water quality basin is intended to treat runoff from 0.78 acres of the adjacent Carmel Estates subdivision and meet C.3 guidelines of the East Contra Costa Municipal Storm Water Permit. The Project will maintain the existing WQ Basin and lower the berm separating the basin from Marsh Creek. Lowering the berm will create 0.483 acres of temporary impacts to ruderal land cover and 0.115 acres of permanent impacts to urban land cover (maintenance road) already detailed in Trails and Access Roads above. This will increase the Marsh Creek floodplain and flow area during larger storm events. The existing function of the WQ basin will be preserved though it would flood more frequently than it currently does. The modification will also require some modifications to the trails adjacent to the basin (see Trails/Access Roads discussion above.

Retaining Wall

In one location along the left bank of the Upper Reach (Photo 1), the Project would require a retaining wall along approximately 280 feet on the left (west) bank due to the presence of Central Boulevard in Brentwood that will extend a maximum of 7 feet above ground. The retaining wall would rise from the back of the floodplain and would not touch the low flow channel. This results in 0.006 acres of permanent impact to ruderal land cover type.

Dainty Pocket Park

At the intersection of Central Boulevard and Dainty Avenue, the Project will construct a pocket park that includes 0.0269 acres of concrete path and 0.0519 acres of decomposed granite plaza. These are

permanent impacts to ruderal land cover and 0.0788 acres of temporary impacts to ruderal land cover (already accounted for in Clearing and Grubbing above).

ATTACHMENT B: FIGURES

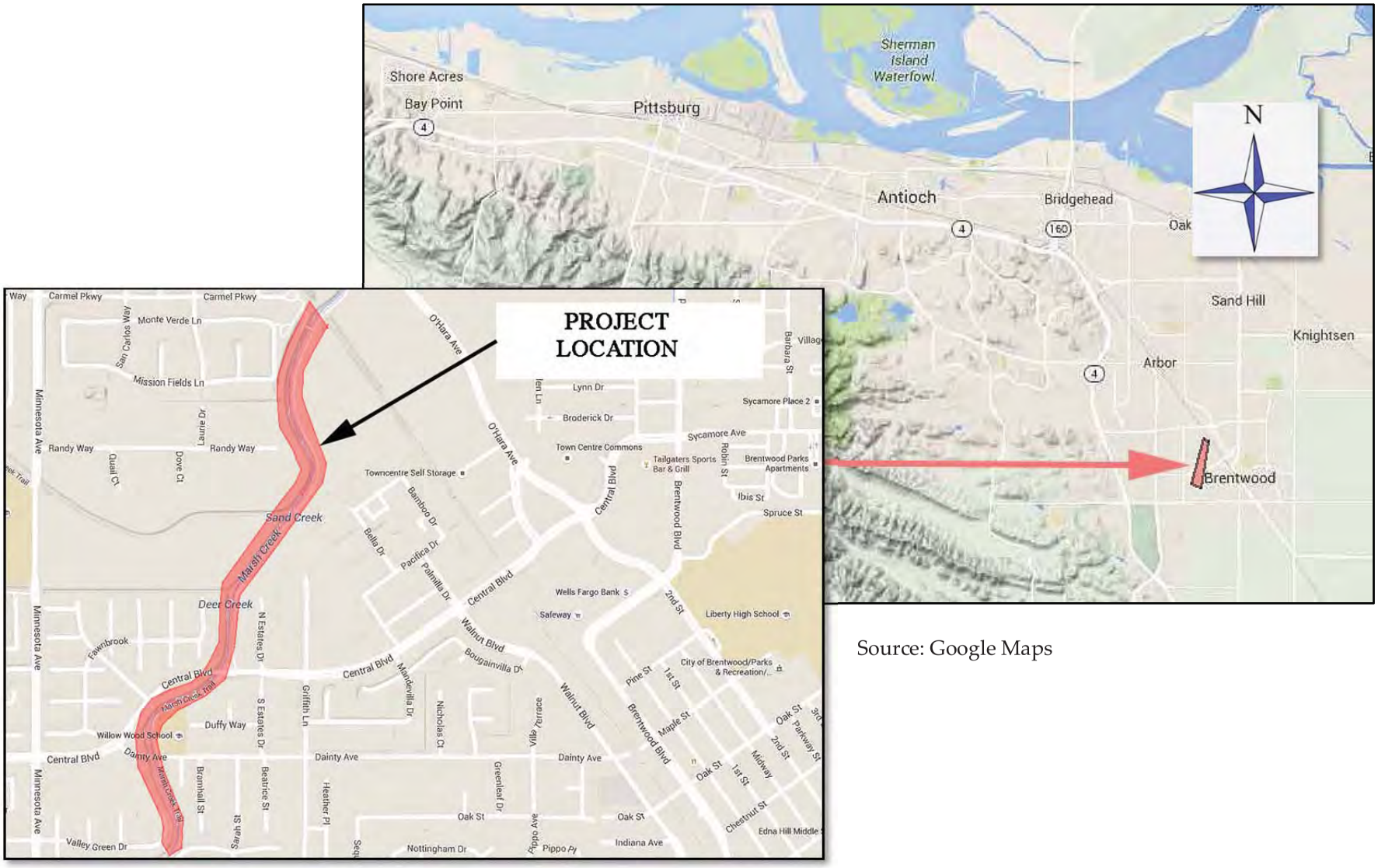
Figure 1. Project Location (1 page)

Figure 2. Project Site Overview (1 page);
Project Plans (40 pages)

Figure 3-1. Landcover in the Inventory Area
Figure 3-2a through 3-2c. Verified Land Cover Maps (with impacts noted)

Figure 4. Photographs of the Project Site (22 pages)

Figure 5. Planning Survey Species Habitat Maps
Figure 5a. Modelled Habitat Distribution - CA Red-legged Frog
Figure 5b. Modelled Habitat Distribution – Swainson's Hawk
Figure 5c. Modelled Habitat Distribution - Golden Eagle
Figure 5d. Modelled Habitat Distribution – Burrowing Owls
Figure 5e. Burrowing Owl Potential Breeding Habitat
Figure 5f. Modelled Habitat Distribution - Western Pond Turtle
Figure 5g. Modelled Habitat Distribution – Silvery Legless Lizard



Source: Google Maps

Figure 1. Project Location

ATTACHMENT C: PROJECT COMPLIANCE TO HCP/NCCP CONDITIONS

THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

BRENTWOOD, CA

100% SET MAY 8, 2019

CLIENT:

AMERICAN RIVERS
LISA HUNT, DIRECTOR OF CALIFORNIA
RIVER RESTORATION SCIENCE
2150 ALLSTON WAY, SUITE 320
BERKELEY, CA 94704
(510) 809-6010

CONSULTANTS:

LANDSCAPE ARCHITECTURE AND ENGINEERING:
RESTORATION DESIGN GROUP, INC.
RICH WALKLING, PROJECT MANAGER
2332 FIFTH STREET, SUITE C
BERKELEY, CA 94710
(510) 644-2798

KENNETH R. HUGHES, STRUCTURAL ENGINEER
KENNETH R. HUGHES, S.E.
3620 MT. DIABLO BLVD. #203
LAFAYETTE, CA 94549
(925) 284-2808

GEOTECHNICAL ENGINEERING:
ENGEO, INC.
2010 CROW CANYON PLACE, SUITE 250
SAN RAMON, CA 94583
(925) 866-9000

CULTURAL RESOURCES:
WSA, INC.
PO BOX 2192
ORINDA, CA 94563
(925) 253-9070

BIOLOGICAL RESOURCES:
WOOD BIOLOGICAL CONSULTING, INC
PO BOX 1569
EL GRANADA, CA 94018
(415) 254 4835

ENVIRONMENTAL SERVICES (CEQA):
IMPACT SCIENCES, INC.
505 14TH STREET, SUITE 1230
OAKLAND, CA 94612
(510) 267-0494

PROJECT PARTNERS:

AMERICAN RIVERS
CONTRA COSTA COUNTY FLOOD CONTROL AND
WATER CONSERVATION DISTRICT
CITY OF BRENTWOOD
EAST BAY REGIONAL PARK DISTRICT
FRIENDS OF MARSH CREEK WATERSHED
EAST CONTRA COSTA COUNTY HABITAT CONSERVANCY

PROJECT SUPPORT:

FUNDING FOR THE PROJECT IS GENEROUSLY PROVIDED BY THE CONTRA COSTA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, CALIFORNIA DEPARTMENT OF WATER RESOURCES URBAN STREAMS RESTORATION GRANT PROGRAM, SACRAMENTO-SAN JOAQUIN DELTA CONSERVANCY PROP 1 ECOSYSTEM RESTORATION AND WATER QUALITY GRANT PROGRAM, CALIFORNIA COASTAL CONSERVANCY PROP 1 GRANT, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY SAN FRANCISCO BAY WATER QUALITY IMPROVEMENT FUND, CALIFORNIA NATURAL RESOURCES AGENCY RIVER PARKWAYS GRANT PROGRAM, AND PULTE HOMES.

TOPOGRAPHICAL DATA:

1. DATE OF SURVEY: 25 JUNE 2017
2. COORDINATE SYSTEM: NAD 1983 CALIFORNIA STATE PLANE, ZONE III, US SURVEY FEET
3. VERTICAL DATUM: NGVD29, US SURVEY FEET
4. VERTICAL CONTROL ESTABLISHED USING COMPASS CONSULTING BENCHMARK NEAR PEDESTRIAN BRIDGE AT NORTH END OF PROJECT SITE, ELEV. = 70.03' NGVD 29, SEE SHEET T-2

CITY OF BRENTWOOD:

REVIEWED FOR CONFORMANCE WITH CITY OF BRENTWOOD STANDARDS AND REQUIREMENTS. APPROVAL FOR CONSTRUCTION IS SUBJECT TO THE INFORMATION SHOWN HEREIN. CITY OF BRENTWOOD AND THE UNDERSIGNED ARE NOT RESPONSIBLE FOR ANY ERRORS OR OMISSIONS THAT MAY EXIST ON THESE PLANS.

MIKI TSUBOTA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
RCE NO. 61648

DATE

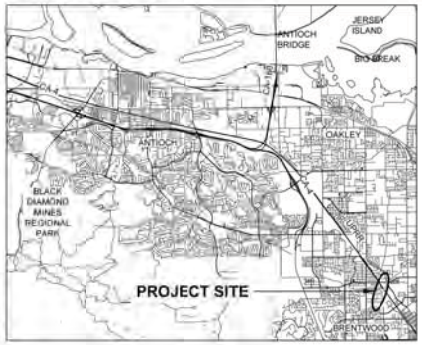
ABBREVIATIONS

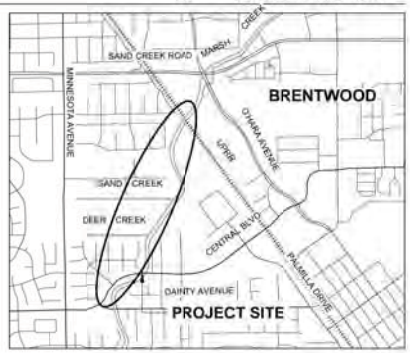
AC	ASPHALT CONCRETE
BB	BOTTOM OF BANK
BW	BOTTOM OF WALL
CCC	CONTRA COSTA COUNTY
CLR	CLEAR
℄	CENTERLINE
COB	CITY OF BRENTWOOD
CRSP	CONCRETED ROCK SLOPE PROTECTION
(E)	EXISTING
EC	EDGE OF CHANNEL
EL	ELEVATION
FCD	FLOOD CONTROL AND WATER CONSERVATION DISTRICT
FG	FINISH GRADE
FL	FLOW LINE
FP	FLOODPLAIN
FS	FINISH SURFACE
GB	GRADE BREAK
HP	HIGH POINT
HCP	HABITAT CONSERVATION PLAN
HMA	HOT MIX ASPHALT
IE	INVERT ELEVATION
LE	LEFT BANK
LP	LOW POINT
L.O.W.	LIMIT OF WORK
MM	MEET AND MATCH
MH	MANHOLE
N.I.C.	NOT IN CONTRACT
OC	ON CENTER
O.R.	OWNER'S REPRESENTATIVE
PP	PRESERVE AND PROTECT
RCP	REINFORCED CONCRETE PIPE
RSP	ROCK SLOPE PROTECTION
RB	RIGHT BANK
R.O.W.	RIGHT-OF-WAY
SD	STORM DRAIN
SS	SANITARY SEWER
STD	STANDARD
TB	TOP OF BANK
TW	TOP OF WALL
TBD	TO BE DETERMINED
TYP.	TYPICAL
UON	UNLESS OTHERWISE NOTED

SHEET LIST

PROJECT LOCATION:

811
CALL BEFORE YOU DIG
UNDERGROUND SERVICE ALERT
2 WORKING DAYS BEFORE YOU DIG CALL USA TOLL FREE 811





GENERAL NOTES

1. THESE PLANS ARE SUPPLEMENTED BY THE 2015 CALTRANS STANDARD PLANS AND SPECIFICATIONS, AND THE CURRENT COUNTY STANDARDS.
2. OWNER REFERS TO THE CONTRA COSTA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT, WHICH IS THE LEAD AGENCY. OWNER OR OWNER'S REPRESENTATIVE (O.R.) FOR THE PROJECT REFERS TO THE DISTRICT ENGINEER, ASSOCIATES OR AGENTS.
5. LEFT BANK AND RIGHT BANK DESIGNATIONS ARE VIEWED LOOKING DOWNSTREAM, UNLESS OTHERWISE NOTED.
6. CONTAINER PLANTING AND OTHER SITE IMPROVEMENTS NOT SHOWN ON PLANS WILL BE COMPLETED BY OTHERS UNDER SEPARATE CONTRACT.
7. CONTRACTOR MUST MEET ALL CONDITIONS OF THE PROJECT PERMITS. SEE SPECIFICATIONS.
8. THE LOCATIONS OF UTILITIES MAY BE DIFFERENT THAN THOSE SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING LOCATIONS OF (E) UTILITIES REQUIRING PROTECTION AND/OR RELOCATION, AND COORDINATION WITH UTILITY COMPANIES AS NECESSARY.
9. CONTRACTOR MUST PROVIDE AS-BUILT DRAWINGS OF ALL SITE IMPROVEMENTS.

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT
CIVIL SET

LICENSED PROFESSIONAL ENGINEER
MATTHEW J. TOMASKE
C 79249
CIVIL
STATE OF CALIFORNIA

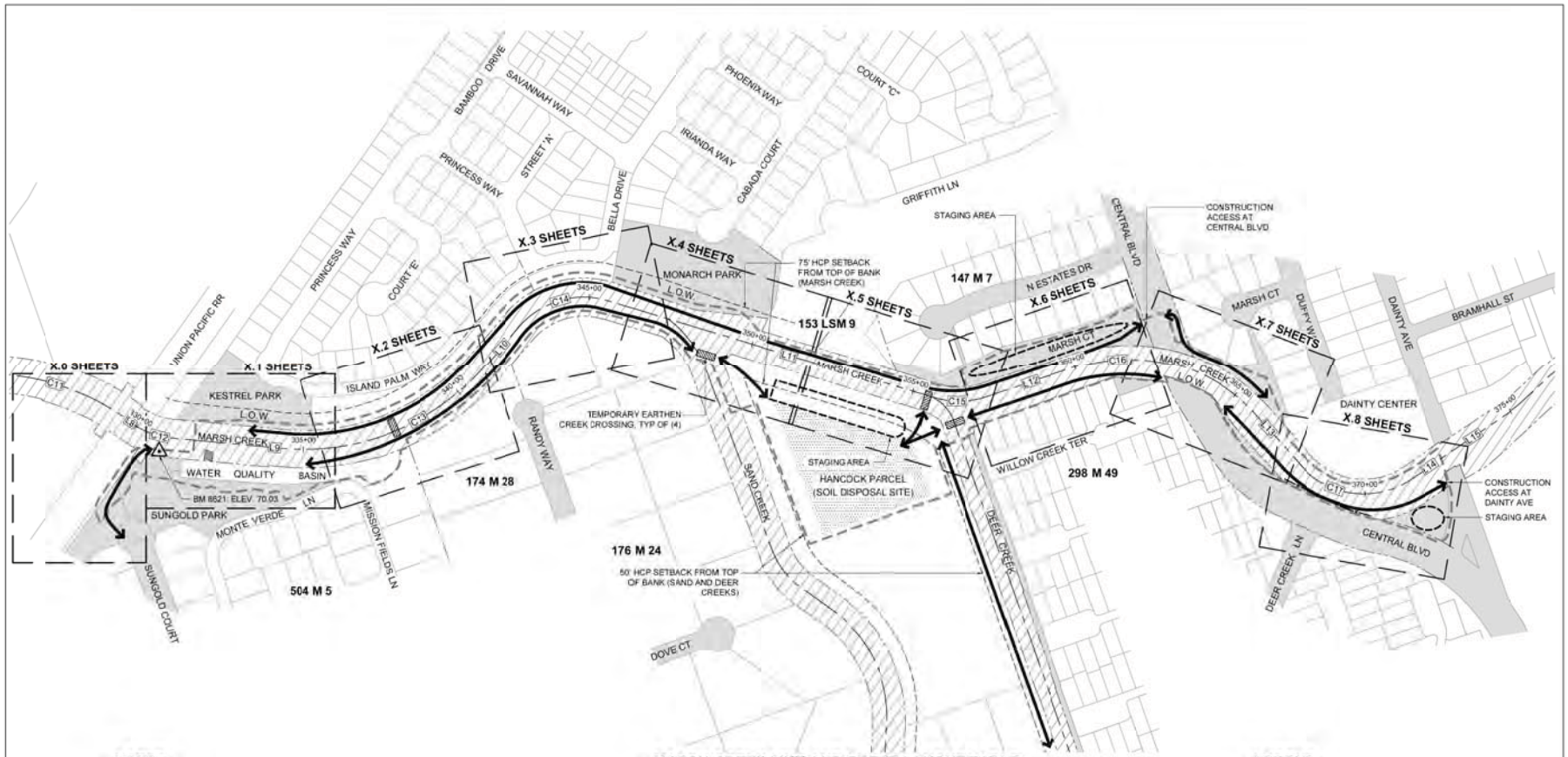
100% SET

Restoration Design Group, Inc.
2332 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2798 F 510.644.2799
www.restorationdesigngroup.com

DESIGN BY: ES / MT
DRAWN BY: ES / IS / KB / PR
CHECKED BY: AS / ES / MT
SCALE: NTS
DATE: MAY 8, 2019

COVER

SHEET
T-1



NOTES

1. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN (TCP) TO THE CITY OF BRENTWOOD. TRAFFIC CONTROL PLANS NEED TO BE REVIEWED AND APPROVED BY THE CITY'S TRAFFIC ENGINEER PRIOR TO THE START OF CONSTRUCTION.
2. CONTRACTOR SHALL PROVIDE A MARSH CREEK TRAIL DETOUR PLAN. SEE SPECS FOR EBRPD DRAFT TRAIL DETOUR PLAN. CONTRACTOR TO REVIEW, AMEND AS NEEDED, AND OBTAIN APPROVAL PRIOR TO START OF WORK. CONTRACTOR SHALL INSTALL INFORMATIONAL, CLOSURE AND DETOUR SIGNS ROUTING USERS. ALL SIGNS SHALL MEET MUTCD STANDARDS. SIGNS SHALL BE POSTED ON MARSH CREEK TRAIL 30 DAYS PRIOR TO CONSTRUCTION INFORMING PUBLIC ABOUT TRAIL CLOSURES AND DETOURS RESULTING FROM THIS PROJECT. MAINTAIN PUBLIC ACCESS TO AND ALONG THE MARSH CREEK REGIONAL TRAIL TO THE GREATEST EXTENT FEASIBLE.
3. NO CONSTRUCTION EQUIPMENT PERMITTED ON NEW SETBACK MARSH CREEK TRAIL BETWEEN STATIONS 333+00 AND 350+00 WITHOUT PRIOR WRITTEN APPROVAL.
4. NO CONSTRUCTION EQUIPMENT PERMITTED ON EXISTING PEDESTRIAN BRIDGE AT STATION 331+70 WITHOUT PRIOR WRITTEN APPROVAL.
5. CONTRACTOR SHALL DOCUMENT EXISTING CONDITIONS INCLUDING TRAIL. CONTRACTOR SHALL REPAIR OR REPLACE DAMAGED FACILITIES, SITE FURNISHINGS AND INFRASTRUCTURE AS REQUIRED TO A CONDITION THAT MATCHES OR EXCEEDS PRE-PROJECT CONDITIONS.
6. TEMPORARY CROSSINGS ARE SHOWN SCHEMATICALLY. ACTUAL CROSSING LOCATIONS SHALL BE DETERMINED BY CONTRACTOR AND SHALL ADHERE TO ALL APPLICABLE PERMIT REQUIREMENTS AND CONDITIONS. FINAL TEMPORARY CROSSING PLAN SHALL BE APPROVED BY THE O.R. PRIOR TO START OF CONSTRUCTION. CROSSINGS ARE LIMITED TO AREAS WITHIN THE L.O.W. SEE SPECIFICATIONS FOR CROSSING DETAILS AND ADDL REQUIREMENTS.
7. SURPLUS SOIL SHALL BE STOCKPILED ON THE HANCOCK PARCEL OUTSIDE OF THE HCP SETBACKS. MAXIMUM SLOPE OF STOCKPILED SOIL SHALL BE 3:1. PROVIDE DUST AND EROSION CONTROL AS REQUIRED TO MEET PROJECT SWPPP AND CITY REQUIREMENTS.

MARSH CREEK LINE AND CURVE LAYOUT TABLE

L8 C11 = TYPICAL SYMBOLS FOR CREEK CENTERLINE LINE AND CURVE LAYOUT

Marsh Creek Centerline

Number	Radius	Length	Line/Chord Direction	Start Station	End Station	Start Northing	Start Easting	End Northing	End Easting
C11	700.00	607.85	S30° 40' 16.62"W	322+48.95	329+56.80	2168459.45	6214116.96	2167952.91	6213818.54
L8		25.25	S55° 32' 53.00"W	329+56.80	329+82.09	2167952.91	6213818.54	2167938.60	6213797.69
C12	250.00	131.49	S40° 28' 50.50"W	329+82.09	331+13.58	2167938.60	6213797.69	2167839.74	6213713.31
L9		323.44	S25° 24' 48.00"W	331+13.58	334+37.02	2167839.74	6213713.31	2167547.60	6213574.50
C13	700.00	668.28	S1° 56' 11.50"E	334+37.02	341+05.30	2167547.60	6213574.50	2166904.77	6213596.24
L10		103.74	S29° 17' 11.00"E	341+05.30	342+69.04	2166904.77	6213596.24	2166761.96	6213676.34
C14	250.00	269.14	S3° 50' 46.50"W	342+69.04	345+58.18	2166761.96	6213676.34	2166489.29	6213658.00
L11		1008.75	S36° 58' 44.00"W	345+58.18	355+66.93	2166489.29	6213658.00	2165683.44	6213051.22
C15	250.00	156.08	S19° 05' 38.00"W	355+66.93	357+23.00	2165683.44	6213051.22	2165538.34	6213000.99
L12		273.73	S1° 12' 32.00"W	357+23.00	359+96.78	2165538.34	6213000.99	2165264.62	6212995.21
C16	500.00	587.33	S34° 51' 38.50"W	359+96.78	365+84.12	2165264.62	6212995.21	2164809.92	6212678.47
L13		199.97	S68° 30' 45.00"W	365+84.12	367+84.09	2164809.92	6212678.47	2164736.67	6212492.40
C17	250.00	360.59	S27° 41' 30.00"W	367+84.09	371+44.68	2164736.67	6212492.40	2164443.02	6212341.54
L14		130.41	S14° 07' 45.00"E	371+44.68	372+75.09	2164443.02	6212341.54	2164316.55	6212373.37
L15		218.37	S14° 07' 45.00"E	372+75.09	374+93.46	2164316.55	6212373.37	2164104.79	6212426.68

LEGEND

- PROPERTY BOUNDARY
- LIMIT OF WORK (L.O.W.)
- CONSTRUCTION ACCESS
- TEMPORARY EARTHEN CREEK CROSSING
- CITY OF BRENTWOOD PROPERTY
- CONTRA COSTA COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT PROPERTY
- HANCOCK PARCEL, SOIL DISPOSAL SITE FOR PROJECT. SEE NOTES.
- STAGING AREA (SHOWN SCHEMATICALLY)

0 160 320 FEET

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER MATTHEW J. TUMAMAO C 79249 CIVIL STATE OF CALIFORNIA

100% SET

Resource Design Group, Inc.
2332 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2788 F 510.644.2799
www.resourcedesigngroup.com

DESIGN BY: ES / MT

DRAWN BY: ES / IS / KB / PR

CHECKED BY: AS / ES / MT

SCALE: 1" = 160'-0"

DATE: MAY 8, 2019

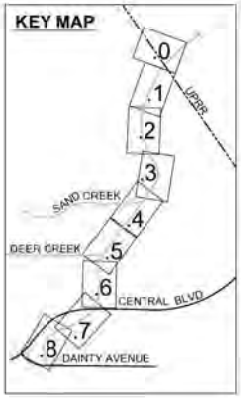
SITE OVERVIEW

SHEET

T-2

ADDITIVE BID OVERVIEW

ADD. BID	DESCRIPTION	SHEETS	NOTES
NO. 1	TRAIL SURFACING UNDER CENTRAL AVENUE BRIDGE	C-1.6, C-1.7, C-2.6, C-2.7	INCLUDES THE EXCHANGE OF RIPRAP FOR CONCRETE PAVING TO THE EXTENTS SHOWN ON THE PLANS. SEE PLANS, BID SHEET, AND SPECIFICATIONS.
NO. 2	DEER CREEK TO SAND CREEK (NO WORK LEFT BANK)	C-1.4, C-1.5, C-2.4, C-2.5	INCLUDES ALL WORK ON THE HANCOCK PARCEL BETWEEN DEER AND SAND CREEK. WORK INCLUDES CHANNEL EXCAVATION, EROSION CONTROL, IRRIGATION, CRSP, RSP, RIPRAP TRENCH DRAINAGE, AND MAINTENANCE ACCESS ROAD. THIS WORK DOES NOT INCLUDE BRIDGE OR ABUTMENT WORK COVERED IN SEPARATE ADDITIVE BIDS. SEE PLANS, BID SHEET, AND SPECIFICATIONS.
NO. 3	GREENWAY AMENITIES	C-1.1, C-1.6, C-2.1, C-2.9	INCLUDES REMOVAL OF BASE BID SECTION OF TRAIL FOR INSTALLATION OF OVERLOOK AND ADDITIONAL CLEARING AND GRUBBING AT CENTRAL. OVERLOOK INCLUDES CONCRETE SURFACE, CONCRETE BENCH BASES FOR NEXT PHASE OF WORK, AND PEDESTRIAN GUARDRAIL.
NO. 4	BRIDGE ABUTMENTS	C-1.4, C-2.4, S1, S2	INCLUDES ABUTMENTS AND WINGWALLS FOR BRIDGE AT 349+50, BOULDERS, AND AC TRAIL SPUR. BASE BID INCLUDES SECTION OF AC TRAIL REQUIRED TO CONNECT SETBACK MARSH CREEK TRAIL WITH MARSH CREEK TRAIL AT STATION 350+00. SEE PLANS, BID SHEET, AND SPECIFICATIONS.
NO. 5	DAINTY TRIANGLE PARK	C-1.8, C-2.8, C-2.10	INVOLVES CONCRETE, RAIN GARDEN, AND SITE IMPROVEMENTS ON SHEET C-2.10. SEE PLANS, BID SHEET, AND SPECIFICATIONS.
NO. 6	PREFABRICATED PEDESTRIAN BRIDGE	C-2.4	INCLUDES INSTALLING A PRE-FABRICATED PEDESTRIAN BRIDGE OVER MARSH CREEK ON BRIDGE ABUTMENTS INSTALLED AS PART OF ADDITIVE BID NO. 4. SEE SPECIFICATIONS FOR REQUIREMENTS.



REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER MATTHEW J. THOMAS C 79249 CIVIL STATE OF CALIFORNIA

100% SET

Rosemeadow Design Group, Inc.
2332 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2788 F 510.644.2799
www.rosemeadowdesigngroup.com

DESIGN BY: ES / MT

DRAWN BY: ES / IS / KB / PR

CHECKED BY: AS / ES / MT

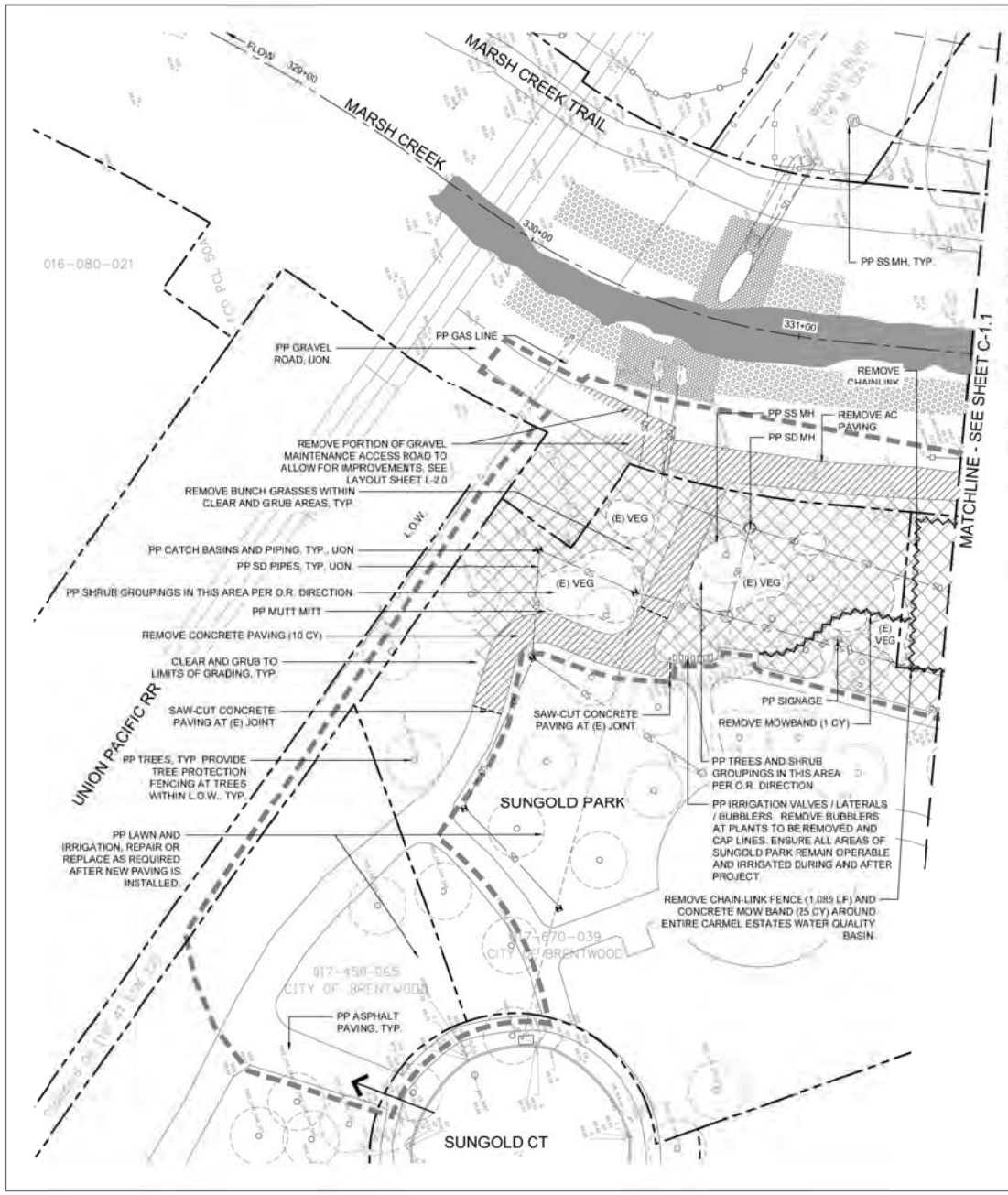
SCALE: NTS

DATE: MAY 8, 2019

ADDITIVE BID OVERVIEW

SHEET

T-3



DEMOLITION LEGEND

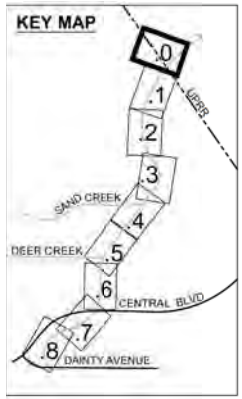
- PROPERTY BOUNDARY
- EASEMENT
- HCP SETBACK LINE
- LIMIT OF WORK (SHOWN SCHEMATICALLY)
- AREA TO BE CLEARED AND GRUBBED. SEE SPECIFIC NOTES ON PLAN
- PAVING TO BE REMOVED, RIPRAP TO BE REMOVED/SALVAGED, SEE DEMOLITION NOTES AND SPECIFIC NOTES ON PLAN
- NON-GROUTED RIPRAP (SHOWN SCHEMATICALLY). SEE C-5.0 AND C-5.1 FOR 1968 AS-BUILTS INFORMATION
- GROUTED RIPRAP (SHOWN SCHEMATICALLY). SEE C-5.0 AND C-5.1 FOR 1968 AS-BUILTS INFORMATION
- (E) STORM DRAIN FEATURES
- FENCING, GATES, WALLS, MOWBANDS AND CURBS TO BE REMOVED
- CONSTRUCTION ACCESS
- (E) SANITARY SEWER LINE
- TREE TO BE REMOVED
- TREE TO BE SALVAGED. SEE NOTES ON PLAN
- TREE TO REMAIN, PROVIDE TREE PROTECTION FENCING

EROSION CONTROL NOTES

1. CONTRACTOR SHALL PROVIDE SWEEP AND ENSURE COMPLIANCE WITH ALL REQUIREMENTS THROUGHOUT THE DURATION OF CONSTRUCTION.
2. SEE LAYOUT AND GRADING PLAN FOR ADDITIONAL EROSION CONTROL NOTES.
3. PROVIDE STORM INLET PROTECTION MEASURES AT ALL DRAIN INLETS WITHIN THE PROJECT SITE. SEE SPECIFICATIONS.
4. PROVIDE SILT FENCE ALONG CHANNEL EDGE BOTH SIDE OF MARSH CREEK FOR ENTIRE PROJECT LENGTH. CONTRACTOR SHALL COORDINATE LOCATIONS WITH PROJECT BIOLOGIST. REMOVE SILT FENCE AFTER HYDROSEEDING.
5. FOR SILT FENCE REQUIREMENTS, SEE SPECIFICATIONS.

DEMOLITION NOTES

1. BURIED UTILITIES WITHIN THE PROJECT SITE AREA SHALL BE THOROUGHLY LOCATED HORIZONTALLY AND VERTICALLY, IDENTIFIED AND PROTECTED PRIOR TO INITIATING WORK. CONTRACTOR TO CALL UNDERGROUND SERVICE ALERT 48 HOURS PRIOR TO START OF WORK.
2. MAINTAIN PROJECT PERIMETER FENCE FOR THE DURATION OF THE CONSTRUCTION PERIOD.
3. PROTECT ALL IMPROVEMENTS NOT NOTED FOR DEMOLITION.
4. PP ALL UTILITIES UNLESS OTHERWISE NOTED.
5. LEGALLY DISPOSE OF ALL MATERIAL CLEARED, GRUBBED, DEMOLISHED, OR SALVAGED BUT NOT UTILIZED FOR PROJECT OR ACCEPTED BY OWNER. STOCKPILE ALL MATERIALS NOTED ON PLANS FOR REUSE.
6. SEE C-5.0 AND C-5.1 FOR 1968 AS-BUILTS FOR ADDITIONAL INFORMATION. EXTENTS OF (E) RIPRAP BASED ON 1968 AS-BUILTS AND ARE SHOWN SCHEMATICALLY. CONTRACTOR TO VERIFY EXTENTS IN THE FIELD.
7. SALVAGE (E) RIPRAP AS SHOWN. ENSURE RIPRAP AT CHANNEL TOE IS PRESERVED AND PROTECTED.
8. STOCKPILE SALVAGED RIPRAP FOR REUSE AS RIPRAP IN 3/C-5.2 RIPRAP TRENCH DETAIL.
9. PRESERVE AND PROTECT ALL (E) IRRIGATION ENCOUNTERED, UON. ENSURE ADJACENT IRRIGATION SYSTEMS ARE FULLY FUNCTIONAL DURING AND AFTER CONSTRUCTION. EXTEND, REMOVE OR CAP IRRIGATION PIPING AS REQUIRED. MARK CAPPED AND RELOCATED IRRIGATION IN THE FIELD FOR OWNER. PROVIDE LOCATION OF REMAINING IRRIGATION FACILITIES ON AS-BUILTS.
10. SALVAGE IRRIGATION EQUIPMENT REMOVED FOR SITE IMPROVEMENTS. PROVIDE TO OWNER FOR RE-USE. CONTRACTOR SHALL DISPOSE OF ALL IRRIGATION EQUIPMENT NOT SUITABLE FOR REUSE.
11. LEGALLY DISPOSE OF ALL CONCRETE AND OTHER DEBRIS NOT NOTED FOR SALVAGE.
12. CONTRACTOR SHALL COORDINATE CLEAR AND GRUB LIMITS WITH PROJECT BIOLOGIST PRIOR TO INITIATING WORK.



0 20 40 FEET

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER MATTHEW J. TIMMONS C 79249 CIVIL STATE OF CALIFORNIA

100% SET

Rosencrance Design Group, Inc.
2332 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2799 F 510.644.2799
www.rosencrancdesigngroup.com

DESIGN BY: ES / MT

DRAWN BY: ES / IS / KB / PR

CHECKED BY: AS / ES / MT

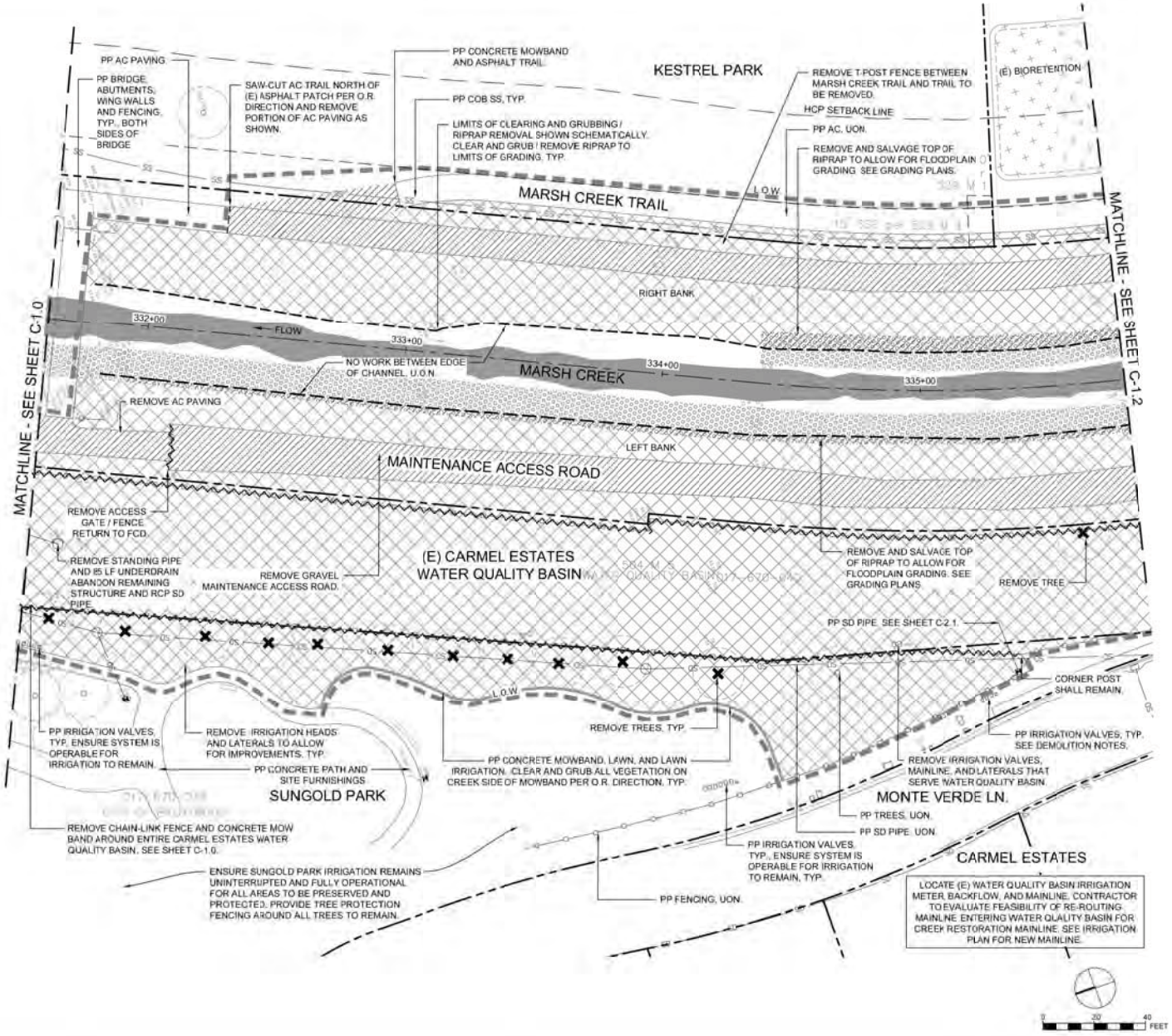
SCALE: 1" = 20'-0"

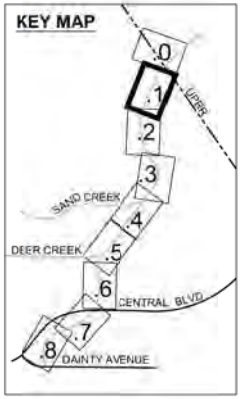
DATE: MAY 8, 2019

DEMOLITION

SHEET

C-1.0





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THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER MATTHEW J. TIMMER C 79249 CIVIL STATE OF CALIFORNIA

100% SET

Resource Design Group, Inc.
2232 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2799 F 510.644.2799
www.resourcedesigngroup.com

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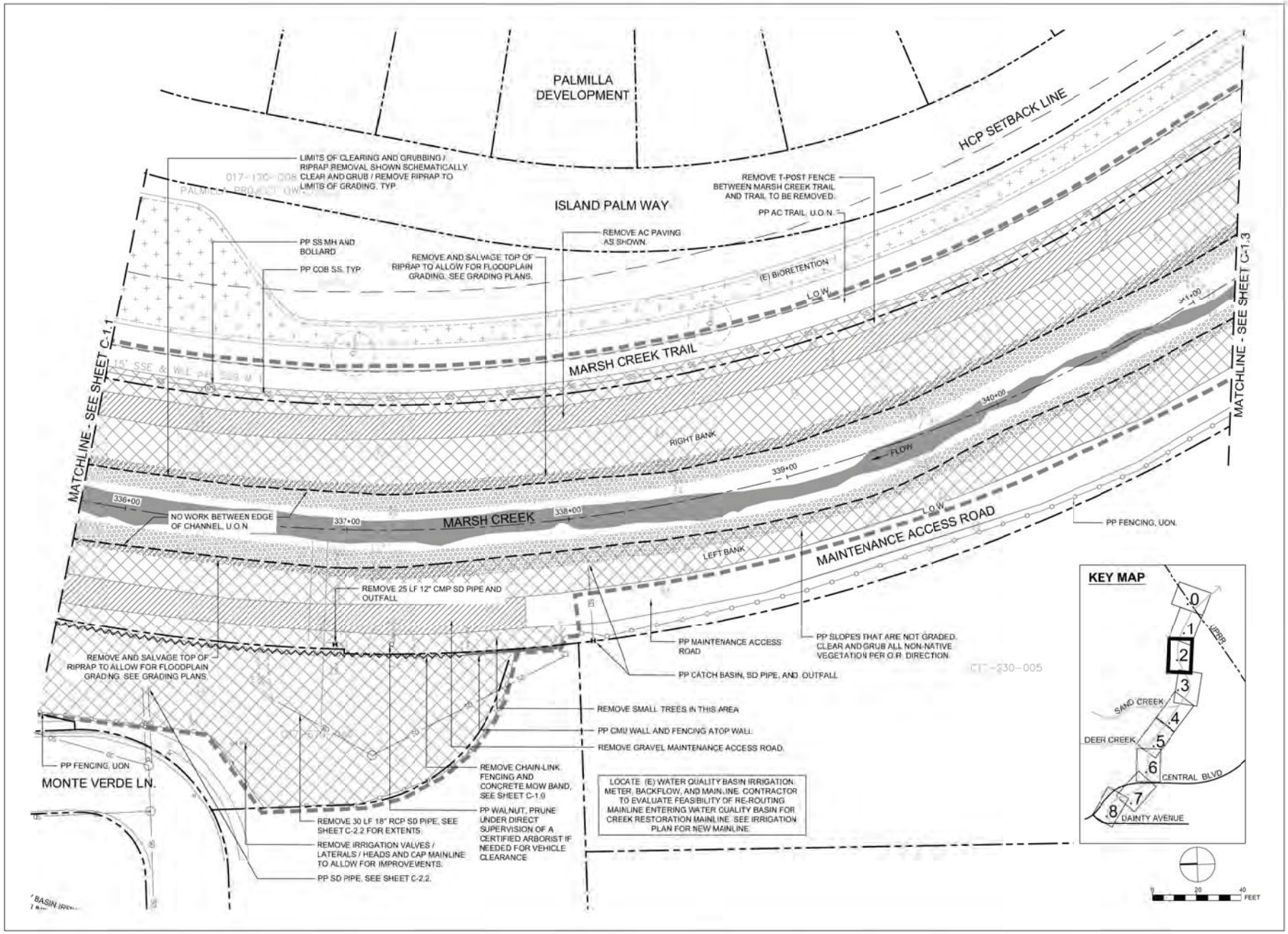
DEMOLITION

SHEET

C-1.1



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THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER MATTHEW J. TIMMONS C 79249 CIVIL STATE OF CALIFORNIA

100% SET

Restoration Design Group, Inc.
2332 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2799 F 510.644.2799
www.restorationdesigngroup.com

DESIGN BY: ES / MT

DRAWN BY: ES / IS / KB / PR

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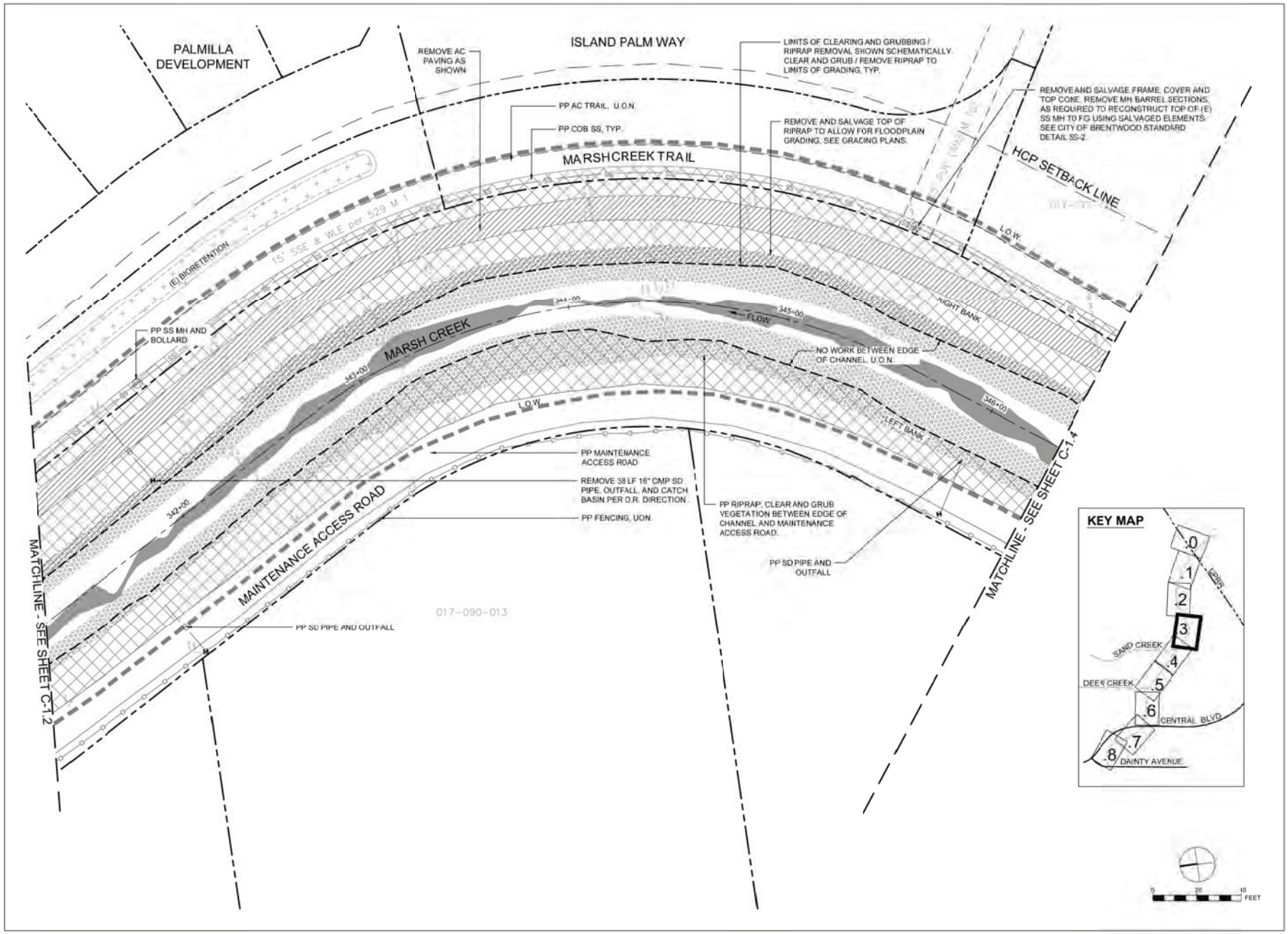
DEMOLITION

SHEET

C-1.2



REVISIONS

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THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER
MATTHEW J. TUMMAS
C 79249
CIVIL
STATE OF CALIFORNIA

100% SET

Resource Design Group, Inc.
2332 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2788 F 510.644.2799
www.resourcedesigngroup.com

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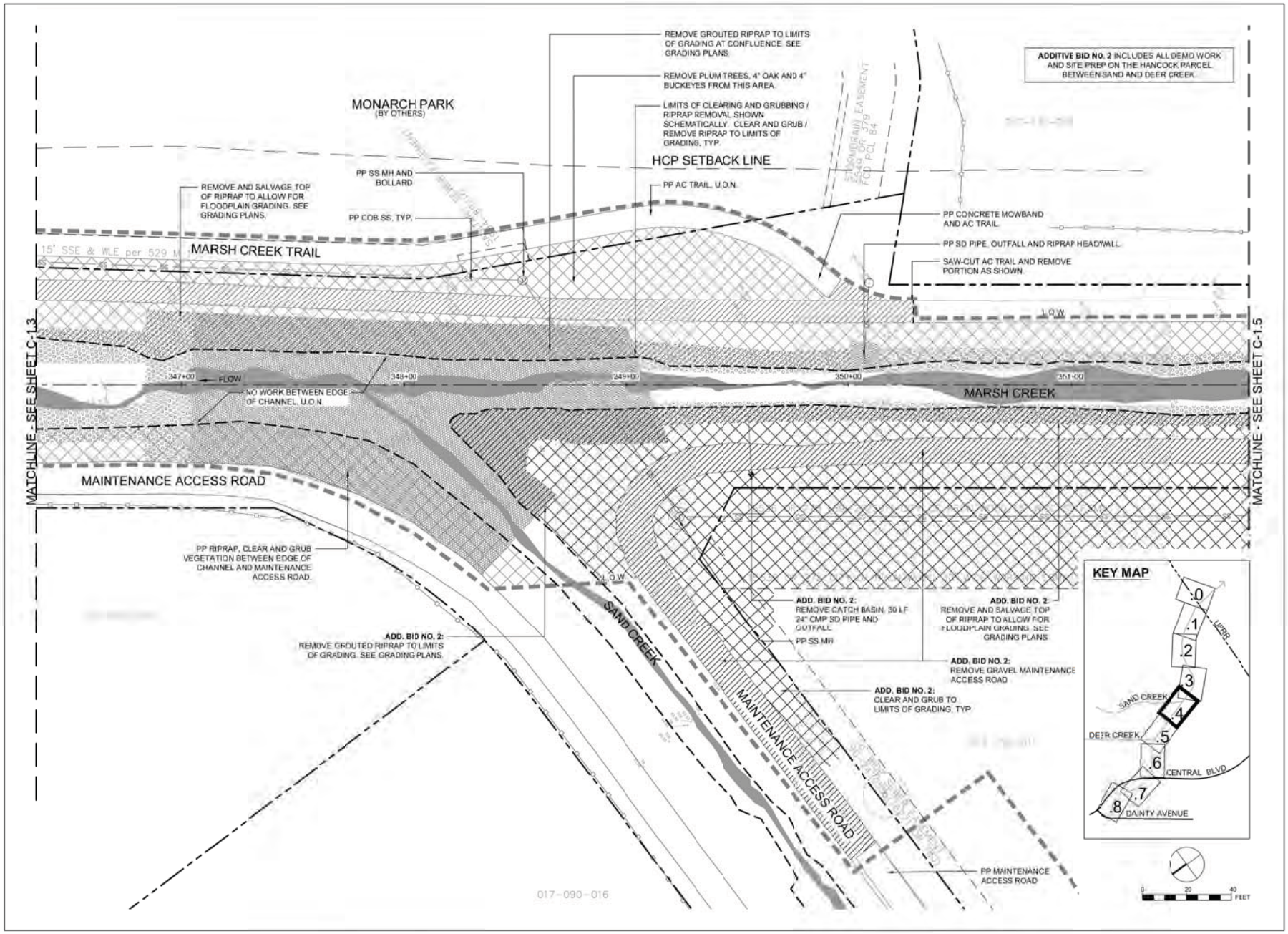
DEMOLITION

SHEET

C-1.3



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THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER
MATTHEW J. TIMMONS
C 79249
CIVIL
STATE OF CALIFORNIA

100% SET

Resource Design Group, Inc.
2332 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2799 F 510.644.2799
www.resourcedesigngroup.com

DESIGN BY: ES / MT
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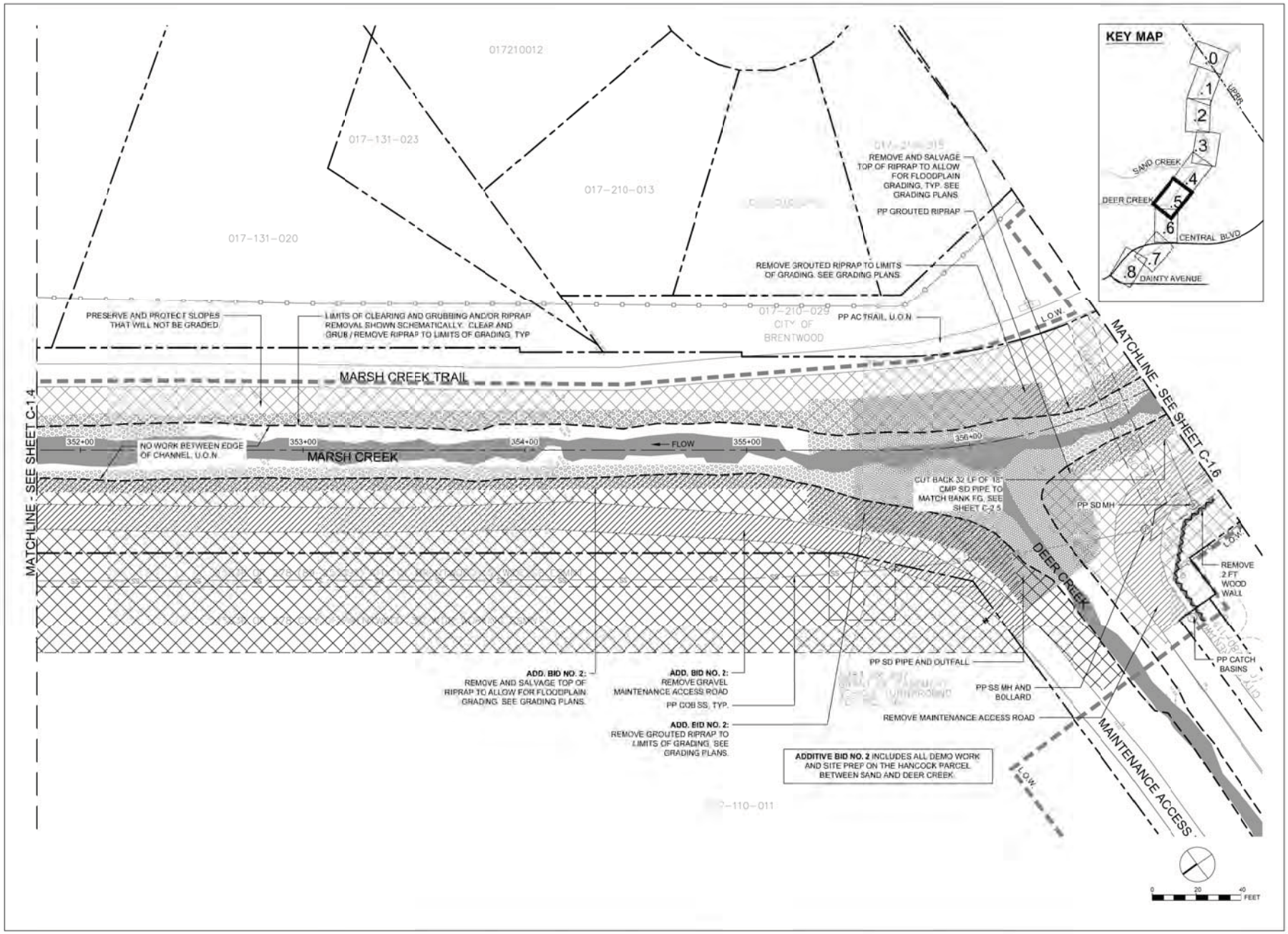
DATE: MAY 8, 2019

DEMOLITION

SHEET

C-1.4



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THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER MATTHEW J. TUMMAS C 79249 CIVIL STATE OF CALIFORNIA

100% SET

Restoration Design Group, Inc.
2232 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2799 F 510.644.2799
www.restorationdesigngroup.com

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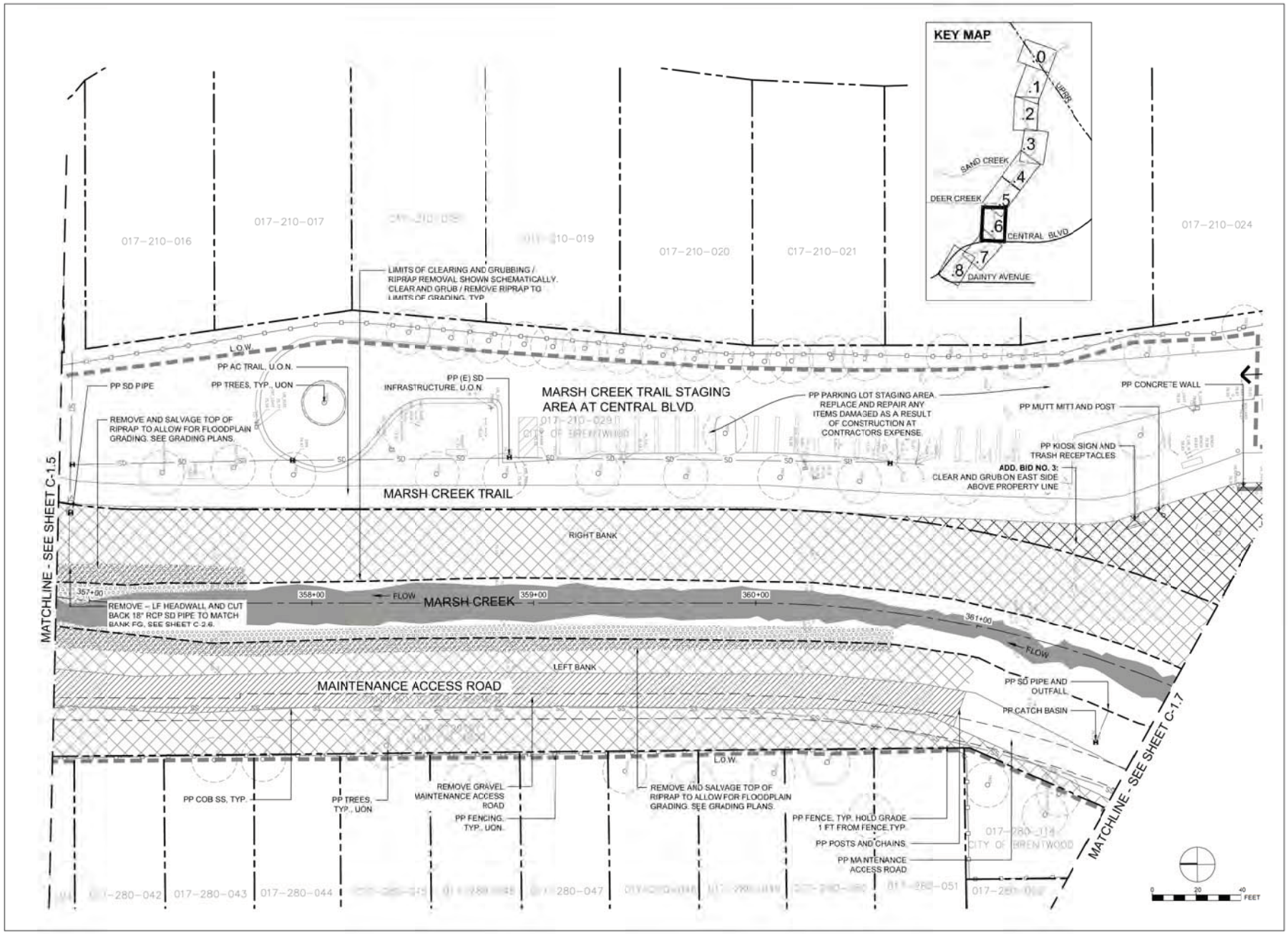
DEMOLITION

SHEET

C-1.5



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THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER
MATTHEW J. TIMMER
C 79247
CIVIL
STATE OF CALIFORNIA

100% SET

Resource Design Group, Inc.
2232 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2798 F 510.644.2799
www.resourcedesigngroup.com

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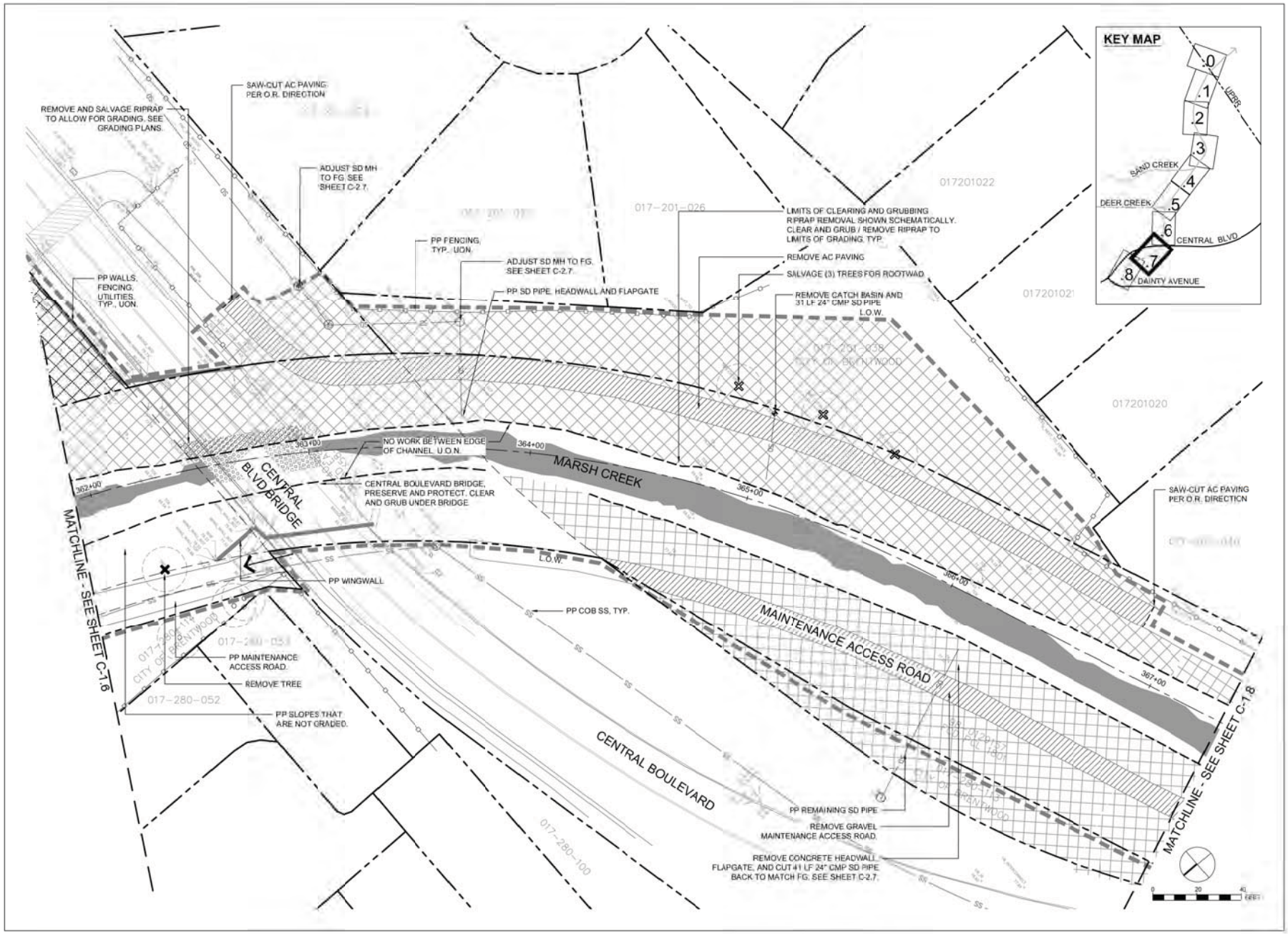
DATE	MAY 8, 2019

DEMOLITION

SHEET

C-1.6



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CIVIL SET

LICENSED PROFESSIONAL ENGINEER
MATTHEW J. TIMMER
C 79249
CIVIL
STATE OF CALIFORNIA

100% SET

Resource Design Group, Inc.
2232 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2799 F 510.644.2799
www.resourcedesigngroup.com

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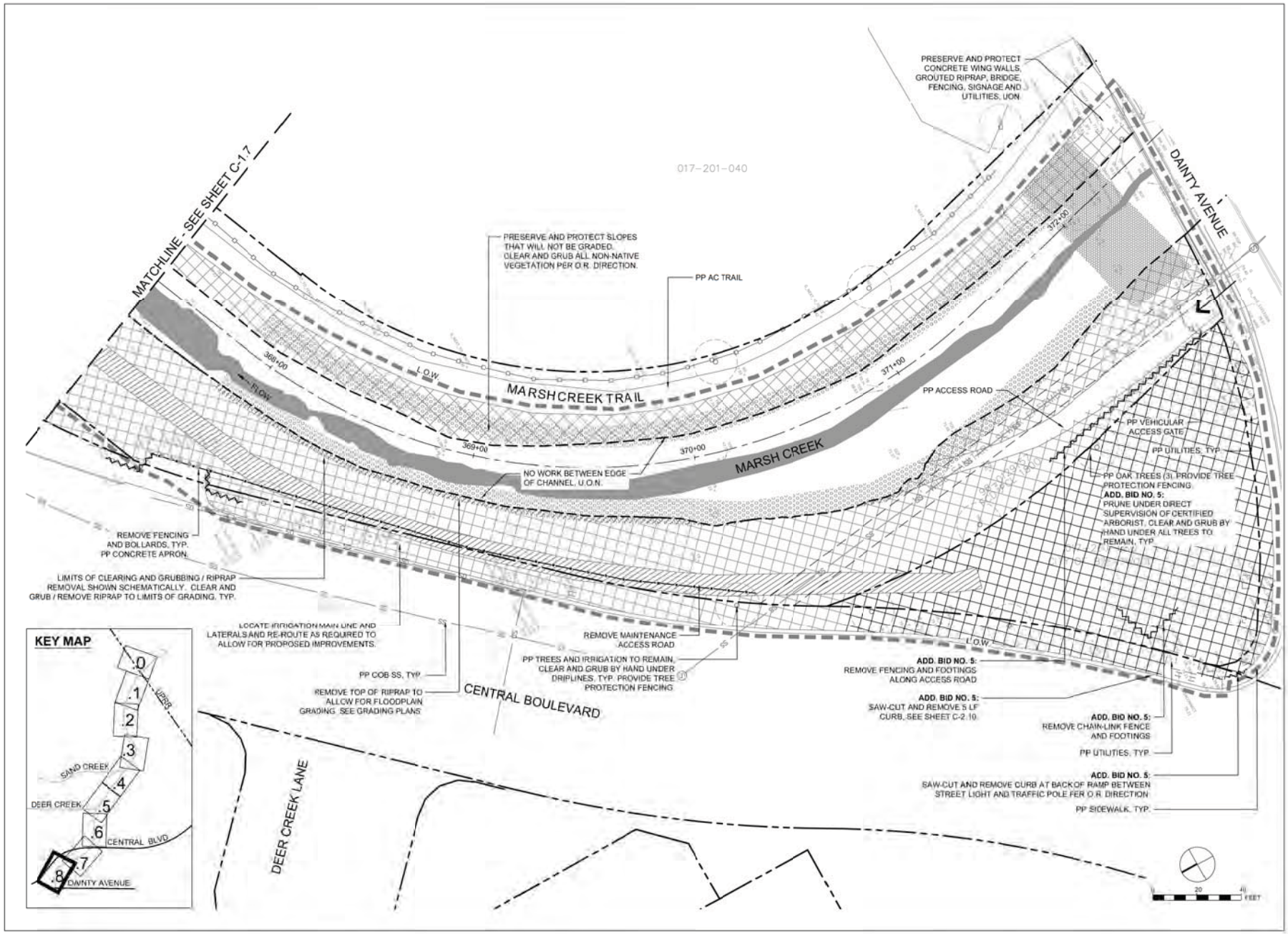
DATE	MAY 8, 2019

DEMOLITION

SHEET

C-1.7



REVISIONS

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THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER
MATTHEW J. TIMMONS
C 79249
CIVIL
STATE OF CALIFORNIA

100% SET

Resource Design Group, Inc.
2232 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2788 F 510.644.2799
www.resourcedesigngroup.com

DESIGN BY	ES / MT
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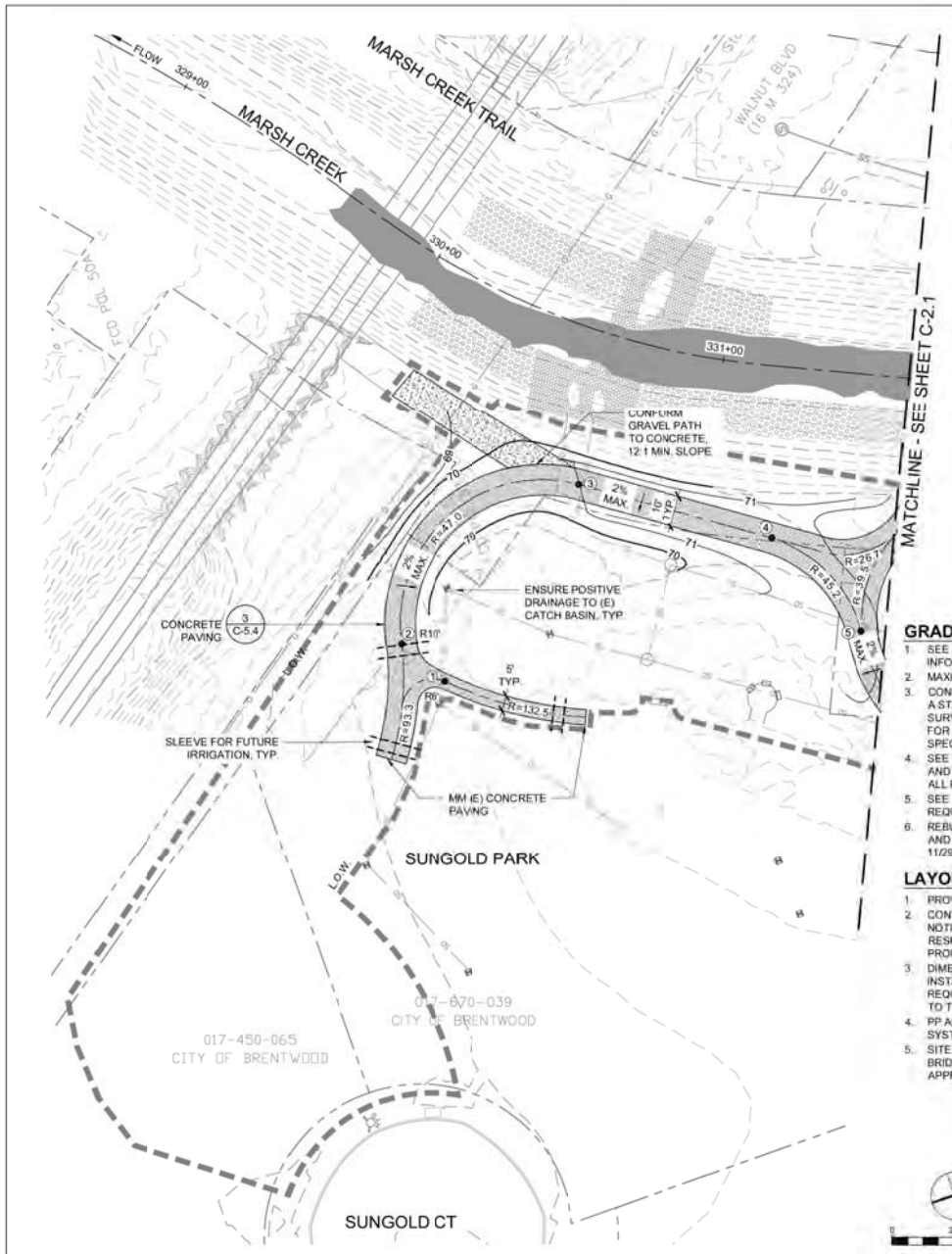
DEMOLITION

SHEET

C-1.8



LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- HCP CREEK SETBACK
- LIMIT OF WORK (SHOWN SCHEMATICALLY)
- 338+00 SECTION CUT LINE, SEE SHEETS C-3.1 - C-3.5
- TRAIL CENTERLINE
- GRADE BREAK (EC, BB, TB)
- SD (E) DRAIN PIPE
- (E) CATCH BASIN
- DRAIN PIPE, SEE PLANS FOR SLOPE
- CATCH BASIN
- RETAINING WALL SEE STRUCTURAL PLANS
- CALTRANS MIDWEST GUARDRAIL SYSTEM (WOOD POST WITH WOOD BLOCK)
- CALTRANS CABLE RAILING (DETAIL B11-47)
- PEDESTRIAN GUARDRAIL 6 C-5.4
- SWALE 4 C-5.2
- BENCH BASE 5 C-5.4
- ROOTWAD 6 C-5.2
- RIPRAP TRENCH 3 C-4.2
- SS (E) SANITARY SEWER LINE
- SITE BOULDER, LAYOUT BY O.R. 5 C-5.2
- (E) AC PAVING (MARSH CREEK TRAIL)
- HMA PAVING (MARSH CREEK TRAIL) 1 C-5.4
- CONCRETE PAVING 3 C-5.4
- AGGREGATE PAVING 2 C-5.4
- (E) RIPRAP (COVERED WITH VEGETATION), SHOWN SCHEMATICALLY, SEE 1968 AS-BUILTS FOR ADDITIONAL INFORMATION
- (E) GROUTED RIPRAP, SHOWN SCHEMATICALLY SEE 1968 AS-BUILTS FOR ADDITIONAL INFORMATION
- RSP 2 C-5.2
- CRSP, SEE CCC STD DETAIL CD40
- ROCK SPILLWAY 3 C-5.3
- 4" SCHEDULE 40 PVC SLEEVE
- (E) MAJOR CONTOUR
- (E) MINOR CONTOUR
- MAJOR CONTOUR
- MINOR CONTOUR

GRADING NOTES

1. SEE SECTIONS FOR ADDITIONAL GRADING INFORMATION.
2. MAXIMUM SLOPE SHALL BE 2:1, UON.
3. CONTRACTOR RESPONSIBLE FOR PROVIDING A STAKED SURVEY BY A LICENSED SURVEYOR OF THE FINAL AS-BUILT GRADING FOR O.R. REVIEW AND APPROVAL. SEE SPECIFICATIONS FOR REQUIREMENTS.
4. SEE T-2 FOR STOCKPILE LOCATIONS. CLEAR AND GRUB AND COMPACT SUBGRADE UNDER ALL PERMANENT STOCKPILES.
5. SEE SPECIFICATIONS FOR SOIL PREPARATION REQUIRED.
6. REBUILD SLOPES PER SPECIAL PROVISIONS AND GEOTECHNICAL REPORT (ENGEO 11/29/2017).
7. CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION AND MAINTENANCE OF ALL BMP'S DEFINED IN THE SWPPP.
8. WHERE EXCAVATION IS REQUIRED ADJACENT TO (E) UTILITIES, HAND EXCAVATE TO VERIFY CONDITION AND LOCATION.
9. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS ON THE SITE AND NOTIFY O.R. OF ALL DISCREPANCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING MINOR SITE ADJUSTMENTS TO GRADING AND ALIGNMENT OF PROPOSED SITE IMPROVEMENTS AT NO COST TO THE OWNER.
10. FINISH GRADE MUST BE SMOOTH WITH NATURAL LINES, ROUND GRADE BREAKS WITH A MINIMUM 4 FT RADIUS, DAYLIGHT AT EC EXCEPTED.

EROSION CONTROL NOTES

1. SEED ALL AREAS DISTURBED DURING CONSTRUCTION PRIOR TO OCTOBER 15TH.
2. SEE SPECS FOR SEEDING REQUIREMENTS.
3. PROVIDE TOUCH UP SEEDING TO ALL AREAS DISTURBED AFTER ORIGINAL SEEDING.
4. INSTALL (2) FIBER ROLLS, CONTINUOUS ALONG ENTIRE CREEK (BOTH SIDES). 1-FT BELOW TOP OF BANK AND 1-FT ABOVE EC PER O.R DIRECTION IN THE FIELD. INSTALL TO L.O.W. AT DEER CREEK AND SAND CREEK, AND BETWEEN STA 331+60 AND 332+00. OMIT FIBER ROLLS AT RSP.

LAYOUT NOTES

1. PROVIDE SHOP DRAWINGS AND AS-BUILTS AS NOTED IN SPECIFICATIONS.
2. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS ON THE SITE AND NOTIFY O.R. OF ALL DISCREPANCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING MINOR SITE ADJUSTMENTS TO LAYOUT OF PROPOSED SITE IMPROVEMENTS AT NO COST TO THE OWNER.
3. DIMENSIONS AS SHOWN ARE TO BE VERIFIED WITH THE O.R. PRIOR TO INSTALLING THE IMPROVEMENTS. IF MINOR FIELD ADJUSTMENTS ARE REQUIRED, THEY SHALL BE COMPLETED BY THE CONTRACTOR AT NO COST TO THE OWNER.
4. PP AND RESTORE ALL EXISTING ADJACENT IRRIGATION EQUIPMENT AND SYSTEMS TO PROVIDE COMPLETE EFFICIENT HEAD TO HEAD COVERAGE.
5. SITE IMPROVEMENTS INCLUDING BUT NOT LIMITED TO: FENCES, PAVING, BRIDGE, AND SWALES SHALL BE STAKED IN THE FIELD FOR REVIEW AND APPROVAL BY O.R. PRIOR TO INSTALLATION.

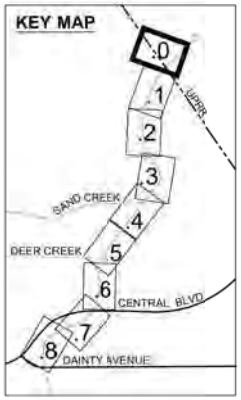
(40) = TYPICAL SYMBOL FOR LAYOUT POINT

Point Table

Point #	Elevation	Northing	Easting	Description
1	70.37	2167974.37	6213651.29	PATH CENTERLINE
2	70.64	2167983.61	6213667.74	PATH CENTERLINE
3	71.00	2167910.66	6213699.62	PATH CENTERLINE
4	71.76	2167857.23	6213698.44	PATH CENTERLINE
5	71.92	2167840.20	6213619.72	PATH CENTERLINE

0 20 40 FEET

KEY MAP



REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER MATTHEW J. TIMMONS C 79249 CIVIL STATE OF CALIFORNIA

100% SET

Resource Design Group, Inc.
2332 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2788 F 510.644.2799
www.resourcedesigngroup.com

DESIGN BY: ES / MT

DRAWN BY: ES / IS / KB / PR

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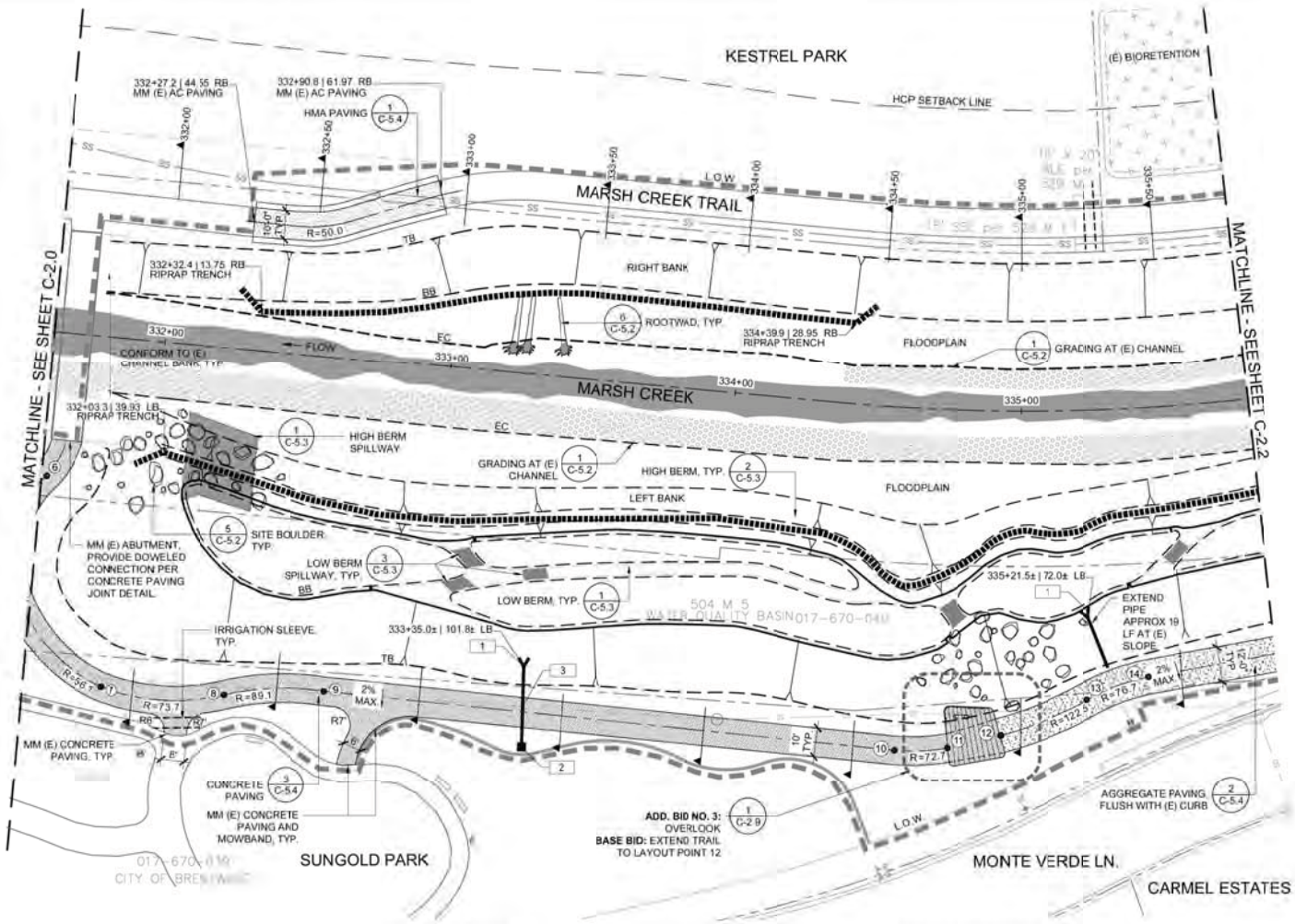
SCALE: 1" = 20'-0"

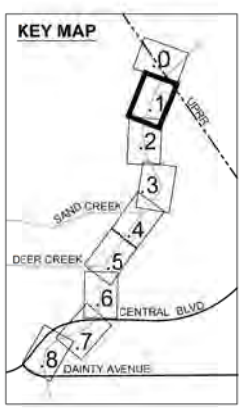
DATE: MAY 8, 2019

LAYOUT + GRADING

SHEET

C-2.0





SITE BOULDERS

SIZE	332+00	335+00
3 TON	5	5
1 TON	8	8
1/2 TON	8	8
1/4 TON	10	8

(40) = TYPICAL SYMBOL FOR LAYOUT POINT

Point Table

Point #	Elevation	Northing	Easting	Description
6	72.20	2167611.04	6213645.91	PATH CENTERLINE
7	72.46	2167624.36	6213570.52	PATH CENTERLINE
8	72.58	2167784.83	6213552.96	PATH CENTERLINE
9	72.81	2167751.48	6213542.12	PATH CENTERLINE
10	73.68	2167571.63	6213454.42	PATH CENTERLINE
11	73.53	2167554.22	6213448.88	PATH CENTERLINE
12	73.54	2167535.02	6213446.53	ROAD CENTERLINE
13	72.55	2167500.30	6213447.79	ROAD CENTERLINE
14	71.80	2167479.61	6213447.97	ROAD CENTERLINE

DRAINAGE NOTES

1. CONSTRUCT BASIN INLET RSP
   SEE DETAIL 5, C-5.3
2. STA 331+36.83, 129.64 LB
   INSTALL CCC TYPE J INLET WITH FRAME AND GRATE AND NO SIDE OPENINGS
   RIM = 73.33, 12" IE OUT = 69.43
   SEE CCC STD PLAN CD29
3. INSTALL 28 LF 12" HDPE SD PIPE OVER (E) 42" RCP
   INSTALL AT 2.0% ± SLOPE
   SEE TYPICAL TRENCH DETAIL, CCC STD PLAN CD01

0 20 40 FEET

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100% SET

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2232 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2799 F 510.644.2799
www.resourcedesigngroup.com

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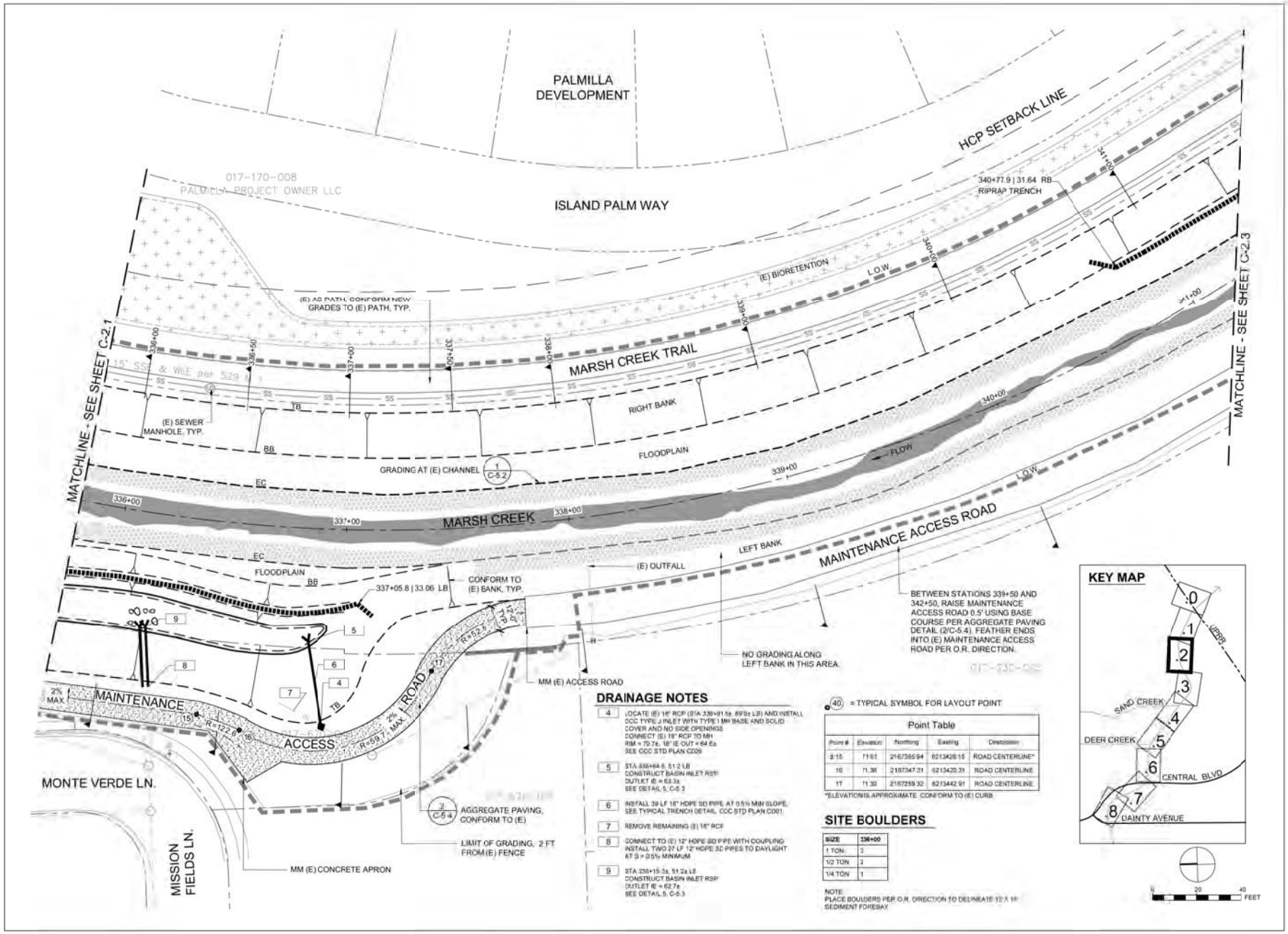
LAYOUT + GRADING

SHEET

C-2.1



DRAINAGE NOTES

4. LOCATE (E) 18" RCP (STA 339+91.5±, 89'0± LB) AND INSTALL CCC TYPE J INLET WITH TYPE 1 MH BASE AND SOLID COVER AND NO SIDE OPENINGS. CONNECT (E) 18" RCP TO MH. RIM = 70.7±, 18" IE OUT = 64.6±. SEE CCC STD PLAN CD29.
5. STA 338+84.5, 51.2 LB. CONSTRUCT BASIN INLET RSP. OUTLET IE = 63.3±. SEE DETAIL 5, C-5.3.
6. INSTALL 39 LF 18" HDPE SD PIPE AT 0.5% MIN SLOPE. SEE TYPICAL TRENCH DETAIL, CCC STD PLAN CD01.
7. REMOVE REMAINING (E) 18" RCP.
8. CONNECT TO (E) 12" HDPE SD PIPE WITH COUPLING. INSTALL TWO 27 LF 12" HDPE SD PIPES TO DAYLIGHT AT S = 0.5% MINIMUM.
9. STA 338+15.3±, 51.2± LB. CONSTRUCT BASIN INLET RSP. OUTLET IE = 62.7±. SEE DETAIL 5, C-5.3.

(40) = TYPICAL SYMBOL FOR LAYOUT POINT

Point Table

Point #	Elevation	Northing	Easting	Description
8-15	71.61	2167385.94	6213428.15	ROAD CENTERLINE*
16	71.36	2167347.31	6213420.31	ROAD CENTERLINE
17	71.30	2167259.32	6213442.91	ROAD CENTERLINE

*ELEVATIONS APPROXIMATE. CONFORM TO (E) CURB.

SITE BOULDERS

SIZE	336+00
1 TON	3
1/2 TON	2
1/4 TON	1

NOTE:
PLACE BOULDERS PER O.R. DIRECTION TO DELINEATE 12'X 16' SEDIMENT FOREBAY

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT
CIVIL SET

LICENSED PROFESSIONAL ENGINEER MATTHEW J. TIMMONS C 79249 CIVIL STATE OF CALIFORNIA

100% SET

Resource Design Group, Inc.
2232 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2799 | 510.644.2799
www.resourcedesigngroup.com

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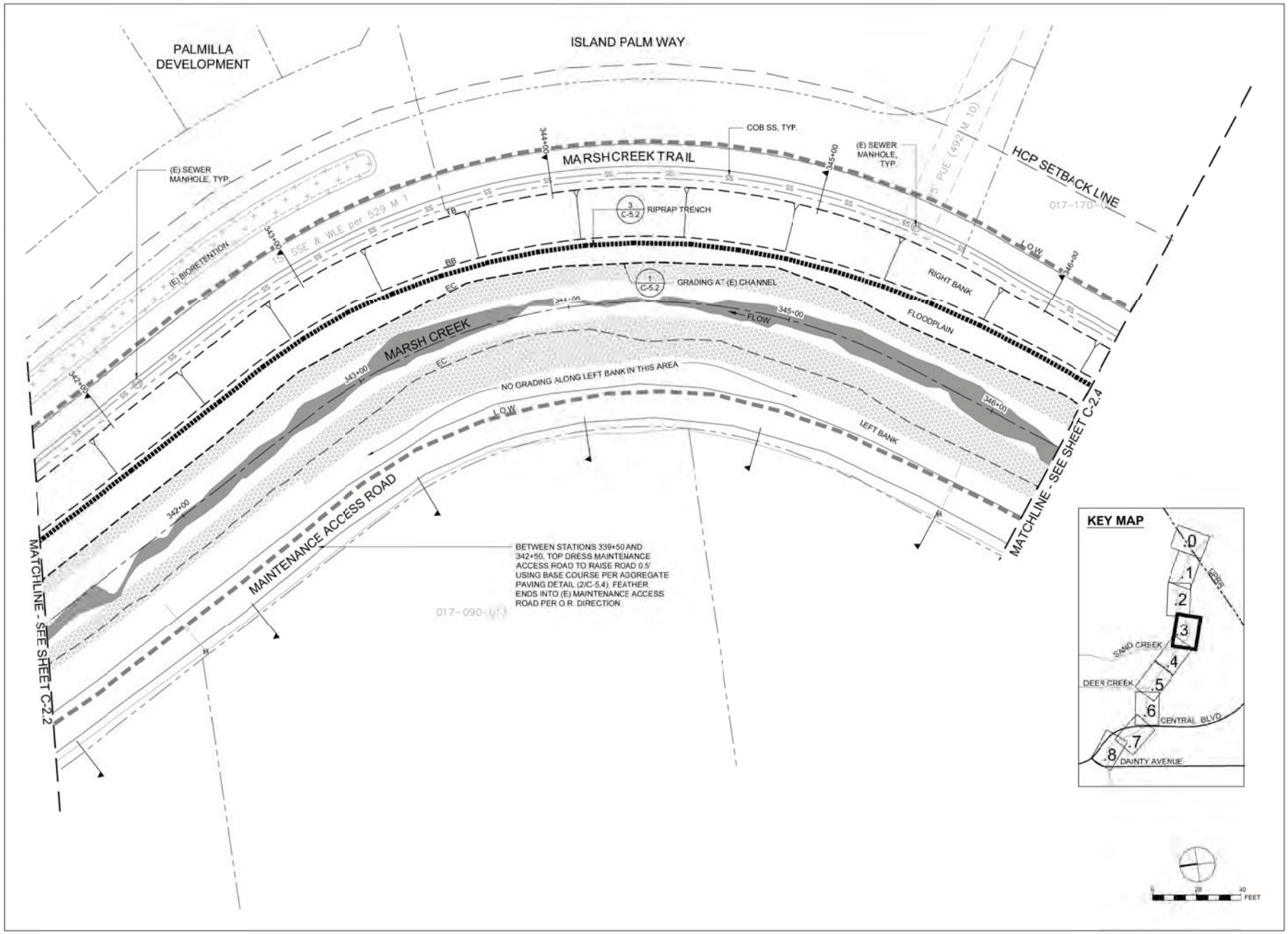
DRAWN BY: ES / IS / KB / PR
CHECKED BY: AS / ES / MT
SCALE: 1" = 20'-0"
DATE: MAY 8, 2019

LAYOUT + GRADING

SHEET
C-2.2



REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

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2332 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2788 F 510.644.2799
www.resourcedesigngroup.com

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SCALE	1" = 20'-0"
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LAYOUT + GRADING

SHEET

C-2.3

ADD. BID NO. 2: DRAINAGE NOTES

11 STA 349+84.9±, 30.9± LB
CONSTRUCT OUTFALL RSP. OUTLET IE = 67.35
SEE DETAIL 4, C-5.3

12 INSTALL 56 LF 18" HDPE SD PIPE AT 1.0% MIN SLOPE.
SEE CCC STD PLAN CD01

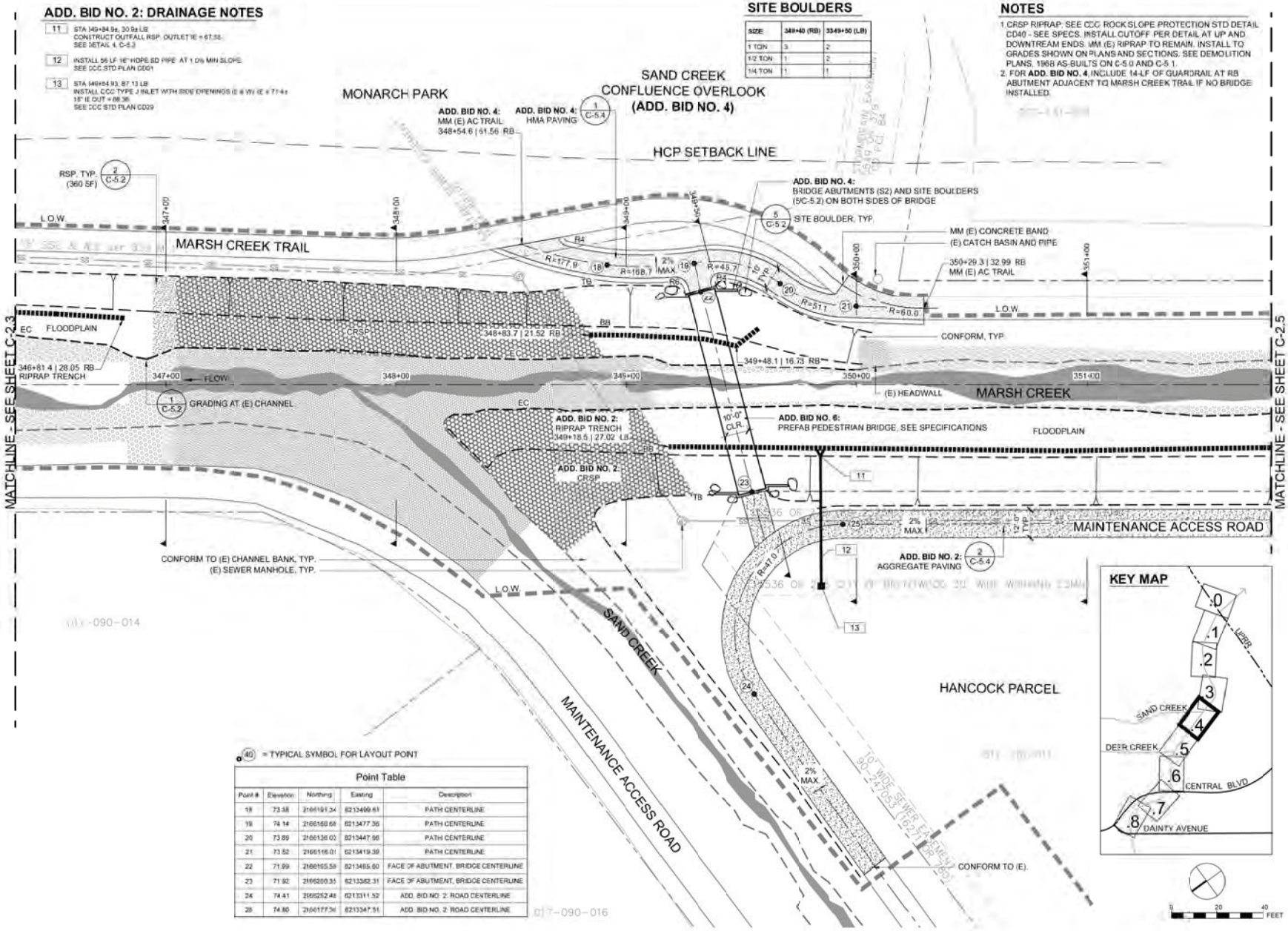
13 STA 349+84.93, 87.13 LB
INSTALL CCC TYPE J INLET WITH SIDE OPENINGS (2 @ W) IE = 71.4±
18" IE OUT = 68.36
SEE CCC STD PLAN CD29

SITE BOULDERS

SIZE	348+40 (RB)	3349+50 (LB)
1 TON	3	2
1/2 TON	1	2
1/4 TON	1	1

NOTES

1. CRSP RIPRAP: SEE CCC ROCK SLOPE PROTECTION STD DETAIL CD40 - SEE SPECS. INSTALL CUTOFF PER DETAIL AT UP AND DOWNTREAM ENDS. MM (E) RIPRAP TO REMAIN. INSTALL TO GRADES SHOWN ON PLANS AND SECTIONS. SEE DEMOLITION PLANS. 1968 AS-BUILTS ON C-5.0 AND C-5.1.
2. FOR **ADD. BID NO. 4**, INCLUDE 14-LF OF GUARDRAIL AT RB ABUTMENT ADJACENT TO MARSH CREEK TRAIL IF NO BRIDGE INSTALLED.



(40) = TYPICAL SYMBOL FOR LAYOUT POINT

Point Table

Point #	Elevation	Northing	Easting	Description
18	73.38	2166191.34	6213499.61	PATH CENTERLINE
19	74.14	2166160.68	6213477.36	PATH CENTERLINE
20	73.89	2166136.03	6213447.96	PATH CENTERLINE
21	73.52	2166116.01	6213419.39	PATH CENTERLINE
22	71.99	2166105.59	6213465.60	FACE OF ABUTMENT, BRIDGE CENTERLINE
23	71.92	2166200.35	6213382.31	FACE OF ABUTMENT, BRIDGE CENTERLINE
24	74.41	2166252.48	6213311.52	ADD. BID NO. 2: ROAD CENTERLINE
25	74.80	2166177.36	6213347.51	ADD. BID NO. 2: ROAD CENTERLINE

REVISIONS

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THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

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100% SET

Rosencrantz Design Group, Inc.
2332 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2799 F 510.644.2799
www.rosencrantzdesigngroup.com

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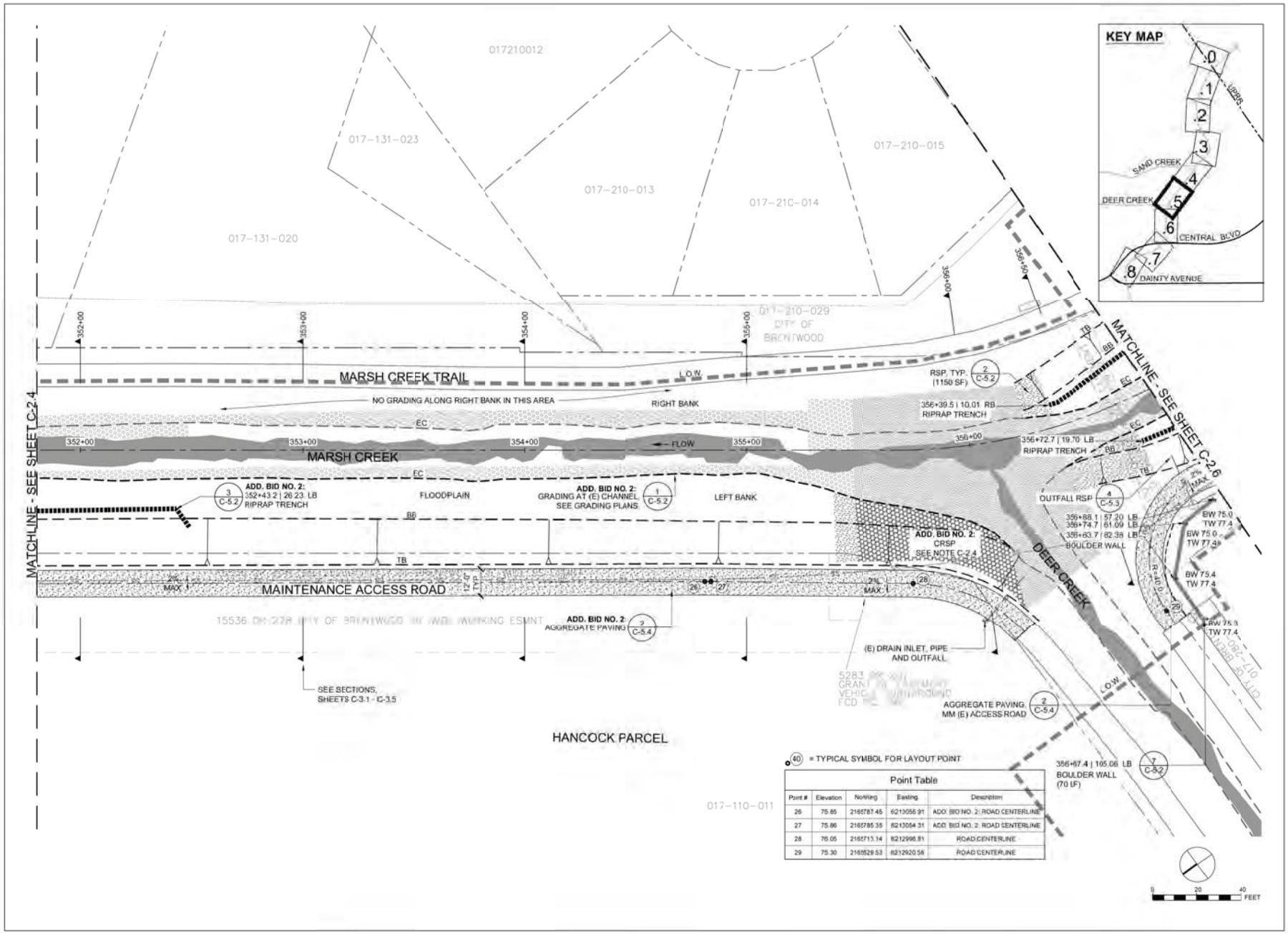
DATE: MAY 8, 2019

LAYOUT + GRADING

SHEET

C-2.4



Point Table

Point #	Elevation	Northing	Easting	Description
26	75.85	2165787.45	6213056.91	ADD. BID NO. 2: ROAD CENTERLINE
27	75.86	2165785.35	6213054.31	ADD. BID NO. 2: ROAD CENTERLINE
28	76.05	2165713.14	6212996.81	ROAD CENTERLINE
29	75.30	2165529.53	6212920.56	ROAD CENTERLINE

REVISIONS

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100% SET

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2332 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2788 | F 510.644.2799
www.resourcedesigngroup.com

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DATE: MAY 8, 2019

LAYOUT + GRADING

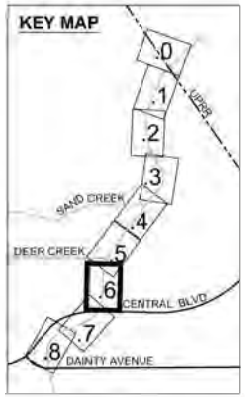
SHEET

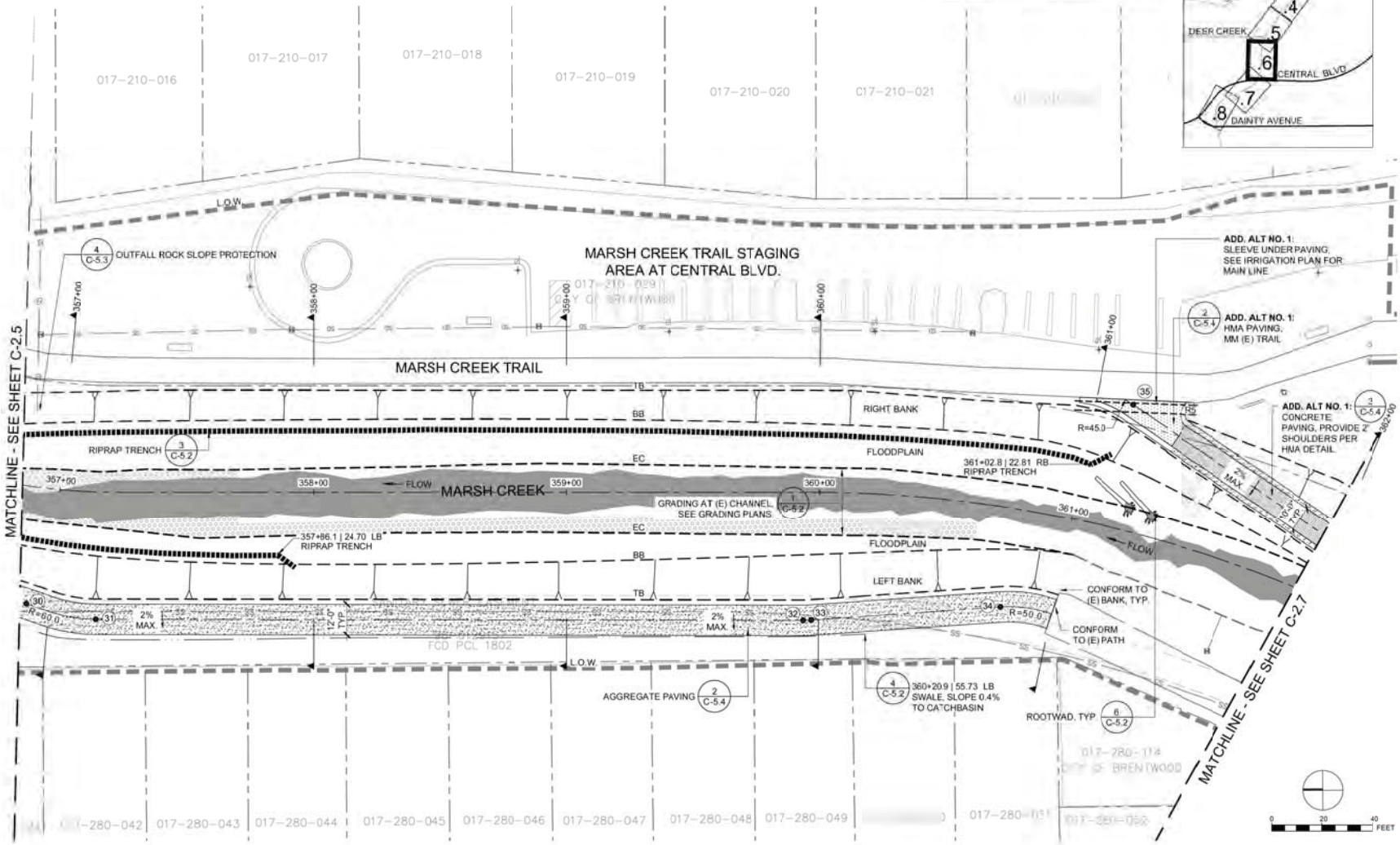
C-2.5

(40) = TYPICAL SYMBOL FOR LAYOUT POINT

Point Table

Point #	Elevation	Northing	Easting	Description
30	75.53	2165575.28	6212957.49	ROAD CENTERLINE
31	75.61	2165547.97	6212950.79	ROAD CENTERLINE
32	76.28	2165268.81	6212944.47	ROAD CENTERLINE
33	76.28	2165265.53	6212944.51	ROAD CENTERLINE
34	76.44	2165190.99	6212945.10	ROAD CENTERLINE
35	69.73	2165138.98	6213026.94	PATH CENTERLINE





REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

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100% SET

Resource Design Group, Inc.
2232 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2789 F 510.644.2799
www.resourcedesigngroup.com

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DATE: MAY 8, 2019

LAYOUT + GRADING

SHEET

C-2.6

DRAINAGE NOTES

14 STA 363+68.12, 95.46 RB
CONNECT NEW 12" SD PIPE TO (E) CATCH BASIN

15 INSTALL 154 LF 12" HDPE SD PIPE AT 0.5% MIN SLOPE.
SEE CCC STD PLAN CD01

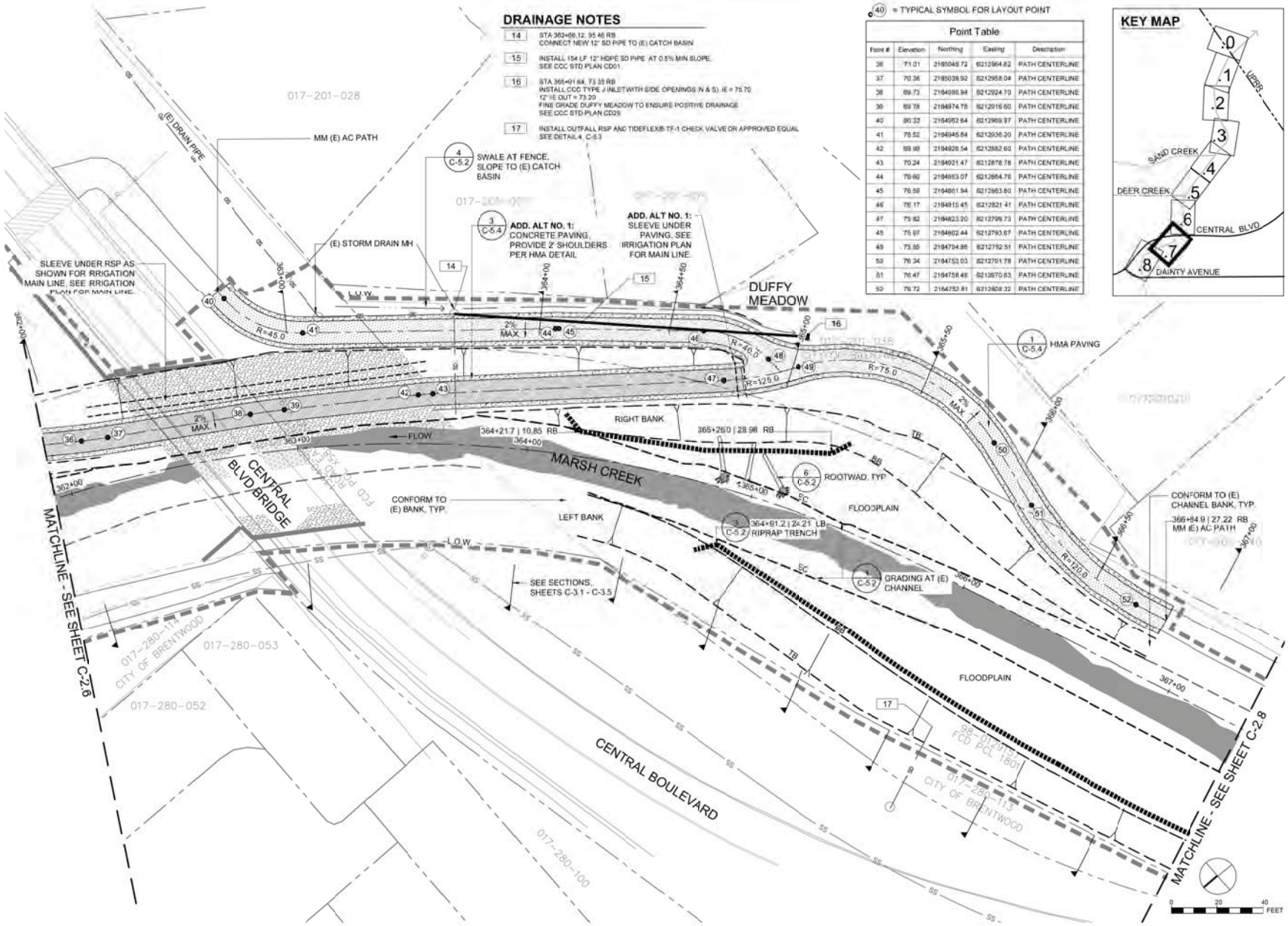
16 STA 365+01.64, 73.35 RB
INSTALL CCC TYPE J INLET WITH SIDE OPENINGS (N & S). IE = 75.70
12" IE OUT = 73.20
FINE GRADE DUFFY MEADOW TO ENSURE POSITIVE DRAINAGE
SEE CCC STD PLAN CD29

17 INSTALL OUTFALL RSP AND TIDEFLEX® TF-1 CHECK VALVE OR APPROVED EQUAL
SEE DETAIL 4, C-5.3

(40) = TYPICAL SYMBOL FOR LAYOUT POINT

Point Table

Point #	Elevation	Northing	Easting	Description
36	71.01	2185049.72	6212964.62	PATH CENTERLINE
37	70.36	2185039.92	6212958.04	PATH CENTERLINE
38	69.73	2184986.94	6212924.70	PATH CENTERLINE
39	69.78	2184974.78	6212916.60	PATH CENTERLINE
40	80.32	2184952.64	6212969.97	PATH CENTERLINE
41	78.52	2184945.84	6212936.20	PATH CENTERLINE
42	69.99	2184926.54	6212882.60	PATH CENTERLINE
43	70.24	2184921.47	6212878.78	PATH CENTERLINE
44	75.60	2184863.07	6212864.76	PATH CENTERLINE
45	76.50	2184861.94	6212863.60	PATH CENTERLINE
46	76.17	2184815.45	6212821.41	PATH CENTERLINE
47	75.82	2184823.20	6212799.73	PATH CENTERLINE
48	75.67	2184802.44	6212793.67	PATH CENTERLINE
49	75.05	2184794.86	6212782.51	PATH CENTERLINE
50	76.34	2184753.03	6212701.79	PATH CENTERLINE
51	76.47	2184758.46	6212670.63	PATH CENTERLINE
52	76.72	2184752.81	6212608.32	PATH CENTERLINE



REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER MATTHEW J. TIMMER C 79249 CIVIL STATE OF CALIFORNIA

100% SET

Resource Design Group, Inc.
2332 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2799 F 510.644.2799
www.resourcedesigngroup.com

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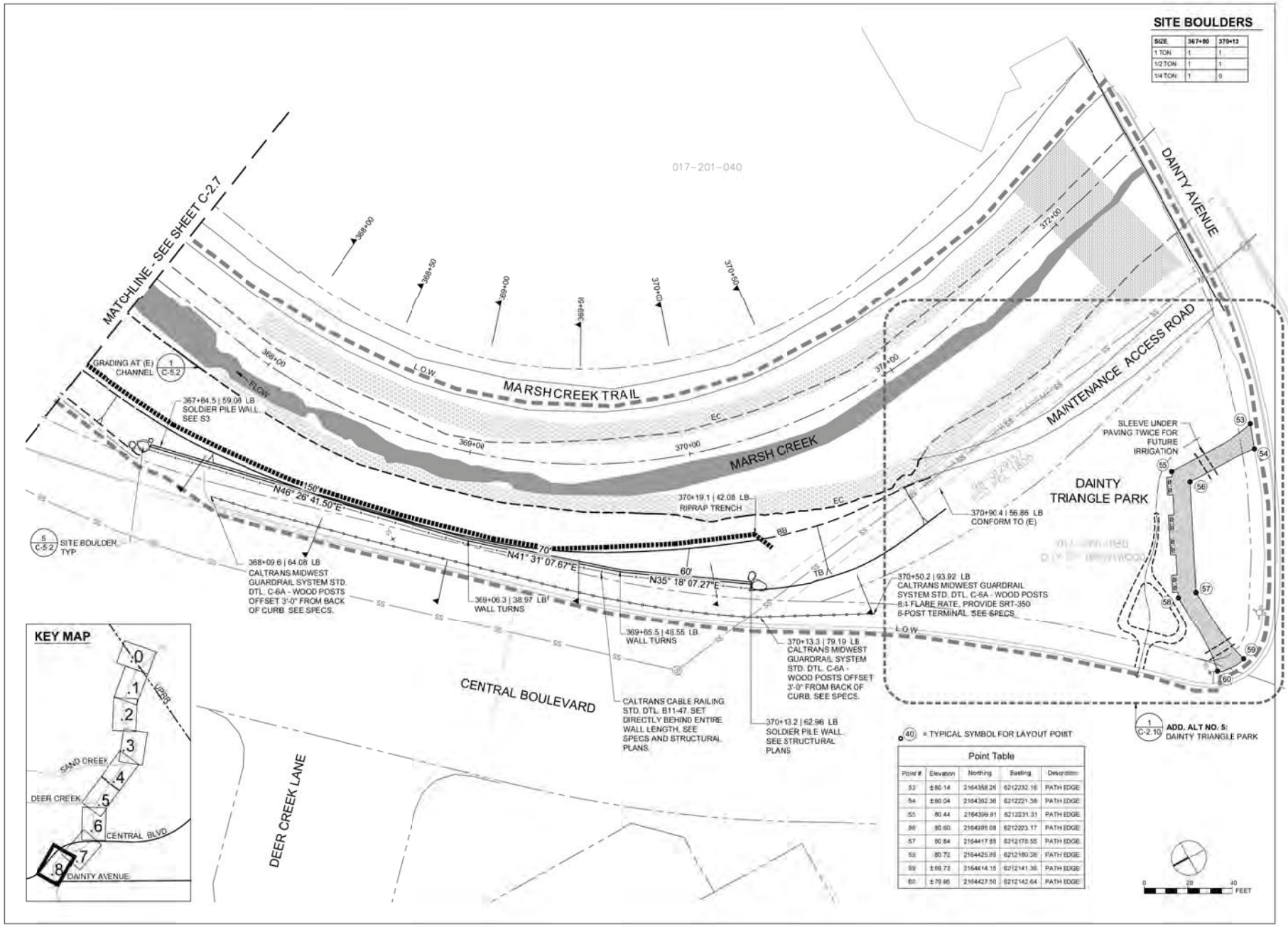
SCALE: 1" = 20'-0"
DATE: MAY 8, 2019

LAYOUT + GRADING

SHEET

C-2.7



SITE BOULDERS

SIZE	367+80	370+13
1 TON	1	1
1/2 TON	1	1
1/4 TON	1	0

Point Table

Point #	Elevation	Northing	Easting	Description
53	±80.14	2164358.26	6212232.16	PATH EDGE
54	±80.04	2164382.36	6212221.38	PATH EDGE
55	80.44	2164399.91	6212231.31	PATH EDGE
56	80.60	2164395.08	6212223.17	PATH EDGE
57	80.64	2164417.85	6212178.55	PATH EDGE
58	80.72	2164425.89	6212180.36	PATH EDGE
59	±80.73	2164414.15	6212141.36	PATH EDGE
60	±79.96	2164427.50	6212142.64	PATH EDGE

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

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2332 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2799 F 510.644.2799
www.rosencrancdesigngroup.com

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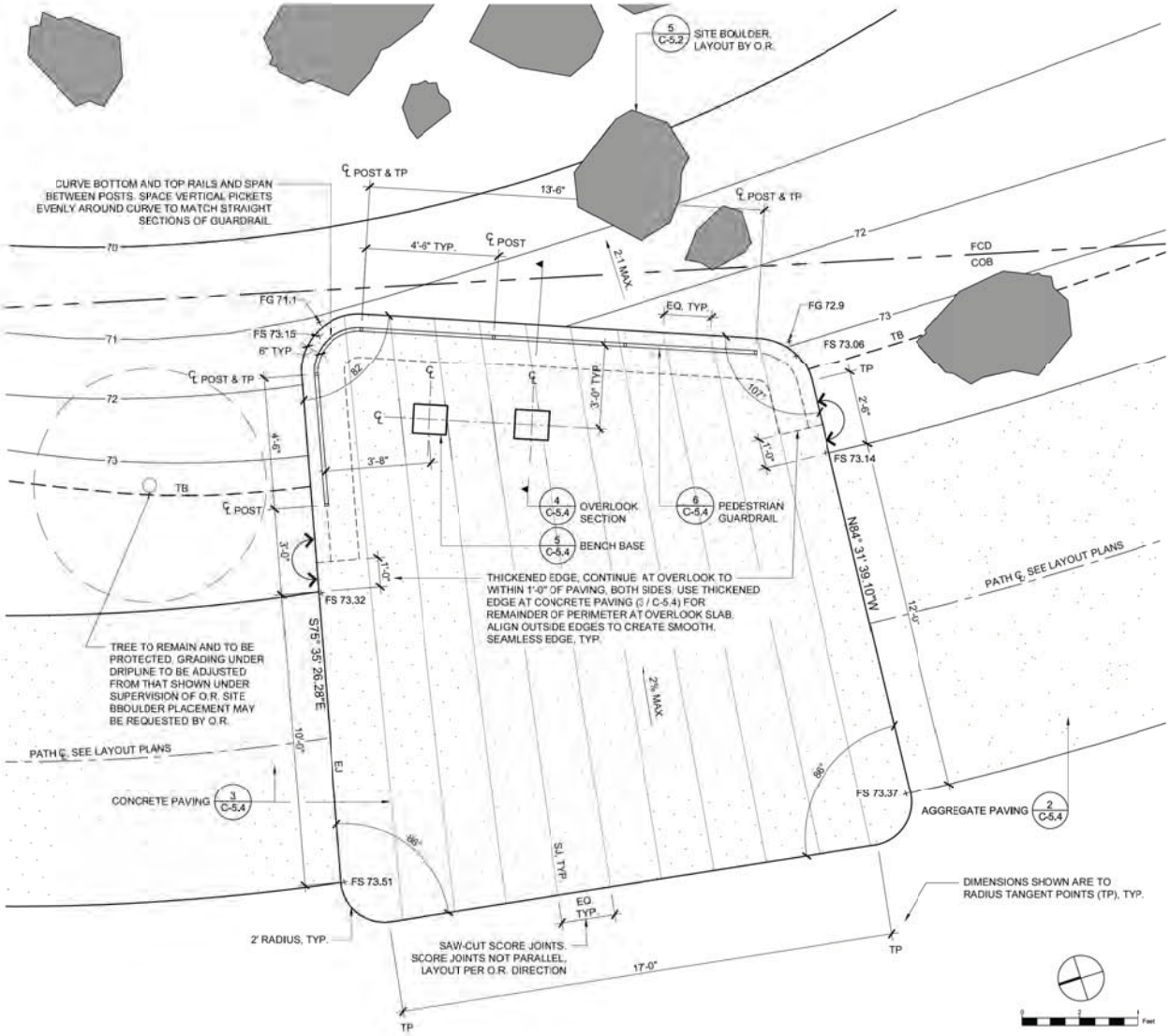
SCALE 1" = 20'-0"

DATE MAY 8, 2019

LAYOUT + GRADING

SHEET

C-2.8



1 **ADDITIVE BID NO. 3:** OVERLOOK

SCALE: 1/2" = 1'-0"

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER MATTHEW T. TUDHOPE C 79249 CIVIL STATE OF CALIFORNIA

100% SET

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2332 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2798 F 510.644.2799
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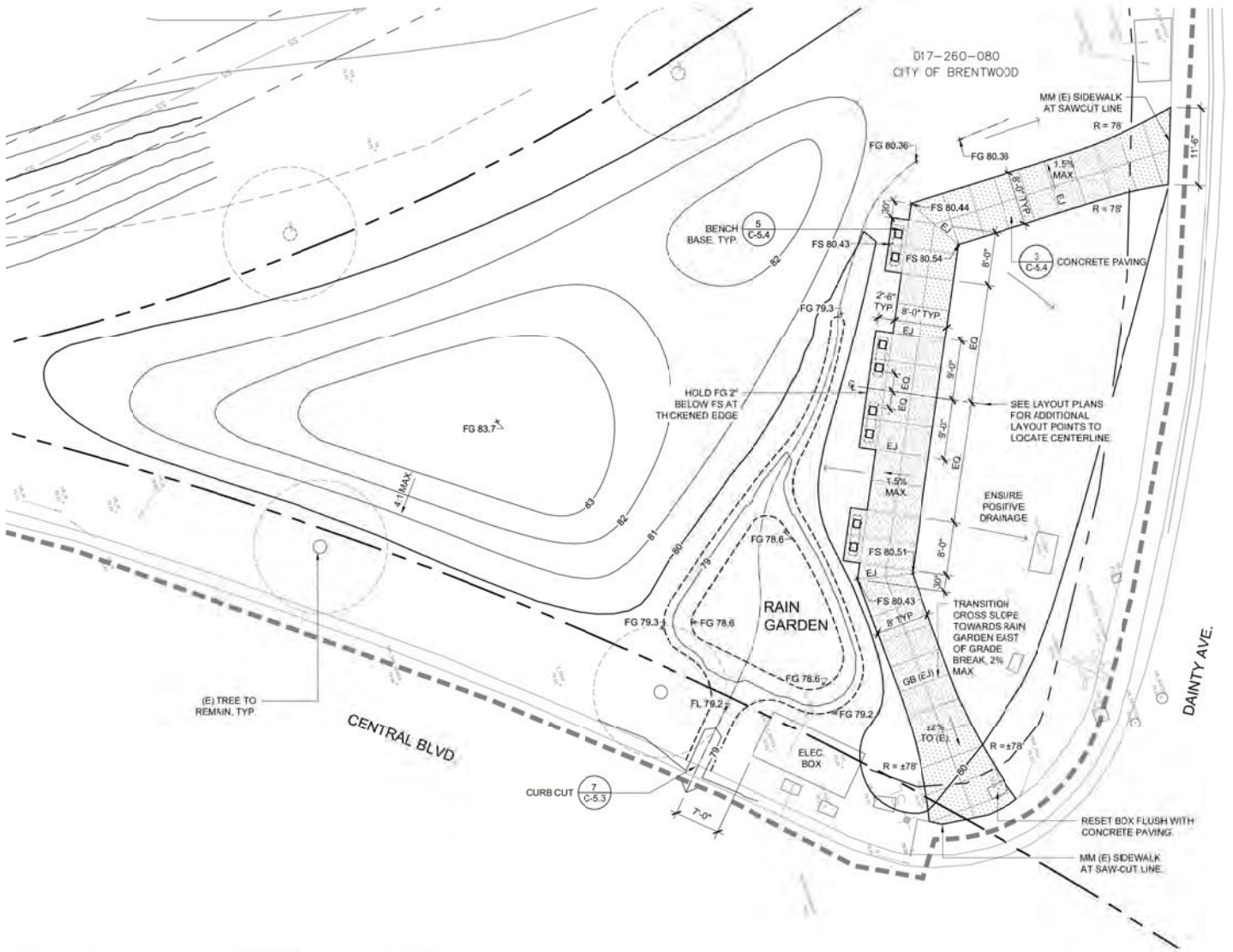
ENLARGEMENTS

SHEET

C-2.9



1 **ADDITIVE BID NO. 5:** DAINTY TRIANGLE PARK

SCALE: NTS

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER MATTHEW J. TUMAMAO C 79249 CIVIL STATE OF CALIFORNIA

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RDG Rosanovich Design Group, Inc. 2232 Fifth Street, Suite C Berkeley, CA 94710 T 510.644.2788 F 510.644.2799 www.rosanovichdesigngroup.com

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SCALE	1/8" = 1'-0"
DATE	MAY 8, 2019

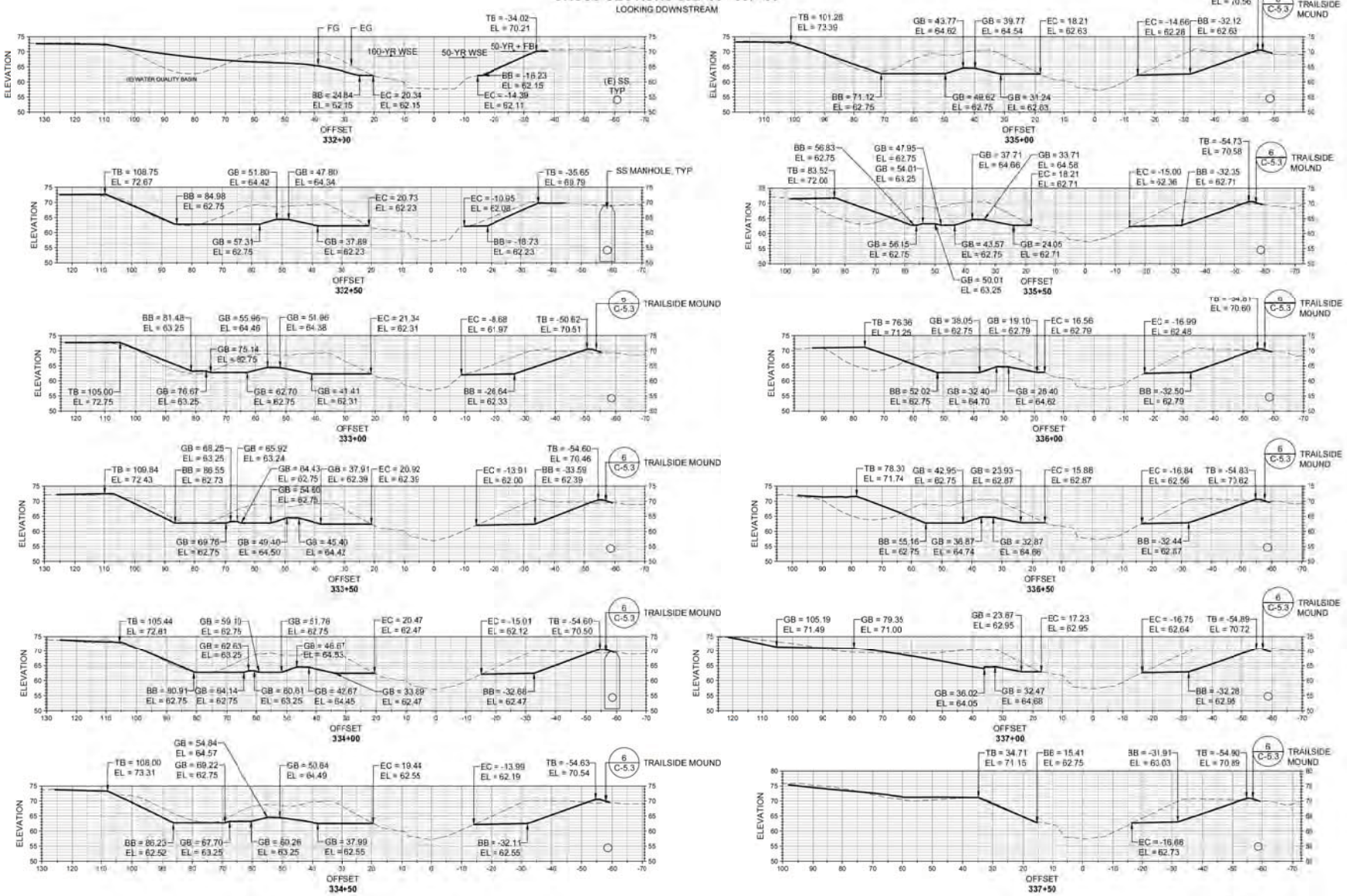
ENLARGEMENTS

SHEET

C-2.10

CROSS SECTIONS 332+00 - 337+50

LOOKING DOWNSTREAM



REVISIONS	
DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

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2332 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2799 F 510.644.2799
www.restorationdesigngroup.com

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SCALE: 1/16" = 1'-0"

DATE: MAY 8, 2019

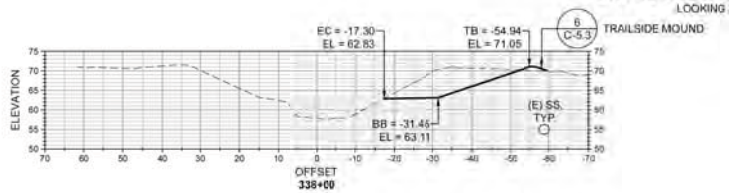
SECTIONS 332+00 - 337+50

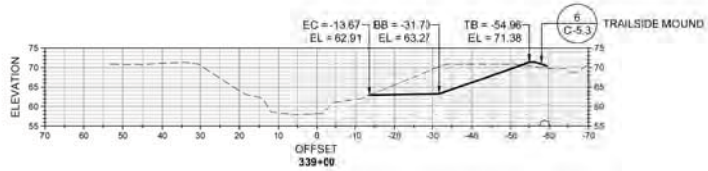
SHEET

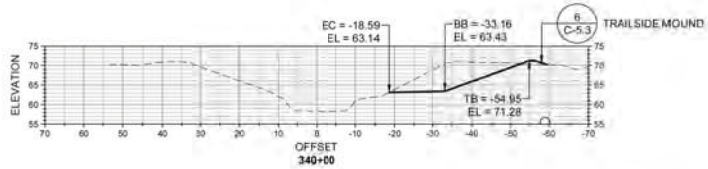
C-3.1

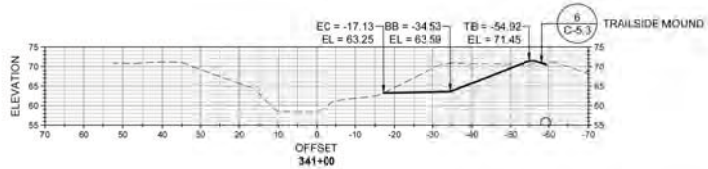
CROSS SECTIONS 338+00 - 349+00

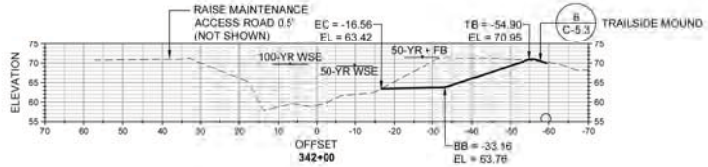
LOOKING DOWNSTREAM

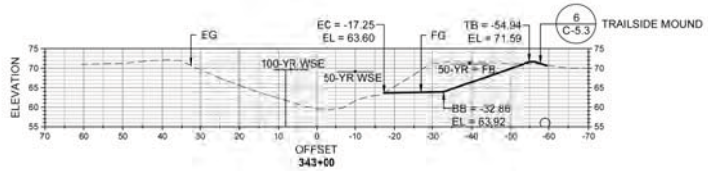


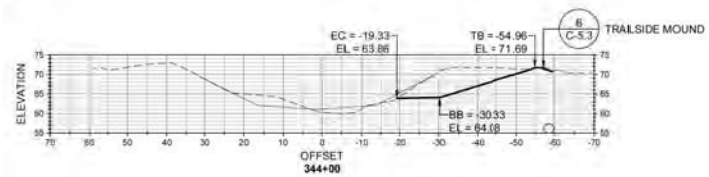


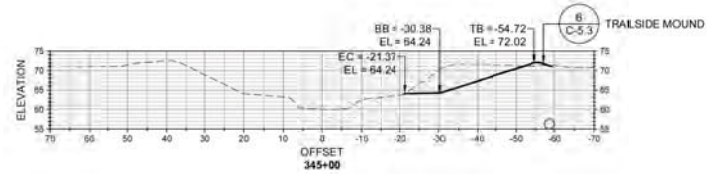


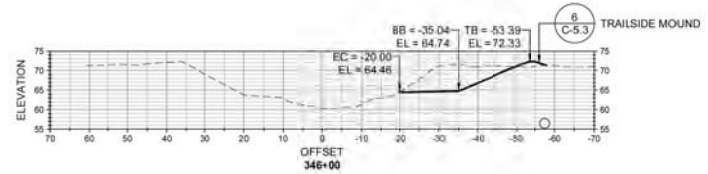


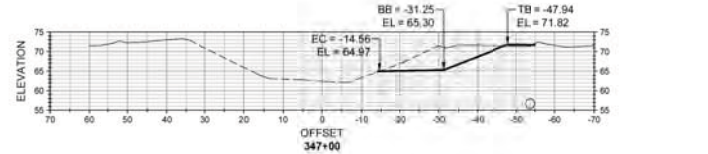


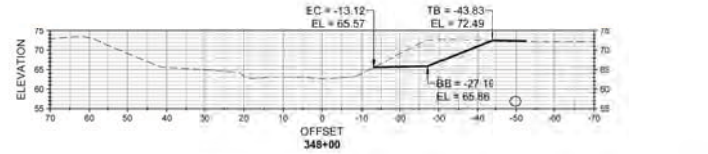












NOTE
ADD. BID NO. 2 FROM STATION 349+00 - 356+00

LEGEND

	EXISTING GRADE (EG)
	FINISH GRADE (FG)
TB = XX.XX	INTERCEPT STATION
EL = XX.XX	ELEVATION

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER
MATTHEW J. TIMMER
C 79249
CIVIL
STATE OF CALIFORNIA

100% SET

Restoration Design Group, Inc.
2332 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2799 F 510.644.2799
www.restorationdesigngroup.com

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CHECKED BY: AS / ES / MT

SCALE: 1/16" = 1'-0"

DATE: MAY 8, 2019

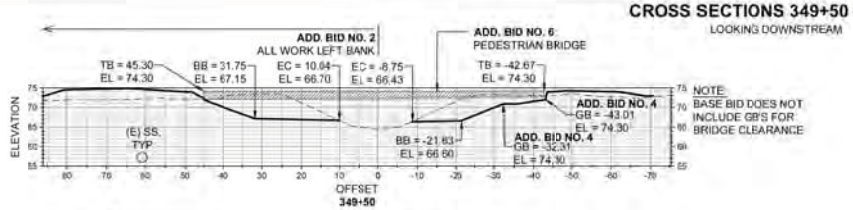
SECTIONS 338+00 - 349+00

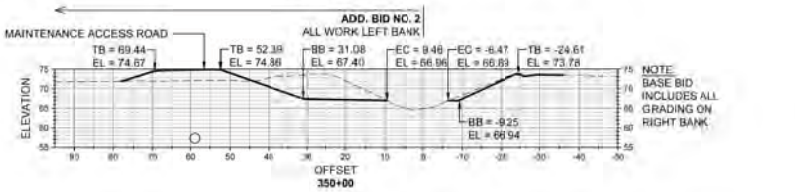
SHEET

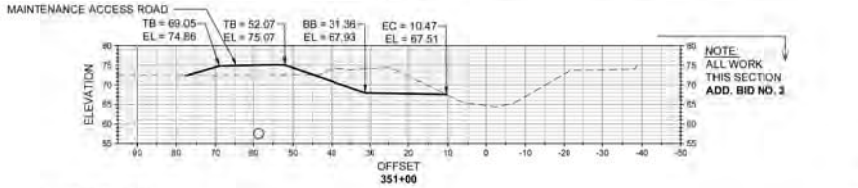
C-3.2

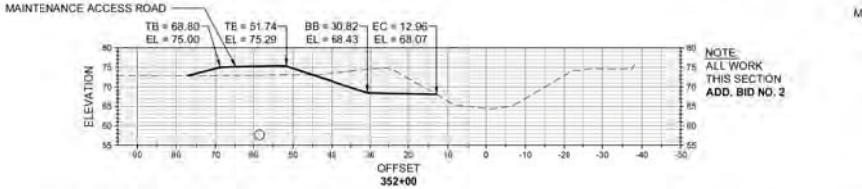
CROSS SECTIONS 349+50 - 359+00

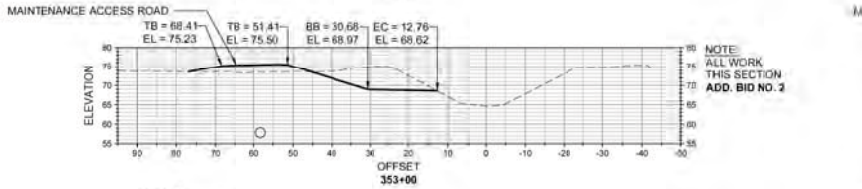
LOOKING DOWNSTREAM

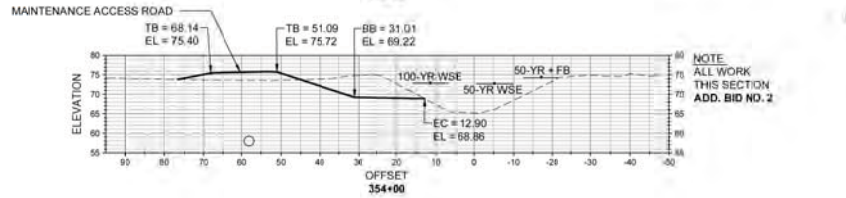


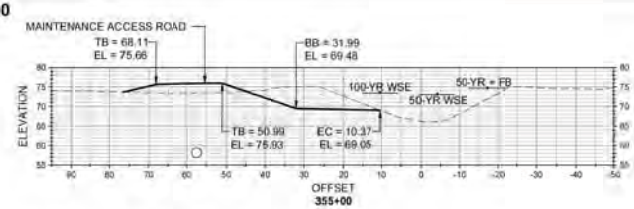


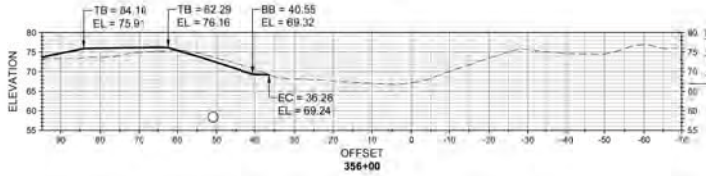


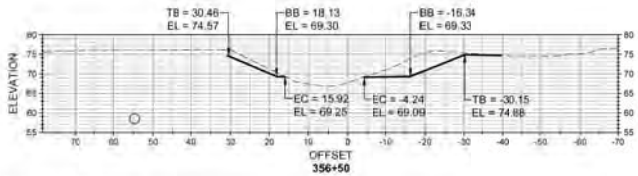


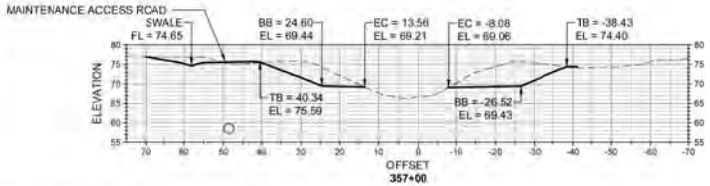


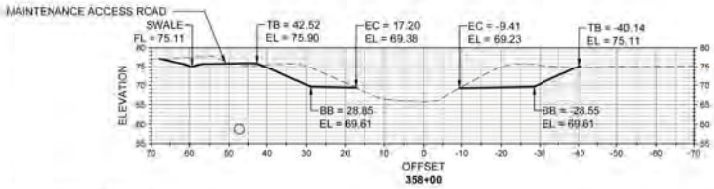


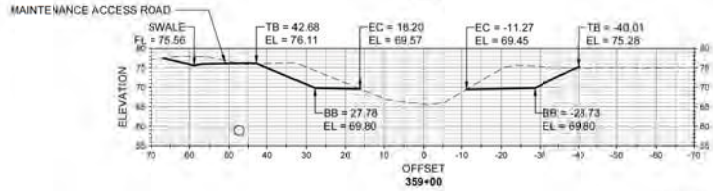












LEGEND

———	EXISTING GRADE (ES)
———	FINISH GRADE (FG)
TB = XXX.XX	OFFSET STATION
EL = XX.XX	ELEVATION

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER MATTHEW J. TIMMER C 79249 CIVIL STATE OF CALIFORNIA

100% SET

Restoration Design Group, Inc.
2332 10th Street, Suite C
Berkeley, CA 94710
T 510.644.2799 F 510.644.2799
www.restorationdesigngroup.com

DESIGN BY: ES / MT

DRAWN BY: ES / IS / KB / PR

CHECKED BY: AS / ES / MT

SCALE: 1/16" = 1'-0"

DATE: MAY 8, 2019

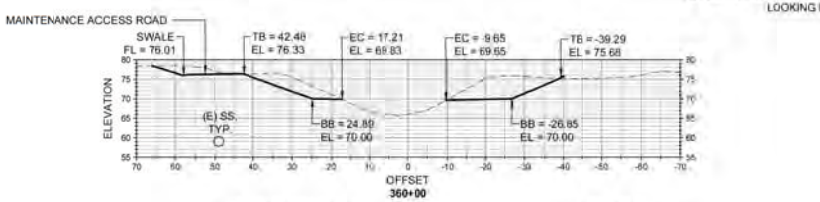
SECTIONS 349+50 - 359+00

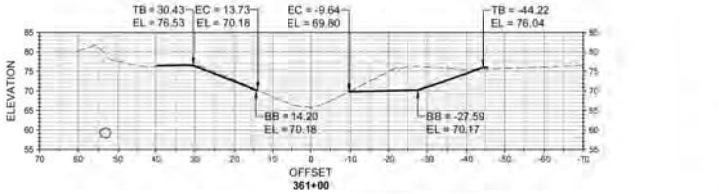
SHEET

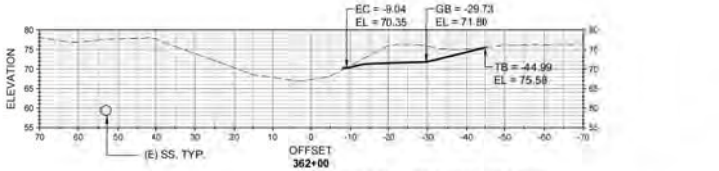
C-3.3

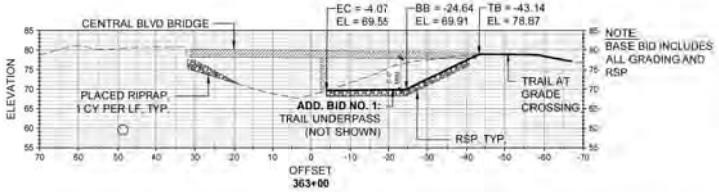
CROSS SECTIONS 360+00 - 368+00

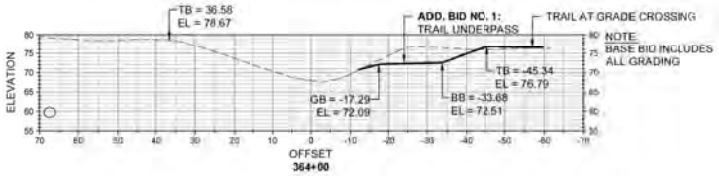
LOOKING DOWNSTREAM

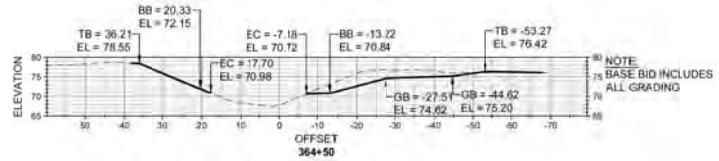


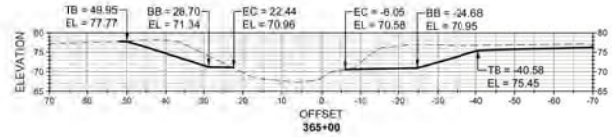


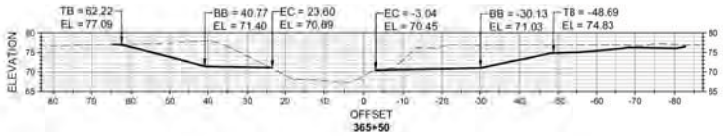


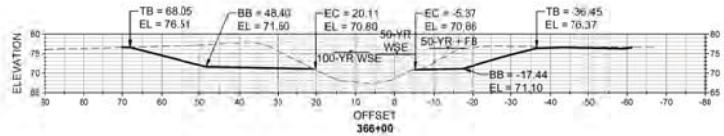


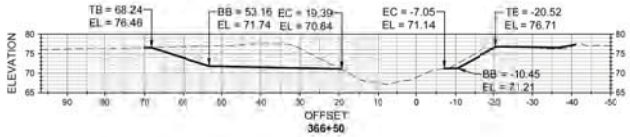


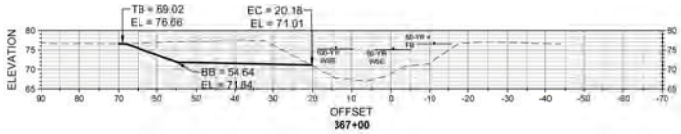


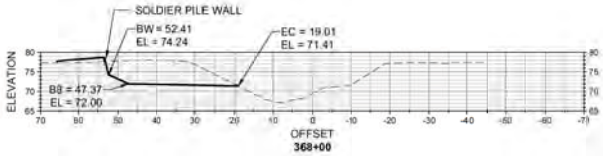












LEGEND

	EXISTING GRADE (EG)
	FINISH GRADE (FG)
TB = XXX.XX	OFFSET STATION
EL = XX.XX	ELEVATION

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER
MATTHEW J. TIMMER
C 79249
CIVIL
STATE OF CALIFORNIA

100% SET

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SCALE: 1/16" = 1'-0"

DATE: MAY 8, 2019

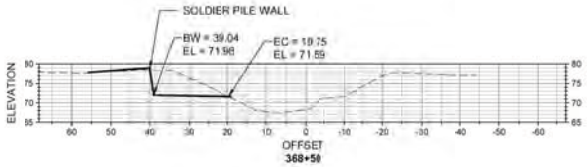
SECTIONS 360+00 - 368+00

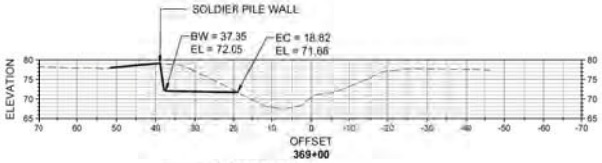
SHEET

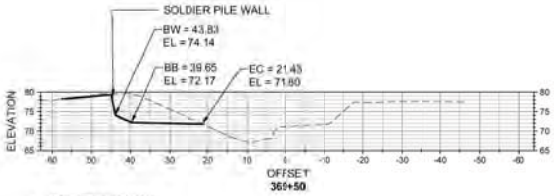
C-3.4

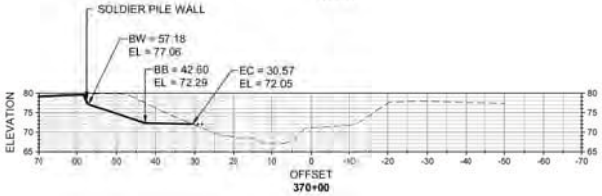
CROSS SECTIONS 368+50 - 370+50

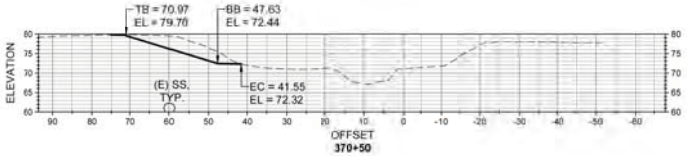
LOOKING DOWNSTREAM











LEGEND

	EXISTING GRADE (EG)
	FINISH GRADE (FG)
18+ XXX.XX	OFFSET STATION
EL = XX.XX	ELEVATION

REVISIONS

DATE	DESCRIPTION

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LICENSED PROFESSIONAL ENGINEER
MATTHEW T. TUMAMBAG
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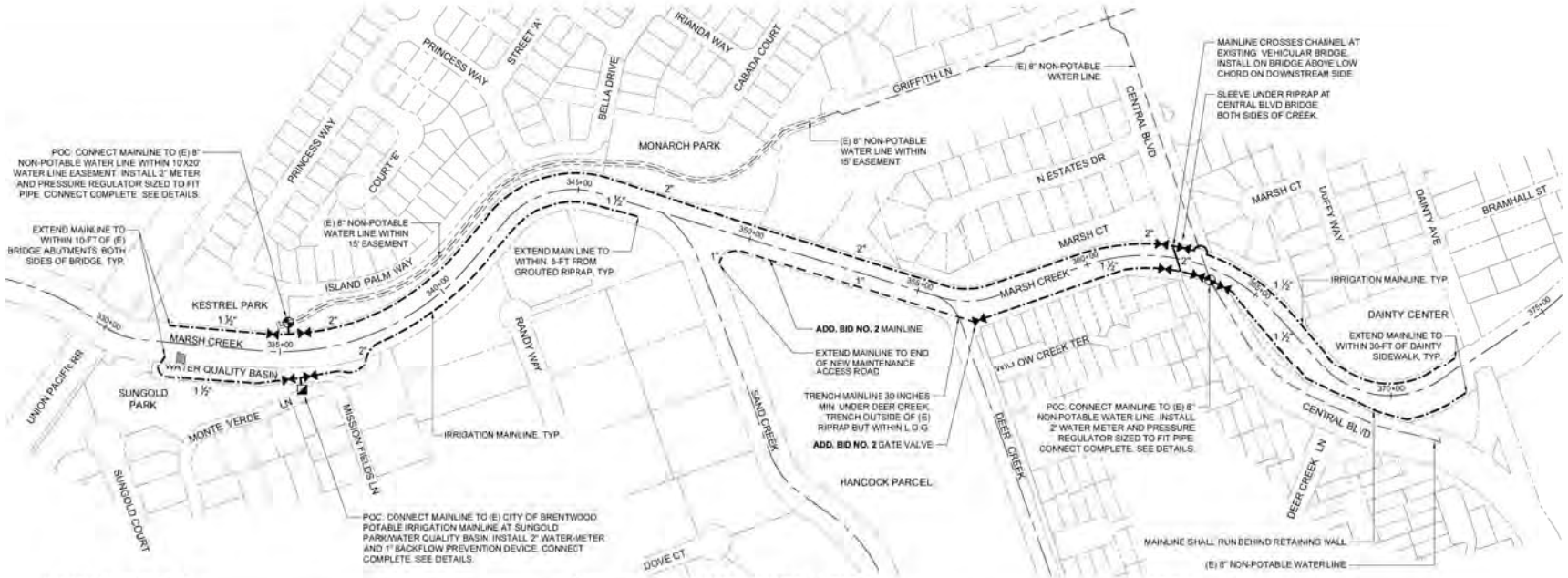
SECTIONS 368+50 - 370+50

SHEET

C-3.5



IRRIGATION NOTES

1. THIS DESIGN IS DIAGRAMMATIC. ALL PIPES, VALVES, ETC. SHOWN ARE FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN PLANTING AREAS WHERE POSSIBLE. AVOID CONFLICTS WITH PLANTING, PIPING, UTILITIES AND STRUCTURES WHERE POSSIBLE.
2. IRRIGATION EQUIPMENT SHALL BE INSTALLED WITHIN THE LIMIT OF GRADE UNLESS OTHERWISE APPROVED BY THE OWNER IN WRITING. MAINLINE SHALL BE INSTALLED 2 FEET FROM EDGE OF TRAIL SHOULDER ON THE INSIDE (CREEK) SIDE OF THE TRAILS UNLESS OTHERWISE NOTED ON THE PLANS.
3. DO NOT WILLFULLY INSTALL THE SYSTEMS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS, GRADE DIFFERENCES, GPM AVAILABILITY, OR PRESSURES EXIST THAT MAY NOT HAVE BEEN INCLUDED IN THE ENGINEERING. SUCH OBSTRUCTIONS OR DIFFERENCES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE O.R. FOR A DECISION. IN THE EVENT THAT NOTIFICATION IS NOT PERFORMED, THE IRRIGATION CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ANY REVISIONS NECESSARY.
4. SUBMIT A SLEEVING PLAN TO THE O.R. PRIOR TO PAVING AND ANY TRENCHING. SEE LAYOUT PLANS FOR SCHEMATIC LOCATION OF SLEEVES. SEE DETAILS.
5. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE THEMSELVES WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, RETAINING WALLS, UTILITIES, PIPING, BUILDINGS, ETC AND COORDINATE THEIR WORK WITH THE GENERAL CONTRACTOR FOR THE INSTALLATION OF PIPE SLEEVES THROUGH WALLS, UNDER CREEKS, PAVEMENT, RIPRAP, STRUCTURES, ETC.
6. THE IRRIGATION SYSTEM SHALL BE INSTALLED IN CONFORMANCE WITH ALL APPLICABLE STATE AND LOCAL CODES AND ORDINANCES BY A LICENSED LANDSCAPE CONTRACTOR AND EXPERIENCED CREWS. CONTRACTOR TO OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND FEES.
7. CONTRACTOR IS TO CONFIRM THE LOCATION OF EXISTING UTILITIES AND UNDERGROUND STRUCTURES PRIOR TO THE EXCAVATION OF TRENCHES. CONTRACTOR TO REPAIR ANY DAMAGE CAUSED BY, OR DURING THE PERFORMANCE OF, THE WORK AT NO ADDITIONAL COST TO THE CITY.
8. MAINLINE TO BE VISUALLY INSPECTED FOR LEAKS UNDER FULL OPERATING PRESSURE IN THE PRESENCE OF THE O.R. PRIOR TO BACKFILLING. MAINLINE UNDER PAVING TO BE 24" DEEP MIN. SEE DETAILS.
9. FLUSH MAINLINES PRIOR TO THE INSTALLATION OF QUICK COUPLING VALVES.
10. QUICK COUPLERS (NOT SHOWN ON PLANS): 1" NON-POTABLE. PROVIDE **(110)** TOTAL QUICK COUPLERS AT AN APPROXIMATELY 75-FT INTERVAL ALONG ENTIRE MAINLINE. INSTALL IN PURPLE ROUND LOCKING BOX. OWNER'S REPRESENTATIVE SHALL APPROVE LAYOUT PRIOR TO INSTALLATION. SEE DETAILS.
11. CONTRACTOR TO MAKE ADJUSTMENTS TO LAYOUT OF QUICK COUPLERS AT NO EXTRA COST TO THE OWNER IF INSTALLED WITHOUT PRIOR APPROVAL BY O.R.
12. ALL IN-GROUND BOXES SHALL BE INSTALLED FLUSH WITH FINISH GRADE (NOT NECESSARILY PLUMB), ALIGN BOXES PER THE DETAILS.
13. ALL EXCAVATIONS SHALL BE BACKFILLED TO 98% COMPACTION. CONTRACTOR TO REPAIR SETTLED TRENCHES FOR ONE YEAR AFTER COMPLETION OF WORK.
14. CONTRACTOR TO MAINTAIN A SET OF "AS-BUILT" DRAWINGS THROUGHOUT THE COURSE OF CONSTRUCTION AND DELIVER THESE DRAWINGS TO THE OWNER UPON THE COMPLETION OF WORK. THE DRAWINGS SHALL BE LEGIBLE AND IN REPRODUCIBLE FORM.
15. CONTRACTOR SHALL GUARANTEE THE SYSTEM AND MATERIALS TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE YEAR STARTING WITH ACCEPTANCE AT THE FINAL SITE REVIEW.

NON-POTABLE WATER SYSTEM NOTES

1. ALL WORK SHALL CONFORM TO EXISTING DEPARTMENT OF HEALTH SERVICES REGULATIONS.
2. NO CROSS-CONNECTIONS TO THE NON-POTABLE WATER SYSTEM ARE PERMITTED.
3. AT THE POINT OF CONNECTIONS, THE WATER METER SHALL BE INSTALLED UPSTREAM OF THE PRESSURE REGULATOR.
4. **PRESSURE AND FLOW REQUIREMENTS**: THIS IRRIGATION DESIGN IS BASED UPON A STATIC MAINLINE PRESSURE OF 80-120 PSI AT THE P.O.C.'s, 75 PSI AFTER THE WATER METERS, APPROX 25-100 PSI AT THE QUICK COUPLERS, AND A MAX VOLUME OF 50 GPM AT EACH P.O.C. THE CONTRACTOR SHALL SET PRESSURE REGULATORS TO 75 PSI. CONTRACTOR SHALL VERIFY THESE PRESSURES AT QUICK COUPLER VALVES AND INFORM THE O.R. OF ANY DISCREPANCIES.
5. **WATER METERS**: SHALL BE 2" RECLAIMED SENSUS OMNI TURBO (T2) WITH ONE (1) SENSUS 520M SINGLE-PORT FLEXNET DEVICE PER WATER METER. SEE DETAILS FOR SUPPLIER CONTACT INFO.
6. **NON-POTABLE MAINLINES**: PVC 1120 CLASS 1 SCHEDULE 40 PURPLE PLASTIC PIPE WITH SCHEDULE 80 PVC SOLVENT WELD FITTINGS. MANUFACTURER: SIMPSON, PACIFIC WESTERN, ASC, OR APPROVED EQUAL. SEE DETAILS.
7. ALL NON-POTABLE WATER PIPING OTHER THAN PVC PIPING WITH SOLVENT WELDED JOINTS SHALL BE PROTECTED AGAINST MOVEMENT WITH THRUST BLOCKS OR RESTRAINED JOINTS OR OTHER APPROVED METHOD. SEE DETAILS.
8. MAINTAIN A 10 FOOT HORIZONTAL SEPARATION BETWEEN PRESSURIZED NON-POTABLE WATER IRRIGATION PIPING AND POTABLE WATER PIPING UNLESS OTHERWISE NOTED. AT PIPE CROSSINGS, NON-POTABLE WATER IRRIGATION PIPING MUST BE 12 INCHES BELOW POTABLE WATERLINES. IF NON-POTABLE WATER PIPING MUST CROSS OVER POTABLE WATER LINES, THE NON-POTABLE WATER PIPING SHALL BE AT LEAST 12 INCHES ABOVE THE POTABLE LINES AND SHALL BE INSTALLED IN A PVC PIPE SLEEVE WHICH EXTENDS A MINIMUM OF 10 FEET ON EITHER SIDE OF THE POTABLE WATER PIPING.
9. ALL NON-POTABLE WATER SYSTEM QUICK COUPLING VALVES AND PRESSURE-REGULATING VALVES SHALL BE INSTALLED BELOW GRADE IN PURPLE COLORED VALVE BOXES. ALL BOXES SHALL HAVE A WARNING LABEL PERMANENTLY ATTACHED OR AFFIXED ONTO THE LID WITH RIVETS, SCREWS, OR BOLTS.
10. NO HOSE BIBS ARE ALLOWED ON THE NON-POTABLE WATER IRRIGATION SYSTEM.
11. ALL NON-POTABLE WATER METERS, DEVICES, AND VALVES SHALL BE LABELED AS NON-POTABLE.
12. INSTALLATION OF DIRECT INJECTION SYSTEMS ON THE NON-POTABLE WATER IRRIGATION SYSTEM IS NOT PERMITTED.
13. CONSPICUOUS ADVISORY SIGNS MUST BE POSTED AT AN APPROXIMATELY 700-FT INTERVAL ALONG THE ENTIRE MAINLINE TO ENSURE PEOPLE KNOW NON-POTABLE WATER IS BEING USED TO IRRIGATE THE LANDSCAPE AND THIS WATER IS NOT POTABLE. SIGNS SHOULD STATE "NON-POTABLE WATER" AND INCLUDE THE STATEMENT "DO NOT DRINK" IN ENGLISH AND SPANISH. APPROVED SIGNAGE MAY BE PURCHASED FROM THE CITY OF BRENTWOOD WATER DEPARTMENT. SEE DETAILS.

POTABLE WATER SYSTEM NOTES

1. AT THE POINT OF CONNECTION, THE WATER METER SHALL BE INSTALLED UPSTREAM OF THE BACKFLOW PREVENTION DEVICE. SEE DETAILS.
2. **PRESSURE AND FLOW REQUIREMENTS**: THIS IRRIGATION DESIGN IS BASED UPON A STATIC MAINLINE PRESSURE OF 60 PSI AT THE P.O.C., 15-60 PSI AT THE QUICK COUPLERS, AND A MAX VOLUME OF 50 GPM AT THE P.O.C. CONTRACTOR SHALL VERIFY THESE PRESSURES AT QUICK COUPLER VALVES AND INFORM THE O.R. OF ANY DISCREPANCIES.
4. **WATER METER**: SHALL BE 2" SENSUS OMNI TURBO (T2) WITH ONE (1) SENSUS 520M SINGLE-PORT FLEXNET DEVICE. SEE DETAILS FOR SUPPLIER CONTACT INFO.
5. **POTABLE MAINLINE AT SUNGOLD PARK/WATER QUALITY BASIN P.O.C.**: PVC 1120 CLASS 1 SCHEDULE 40 PLASTIC PIPE WITH SCHEDULE 80 PVC SOLVENT WELD FITTINGS. MANUFACTURER: SIMPSON, PACIFIC WESTERN, ASC, OR APPROVED EQUAL. SEE DETAILS.
6. LABEL ALL POTABLE WATER METERS AND ABOVE GROUND POTABLE WATER PIPES/DEVICES (BACKFLOW PREVENTERS, HOSE BIBS, ETC.) WITH TAGS OR LABEL READING: "POTABLE WATER" IN 2 INCH HIGH BLACK LETTERS ON BLUE BACKGROUND.

LEGEND

- PROPERTY BOUNDARY
- IRRIGATION MAINLINE, SIZE AS NOTED. SEE DETAILS.
- IRRIGATION MAINLINE (**ADD. ALT NO. 2**), SIZE AS NOTED. SEE DETAILS.
- NON-POTABLE IRRIGATION POINT OF CONNECTION (POC). CONNECT COMPLETE TO CITY 8" NON-POTABLE WATER MAINLINE. INSTALL WATER METER AND PRESSURE REGULATOR PER THE DETAILS AND MANUFACTURERS' RECOMMENDATIONS.
- POTABLE IRRIGATION POINT OF CONNECTION (POC). CONNECT COMPLETE TO CITY POTABLE WATER MAINLINE. INSTALL WATER METER AND 1" BACKFLOW PREVENTION DEVICE PER THE DETAILS AND THE MANUFACTURERS' RECOMMENDATIONS.
- NIBCO GATE VALVE, MATCH PIPE SIZE. INSTALL IN PURPLE ROUND LOCKING BOX. SEE DETAILS.

0 160 320 FEET

REVISIONS

DATE	DESCRIPTION

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CIVIL SET

LICENSED PROFESSIONAL ENGINEER MATTHEW J. TRUMPE C 79249 CIVIL STATE OF CALIFORNIA

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SCALE: 1" = 160'-0"
DATE: MAY 8, 2019

IRRIGATION

SHEET:
C-4.1

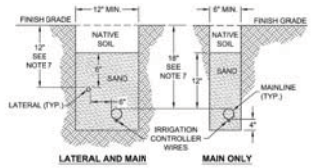
ITEM	MANUFACTURER/MODEL (OR APPROVED EQUAL)
BACKFLOW PREVENTER	FEBCO 825Y-BV
GATE VALVE	NIBCO 619 RW
BALL VALVE	BRASS OR SCH 80 PVC TRUE UNION TYPE
QUICK COUPLING VALVE	44 RLC (RECLAIMED WATER USE), RAINBIRD 44NP 1"
PRESSURE REDUCING VALVE	WILKINS
REMOTE CONTROL VALVE	RAINBIRD PEB SERIES OR EFB-CP SERIES
VALVE BOXES IN PLANTING AREAS WITH STAINLESS STEEL LOCK-DOWN BOLTS	BROOKS 1419-12
GATE & QC VALVE BOX W/ STAINLESS STEEL LOCK-DOWN BOLTS	BROOKS 10" ROUND (# 1100 OR # 910)
VALVE BOXES IN PAVED AREAS	CHRISTY, B8X WITH C.I. TRAFFIC LID
CONTROLLER	MAXICOM COMPONENT RAINMASTER EVOLUTION (ETS ASSEMBLY)
CONTROLLER ENCLOSURE	TOP ENTRY STRONG BOX -SS
BACKFLOW ENCLOSURE	LEMEUR, GUARD SHACK CGS SERIES OR STRONGBOX (STAINLESS STEEL)
SHRUB STREAM ROTOR	RAINBIRD
POP-UP STREAM ROTOR	RAINBIRD OR TORO
GEAR DRIVEN ROTATOR	HUNTER OR TORO
LAWN POP-UP SPRAY	RAINBIRD 1800 (PRS) OR TORO 6" POP-UP
SHRUB POP-UP SPRAY	RAINBIRD 1800 (PRS) OR TORO 6" & 12" POP-UP
BUBBLER	TORO 570 ZPRX

(Not To Scale)

PUBLIC WORKS DEPARTMENT — THE CITY OF BRENTWOOD

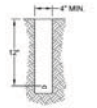
IRRIGATION EQUIPMENT LIST

DATE: JUNE 26, 2007 — REVISED: DEC. 31, 2013 — SHEET No. I-1



NOTES:

1. INSTALL 3' WIDE DETECTABLE WARNING TAPE 12" MIN ABOVE MAINLINE.
2. SALVAGED EXCAVATED FILL COMPACTED TO ORIGINAL DENSITY IN LANDSCAPED AREAS ONLY; ALL OTHER AREAS SHALL BE AT 95% COMPACTION AND AT 2% OPTIMUM MOISTURE.
3. FOR ANY PIPE UNDER PAVEMENT, SEE ST-25.
4. THE pH VALUE OF ALL BACKFILL MATERIAL SHALL BE TESTED TO BE BETTER THAN 7.0 TO 7.5 [illegible]
5. IRRIGATION CONTROLLER WIRES SHALL BE INSTALLED UNDER MAIN LINE AS SHOWN.



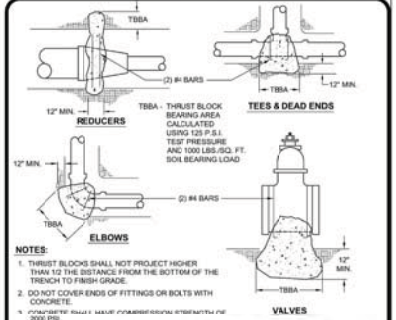
LATERAL ONLY

(Not To Scale)

PUBLIC WORKS DEPARTMENT — THE CITY OF BRENTWOOD

IRRIGATION SYSTEM TRENCHING

DATE: JUNE 26, 2007 — REVISED: DEC. 31, 2013 — SHEET No. I-2



NOTES:

1. THRUST BLOCKS SHALL NOT PROJECT HIGHER THAN 1/2 THE DISTANCE FROM THE BOTTOM OF THE TRENCH TO FINISH GRADE.
2. DO NOT COVER ENDS OF FITTINGS OR BOLTS WITH CONCRETE.
3. CONCRETE SHALL HAVE COMPRESSION STRENGTH OF 2000 PSI.
4. CONSULT MANUFACTURER'S LITERATURE FOR RECOMMENDED THRUST BEARING AREA (TBBA) BASED ON ACTUAL FIELD CONDITIONS...AT MINIMUM, TBBA SHALL BE SIZED AS FOLLOWS:

PIPE SIZE	90-DEGREE ELLS	45-DEGREE ELLS	VALVES, TEES REDUCERS, DEAD ENDS
4"	1.5 SQ. FT.	1.0 SQ.FT	1.0 SQ. FT.*
6"	3.5 SQ. FT.	0.5 SQ. FT	2.5 SQ. FT.*
8"	6.3 SQ. FT.	4.8 SQ. FT	4.5 SQ. FT.*

* OR AS DESIGNED BY THE ENGINEER

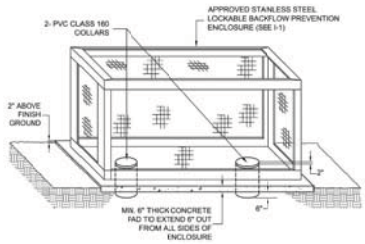
(Not To Scale)

PUBLIC WORKS DEPARTMENT — THE CITY OF BRENTWOOD

IRRIGATION SYSTEM THRUST BLOCKING

DATE: [illegible] — REVISED: [illegible] — SHEET No. I-4

City of Brentwood
Standard Plans and Specifications



NOTES:

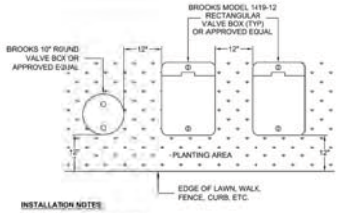
1. ON SLOPES, PADS SHALL BE OF SUFFICIENT THICKNESS TO EXTEND 3" BELOW THE LOWEST POINT OF THE FINISH GRADE.
2. EMBED CORNER HOLD-DOWN ASSEMBLIES IN CONCRETE EQUIPMENT PAD PER MANUFACTURER'S SPECIFICATIONS.
3. SIZE ENCLOSURE TO PROVIDE A MINIMUM OF 6" CLEARANCE BETWEEN BACKFLOW DEVICE AND ENCLOSURE.

(Not To Scale)

PUBLIC WORKS DEPARTMENT — THE CITY OF BRENTWOOD

BACKFLOW PREVENTER ENCLOSURE

DATE: [illegible] — REVISED: [illegible] — SHEET No. I-5



INSTALLATION NOTES:

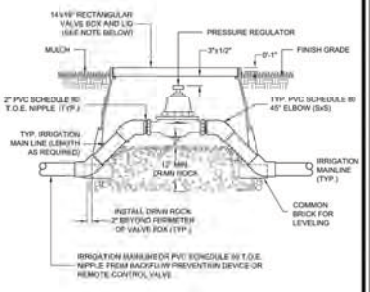
1. CENTER BOXES OVER VALVES.
2. SET BOXES IN GROUND COVER/SHRUB ARE WHERE POSSIBLE.
3. SET BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO EDGE.
4. AVOID HEAVILY COMPACTING SOIL AROUND BOXES TO PREVENT DAMAGING VALVE BOXES.
5. TAG VALVES WITH STATION NUMBERS.
6. HEAT BRAND STATION NUMBER TO LID CONTROL VALVE COVER WITH 1½" LETTERS.
7. INSTALL STAINLESS STEEL BOLTS IN LOCKING COVER.
8. WHEN USED AS RECLAIMED WATER, LIDS SHALL BE COLOR-CODED PURPLE.
9. FOR ALL VALVES 1½" AND LARGER, JUMBO BOX SHALL BE USED.

(Not To Scale)

PUBLIC WORKS DEPARTMENT — THE CITY OF BRENTWOOD

IRRIGATION VALVE BOX INSTALLATION

DATE: APR. 26, 2007 — REVISED: DEC. 31, 2013 — SHEET No. I-11



NOTE:

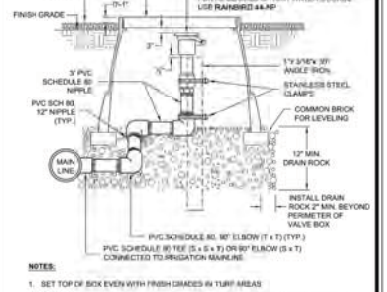
SET TOP OF BOX FLUSH WITH FINISH GRADE IN TURF AREAS.

(Not To Scale)

PUBLIC WORKS DEPARTMENT — THE CITY OF BRENTWOOD

PRESSURE REGULATOR

DATE: JULY 11, 2007 — REVISED: DEC. 31, 2013 — SHEET No. I-13



NOTES:

1. SET TOP OF BOX EVEN WITH FINISH GRADES IN TURF AREAS.
2. VALVE BOX LIDS SHALL BE TAGGED AND HEAT BRANDED WITH STATION NUMBERS.
3. INSTALL STAINLESS STEEL BOLT IN LOCKING COVER.
4. WHEN USED WITH RECLAIMED WATER, DESIGNATE PURPLE COLOR-CODING ON APPROPRIATE APPURTENANCE.

(Not To Scale)

PUBLIC WORKS DEPARTMENT — THE CITY OF BRENTWOOD

QUICK COUPLING VALVE

DATE: JULY 11, 2007 — REVISED: DEC. 31, 2013 — SHEET No. I-15

NOTES:

1. ALL SIGNS MUST BE STAMPED "PROPERTY OF THE CITY OF BRENTWOOD", AND DATED.
2. LETTER STYLE, CITY LOGO, AND BORDER COLOR ARE REFLECTIVE WHITE AGAINST PURPLE REFLECTIVE SHEETING.
3. ½" WHITE BORDER OFFSET ¼" FROM EDGE OF SIGN.
4. ONE SIGN REQUIRED AT EACH ENTRANCE AND AT LEAST EVERY 100 FEET WHERE NON-POTABLE WATER IS USED.
5. ALL FONTS ARE HIGHWAY GOTHIC "B". FONT SIZES ARE 0.75" (¾"), 0.60" (⅝"), OR 0.25" (¼") UPPER AND LOWER CASE.

(Not To Scale)

PUBLIC WORKS DEPARTMENT — THE CITY OF BRENTWOOD

NON-POTABLE WATER SIGNAGE

DATE: [illegible] — REVISED: [illegible] — SHEET No. I-23

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER — MATTHEW J. TIMMONS — C 79249 — CIVIL — STATE OF CALIFORNIA

100% SET

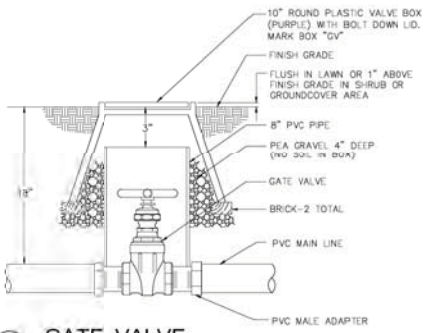
Resource Design Group, Inc.
2310 Pine Street, Suite C
Berkeley, CA 94710
T 510.644.2789 F 510.644.2799
www.resourcedesigngroup.com

DRAWN BY: ES / MT
DESIGNED BY: ES / IS / KB / PR
CHECKED BY: AS / ES / MT
SCALE: AS NOTED
DATE: MAY 8, 2019

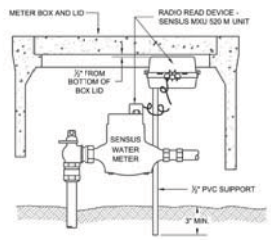
IRRIGATION DETAILS

SHEET

C-4.2



1 GATE VALVE
SCALE: NTS



NOTES:

1. SENSUS WATER METER (REGISTERING IN GALLONS) AND MXU 520 M UNIT ARE AVAILABLE FROM "GOLDEN STATE FLOW MEASUREMENT", 4821 GOLDEN FOOTHILL PARKWAY, SUITE 100 EL DORADO HILLS, CA 95762; PHONE (916) 933-9554.
2. NO SUBSTITUTION IS ALLOWED ON THE SENSUS WATER METER AND THE MXU UNIT.
3. THE MXU UNIT SHALL BE INSTALLED NEXT TO THE METER.
4. EXCESS WIRE SHOULD BE CONCEALED LOOSELY IN METER BOX.
5. A MINIMUM 2" 3/4" WATER METER SIZE SHALL BE USED FOR A SINGLE FAMILY RESIDENTIAL WITH A YARD. HOWEVER, A MINIMUM 1" METER SIZE SHALL BE INSTALLED IF ONE OF THE FOLLOWING CONDITIONS EXIST:
   - THE MINIMUM STATIC PRESSURE IN THE STREET IS 50 PSI OR LESS DURING THE MORNING PEAK (SUMMER MONTHS), OR
   - THE LOT SIZE IS 7,000 SQ. FT. OR GREATER, OR
   - FIRE SPRINKLERS ARE INSTALLED.
6. SEE STANDARD PLAN W-6a FOR ADDITIONAL WATER SERVICE NOTES AND TYPICAL LAYOUT.

(Not To Scale)

PUBLIC WORKS DEPARTMENT — BRENTWOOD

STANDARD METER INSTALLATION

DATE: APR. 17, 2006 | REVISED: DEC. 31, 2013 | SHEET No. W-6

WATER SERVICE NOTES:

1. WATER METERS SHALL BE SENSUS WITH SENSUS MXU 505 UNIT.
2. METERS SHALL BE INSTALLED CENTERED IN THE METER BOX.
3. METER TO BE SET AT TIME OF PLUMBING EXTENSION TO BUILDING.
4. METER BOX SHALL BE FREE FROM DEBRIS, DIRT AND LITTER.
5. IRRIGATION SERVICE AND/OR WELL ONSITE REQUIRES BACKFLOW PREVENTION DEVICE BEHIND METER.
6. INSTALL CATHODIC PROTECTION PER CP-12.
7. ALL NON-POTABLE APPLICATIONS SHALL BE COLOR-CODED PURPLE.
8. ALL BOLTS SHALL BE STAINLESS STEEL.
9. FOR WATER SERVICE STANDARDS, REFER TO W-5 AND W-7; FOR STANDARD METER INSTALLATION, REFER TO W-6.
10. ALL NON-POTABLE APPLICATIONS REQUIRE A PERMIT TO USE NON-POTABLE WATER ISSUED BY THE PUBLIC WORKS/OPERATIONS DIVISION.

TYPICAL LAYOUT

(Not To Scale)

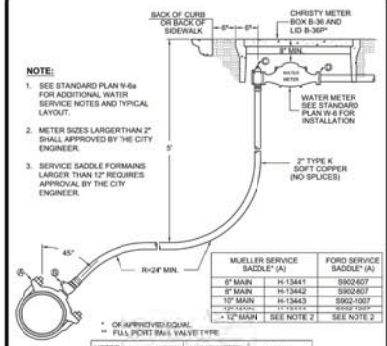
PUBLIC WORKS DEPARTMENT — BRENTWOOD

WATER SERVICE NOTES

DATE: JUNE 30, 2003 | REVISED: DEC. 31, 2013 | SHEET No. W-6a

NOTE:

1. SEE STANDARD PLAN W-6a FOR ADDITIONAL WATER SERVICE NOTES AND TYPICAL LAYOUT.
2. METER SIZES LARGER THAN 2" SHALL APPROVED BY THE CITY ENGINEER.
3. SERVICE SADDLE FORMAINS LARGER THAN 12" REQUIRES APPROVAL BY THE CITY ENGINEER.



MUELLER SERVICE SADDLE* (A)		FORD SERVICE SADDLE* (A)
6" MAIN	H-13441	S902-607
8" MAIN	H-13442	S902-807
10" MAIN	H-13443	S902-1007
12" MAIN	SEE NOTE 2	SEE NOTE 2

* OR APPROVED EQUAL
** FULL PORT BALL VALVE TYPE

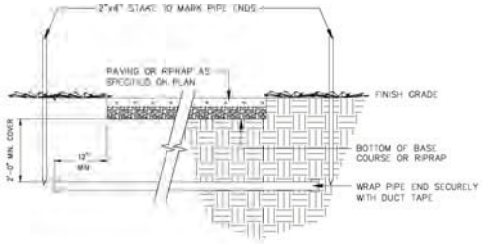
	METER SIZE	CORPORATION "STOP"** (C)*	ANGLE METER "STOP"** (E)*	METER COUPLING* (D)
MUELLER	1-½"	2" B-25509	2" B-24276	1-½" FLANGE
	2"			2" FLANGE
FORD	1-½"	FB1000-7-Q-NL	BFA43-777W-0-NL	CF31-66-NL
	2"			CF31-77-NL

(Not To Scale)

PUBLIC WORKS DEPARTMENT — BRENTWOOD

LARGE DIAMETER WATER SERVICE

DATE: JUNE 30, 2003 | REVISED: DEC. 31, 2013 | SHEET No. W-7

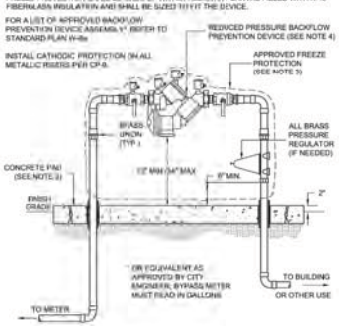


NOTES:
1. SLEEVE PIPES ARE SCHEDULE 40 PVC UNLESS OTHERWISE SPECIFIED.
2. INSERT #4 REBAR SECTION OR OTHER METAL OBJECT INSIDE PIPE END PRIOR TO TAPING TO FACILITATE FUTURE FINDINGS OF SLEEVE WITH METAL DETECTOR. REMOVE REBAR PRIOR TO USING SLEEVE.

2 IRRIGATION SLEEVING
SCALE: NTS

NOTES:

1. ALL FITTINGS, INCLUDING PRESSURE REDUCER, SHALL BE BRASS.
2. WHEN REQUIRED BY CITY, PROVIDE CONCRETE PAD AND ENCLOSURE PER STANDARD PLAN 15.
3. FREEZE PROTECTION SHALL BE MADE OF WATER RESISTANT CANVAS FILLED WITH R-19 FIBERGLASS INSULATION AND SHALL BE SIZED TO FIT THE DEVICE.
4. FOR A LIST OF APPROVED BACKFLOW PREVENTION DEVICE ASSEMBLY, REFER TO STANDARD PLAN W-8a
5. INSTALL CATHODIC PROTECTION ON ALL METALLIC RISERS PER CP-9.



(Not To Scale)

PUBLIC WORKS DEPARTMENT — BRENTWOOD

BACKFLOW PREVENTION DEVICE - UNDER 3" MAIN LINE

DATE: DEC. 1, 2007 | REVISED: DEC. 31, 2013 | SHEET No. W-8

APPROVED REDUCED PRESSURE PRINCIPLE DEVICES

MAKE*	MODEL*	SIZE
FEBCO	825-Y	3/4" - 2"
	825-YA	3/4" - 2"
	825-YD	2-1/2" - 10"
	850	2-1/2" - 10"
	860	2-1/2" - 10"
	876V	2-1/2" - 10"
	976 & 880	ALL
WATTS	009	3/4" - 2"
	773	ALL
	909	2-1/2" - 10"
	909	3/4" - 2"
WILKINS	475	4" - 8"
	950 & 975XL	3/4" - 2"
	975	2-1/2" - 10"
	350 (SERIES)	2-1/2" - 8"
	375 (SERIES)	2-1/2" - 8"

* OR EQUIVALENT AS APPROVED BY CITY ENGINEER

APPROVED DOUBLE CHECK DETECTOR ASSEMBLIES FOR FIRE LINES
(BYPASS METER MUST READ IN GALLONS)

MAKE*	MODEL*	SIZE
FEBCO	805-YD	ALL
	806-YD	ALL
	856	ALL
	876V	ALL
WATTS	709-DDC	ALL
WILKINS	450-DA	ALL
	950-DA	ALL
	350-DA	ALL

APPROVED REDUCED PRESSURE PRINCIPLE DETECTOR ASSEMBLIES
(USED WHEN ANTIFREEZE IS USED IN FIRE LINES. BYPASS METER MUST READ IN GALLONS)

MAKE*	MODEL*	SIZE
FEBCO	825-YD	ALL
	860	ALL
	876V	ALL
WATTS	909	ALL
	860 RPDA	ALL
	475-DA	ALL
WILKINS	975-DA	ALL
	375-DA	ALL

NOTE:

FOR THE BACKFLOW PREVENTION DEVICE STANDARD DETAILS, SEE W-8 AND W-9; FOR THE FIRE PROTECTION ASSEMBLY, SEE W-4.

(Not To Scale)

PUBLIC WORKS DEPARTMENT — BRENTWOOD

BACKFLOW PREVENTION DEVICE - ASSEMBLY LIST

DATE: DEC. 1, 2007 | REVISED: DEC. 31, 2013 | SHEET No. W-8a

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT
CIVIL SET

LICENSED PROFESSIONAL ENGINEER — MATTHEW T. TIMMER — C 79249 — CIVIL — STATE OF CALIFORNIA

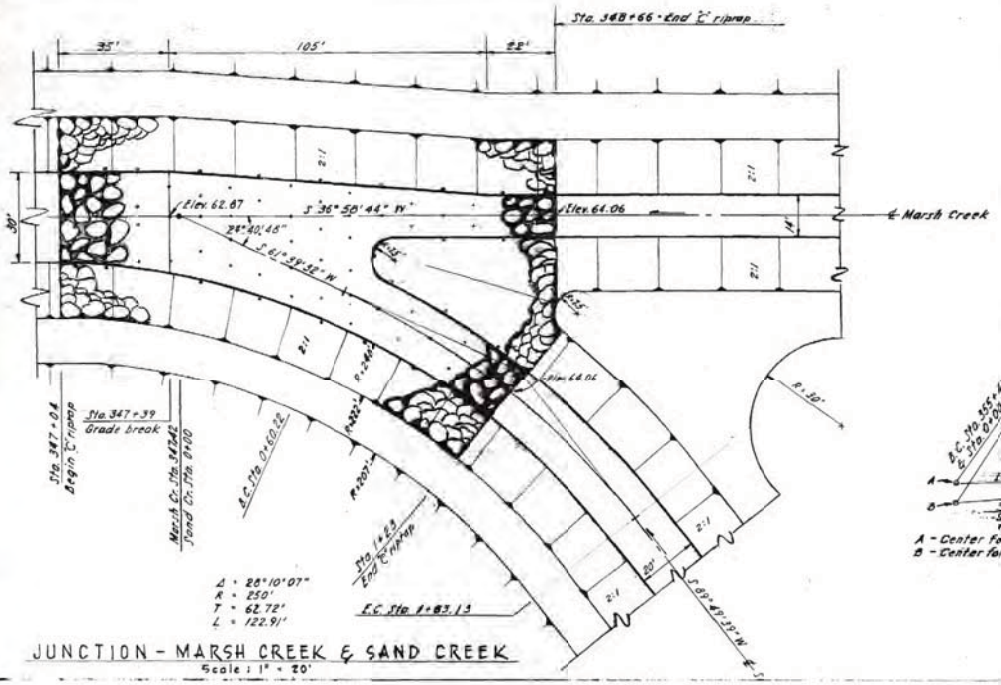
100% SET

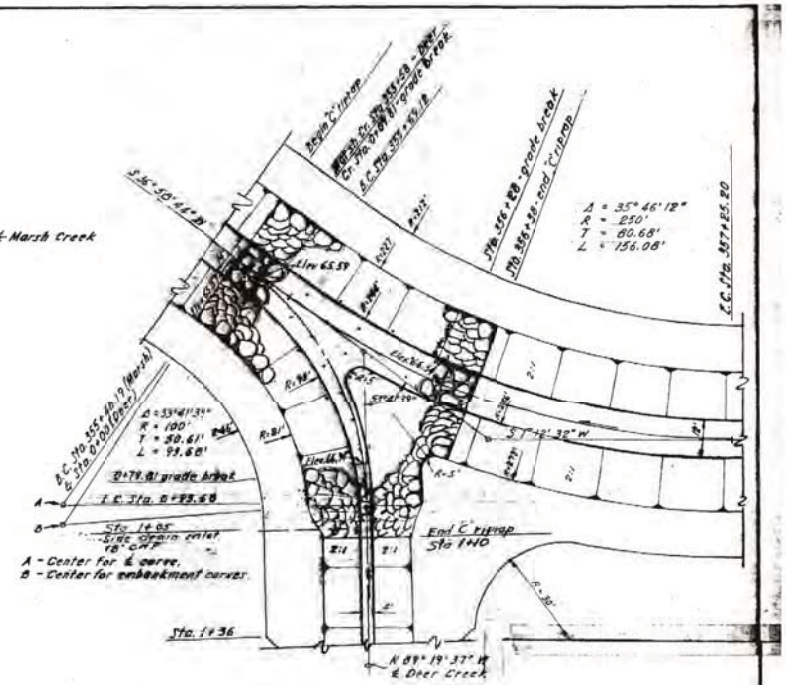
Resource Design Group, Inc.
2333 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2798 F 510.644.2799
www.resourcedesigngroup.com

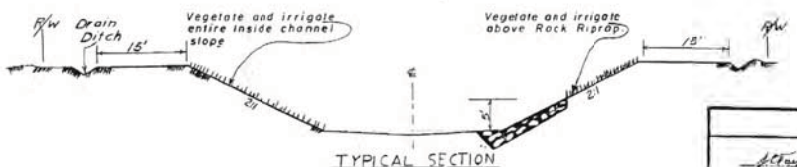
DRAWN BY: ES / MT
DESIGNED BY: ES / IS / KB / PR
CHECKED BY: AS / ES / MT
SCALE: AS NOTED
DATE: MAY 8, 2019

IRRIGATION DETAILS

SHEET
C-4.3







TYPICAL SECTION
VEGETATIVE WORK
Scale = 1" = 10'

MICROFILMED

AS-BUILT	
J. Taylor	7-26-68 DATE
John C. Dalton, PROJECT ENGINEER, SOIL CONSERVATION SERVICE	SEP 11 1967 DATE
Frank Tillman, STATE CONSERVATION ENGINEER, SOIL CONSERVATION SERVICE	12-13-68 DATE

MARSH KELLOGG WATERSHED
JUNCTIONS AND VEGETATIVE DETAILS
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed	J. MS, MS, MC	Date 11-64	Approved by John C. Dalton, Project Engineer
Drawn	T. DS	8-65	Title
Traced			Date
Checked	JCD	11-65	Sheet No. 23 of 29 — Drawing No. 7E-18102

D-2255
Form SCS-313 (November 1965)

REVISIONS	
DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT
CIVIL SET

LICENSED PROFESSIONAL ENGINEER — MATTHEW J. THOMAS — C 79249 — CIVIL — STATE OF CALIFORNIA

100% SET

Restoration Design Group, Inc.
2332 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2798 F 510.644.2799
www.restorationdesigngroup.com

DESIGN BY	ES / MT
DRAWN BY	ES / IS / KB / PR
CHECKED BY	AS / ES / MT
SCALE	AS NOTED
DATE	MAY 8, 2019

AS-BUILTS

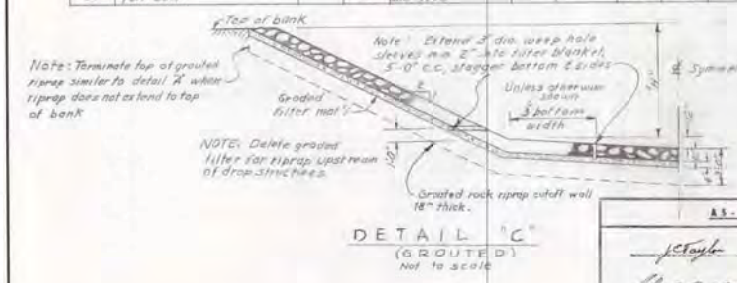
SHEET
C-5.0

SAND CREEK

DETAIL	DESCRIPTION	TYPE LOOSE	TYPE GROUTED	LOCATION & LIMITS	HEIGHT "H"	CUTOFF LOCATION	BID ITEM	QUANTITY ROCK	QUANTITY GROUT	QUANTITY FILTER
A	Channel protection (toe side and bott) dn strm of transition	V		Sta 22+15 to Sta 22+35	8'-6"	22+15	668	Cu yds 71.3	Cu yds 0	Sq yds 11.3
C	Channel protection in transition		V	Sta 22+35 to Sta 22+32.25	See Sht #32	22+35	6789	28.4	11.4	11.5
C	Channel protection in transition		V	Sta 23+27.75 to Sta 23+49	See Sht #33	23+49	6789	38.3	15.3	15.9
A	Channel protection (toe side and bott) upstrm of trans.	V		Sta 23+49 to Sta 23+69	10'-6"	—	668	79.3	0	15.7
A	Channel protection (Each side and Bottom)	V		Sta 37+25 to Sta 37+45	8'-0"	37+25	668	68.1	0	10.4
C	Channel protection (each side & bott) dnstrm of drop		V	Sta 37+45 to Sta 37+70	8'-0"	37+45	6789	57.8	23.1	49.1
C	Channel protection (full section) upstrm of drop		V	Sta 37+92 to See Sht 34	Top Bnk 87'Av	See Sht 34	7789	34.8	13.7	0
A	Channel protection (toe side and bott) dnstrm of bridge	V		Sta 54+43 to Sta 54+73 Sht. 40	8'6"	54+43	668	106.2	0	37.1
C	Channel protection (full section) upstream of drop		V	Sta 56+06.75 to See Sht. 40	Top Bnk 80'Av	See Sht 40	7789	37.8	15.1	0
A	Channel protection (Each side and Bot Pan)	V		Sta 74+36 to Sta 74+56	8'-0"	74+36	668	68.1	0	10.4
C	Channel protection (toe side & bottom) dnstrm of drop		V	Sta 74+36 to Sta 74+81	8'-0"	74+56	6789	57.8	23.1	49.1
C	Channel protection (full sect.) upstrm of drop		V	Sta 75+03 to See Sht 37	Top Bnk 10'Av	See Sht. 37	7789	33.9	13.6	0

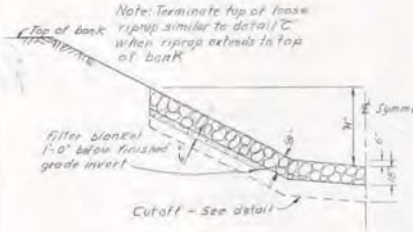
DEER CREEK

A	Channel protection (full sect.) dnstream of culvert	V		Sta 164+04.5 to Sta 164+19.5	Top Bnk 60'Av	164+04.5	668	32.6	0	7.0
C	Channel protection in transition		V	Sta 164+19.5 to Sta 164+26	See Sht. 50	—	6789	3.7	1.5	1.9
C	Channel protection in transition		V	Sta 164+76 to Sta 164+82.5	See Sht. 50	—	6789	3.7	1.5	1.9
A	Channel protection (Full Sect.) upstream of culvert	V		Sta 164+82.5 to Sta 164+98.5	Top Bnk. 54'Av	—	668	17.5	0	4.9
C	Channel protection full Sect		V	Sta 1+00 to Sta 1+16	Top Bnk	1+10	6789	14.1	5.6	5.9

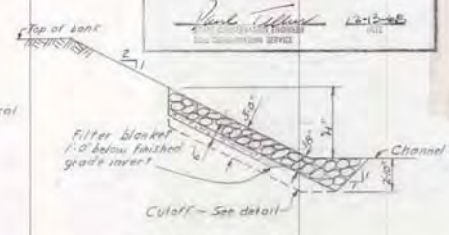


DETAIL "C"
(GROUTED)
Not to scale

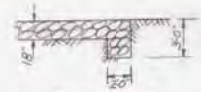
AS-BUILT
SEP 11 1987



DETAIL "A"
(LOOSE)
Not to scale



DETAIL "B"
(LOOSE)
Not to scale



LOOSE RIPRAP CUTOFF DETAIL

MARSH - KELLOGG CREEK

DETAIL	DESCRIPTION	TYPE LOOSE	TYPE GROUTED	LOCATION & LIMITS	HEIGHT "H"	CUTOFF LOCATION	BID ITEM	QUANTITY ROCK	QUANTITY GROUT	QUANTITY FILTER
B	Toe protection (each side)	V		Sta 273+00 to See Sht. 10	5'-0"	—	668	Cu yds 225.4	Cu yds 0	Cu yds 16.3
A	Channel protection (each side and bottom)	V		See Sht. 10	See Sht. 10	276+66.8	668	102.4	0	16.7
B	Toe protection (each side)	V		Sta Sht 10 to Sta 280+00	5'-0"	—	668	494.0	0	72.1
A	Channel protection (each side and bottom)	V		Sta 280+00 to Sta 281+66	5'-0"	280+00	668	491.5	0	47.6
B	Toe protection (right bank)	V		Sta 281+80 to Sta 287+50	5'-0"	—	668	768.8	0	126.6
B	Toe protection (left bank)	V		Sta 281+80 to Sta 285+50	5'-0"	—	668	352.3	0	61.9
B	Toe protection (left bank)	V		Sta 296+08 to Sta 299+08	5'-0"	296+48	668	306.1	0	53.0
B	Toe protection (right bank)	V		Sta 304+50 to Sta 305+44	5'-0"	304+50	668	97.2	0	16.2
B	Toe protection (left bank)	V		Sta 311+47 to Sta 316+75	5'-0"	311+47	668	513.8	0	88.9
B	Toe protection (each side)	V		Sta 316+70 to Sta 322+45	5'-0"	316+70	668	1109.7	0	191.8
A	Channel protection (full section)	V		Sta 323+46 to Sta 323+68	Top Bnk 97'Av	323+46	668	102.5	0	16.9
C	Channel protection (full section) under UPRR bridge		V	Sta 323+68 to Sta 330+03	Top Bnk 93'Av	323+68 330+03	6789	116.2	46.1	46.1
B	Toe protection (each side)	V		Sta 330+03 to Sta 331+09	5'-0"	—	668	213.8	0	37.2
B	Toe protection (each side)	V		Sta 338+37 to Sta 342+58	5'-0"	—	668	1371.6	0	237.1
B	Toe protection (each side)	V		Sta 342+58 to Sta 344+50	7'-0"	342+50	668	1085.1	0	215.4
A	Channel protection (full section)	V		Sta 344+84 to Sta 347+04	Top Bnk 95'Av	344+84	668	92.4	0	15.7
C	Channel protection (full section) Sand Creek Junction		V	See Sht #23	Top Bnk 95'Av	347+06 344+61 & 1+23	6789	595.0	228.0	288.7
B	Toe protection (left bank)	V		Sta 352+10 to Sta 352+35	5'-0"	—	668	38.5	0	6.0
B	Toe protection (each side)	V		Sta 352+35 to Sta 355+28	5'-0"	352+35	668	538.0	0	92.4
A	Channel protection (full section)	V		Sta 355+28 to Sta 355+48	Top Bnk 86'Av	355+28	668	68.5	0	13.5
C	Channel protection (full section) Sand Creek Junction		V	See Sht #28	Top Bnk 93'Av	355+28 356+38 & 1+00	6789	292.1	116.8	133.9
A	Channel protection (each side and bottom)	V		Sta 354+35 to Sta 357+70	5'-0"	—	668	241.5	0	44.2
B	Toe protection (right bank)	V		Sta 357+70 to Sta 362+64	5'-0"	—	668	282.1	0	49.2
B	Toe protection (each side)	V		Sta 362+86 to Sta 371+92	5'-0"	362+86	668	791.1	0	136.3
A	Channel protection (each side and bottom)	V		Sta 371+97 to Sta 372+30	8'-2"	371+97	668	111.3	0	25.2
C	Channel protection (full section)		V	Sta 373+01 to Sta 373+12	9'-2"	373+12	6789	28.3	10.7	9.0
B	Toe protection (right bank)	V		Sta 373+18 to Sta 378+00	5'-5"	—	668	474.9	0	82.6
B	Toe protection (left bank)	V		Sta 378+00 to Sta 380+83	5'-0"	378+00	668	285.9	0	51.3
B	Toe protection (right bank)	V		Sta 391+35 to Sta 394+00	5'-0"	391+35	668	274.3	0	47.1
A	Channel protection (each side and bottom)	V		Sta 394+00 to Sta 401+40	5'-0"	394+00	668	1412.9		247.1
A	Channel protection (full section)	V		Sta 401+40 to Sta 401+60	Top Bnk 94'Av	401+46	668	66.5		11.6
C	Channel protection (full section)		V	Sta 402+07 to Sta 403+00	Top Bnk 93'Av	403+00	6789	191.0	71.5	93.7
B	Toe protection (left bank)	V		Sta 406+07 to Sta 410+31	5'-0"	406+07	668	420.1	0	74.1
A	Channel protection (each side and bottom)	V		Sta 410+31 to Sta 412+05	5'-0"	410+31	668	52.4	0	9.1
A	Channel protection (full sect dry Creek side drain)	V		Sta 412+05 to Sta 412+87	Top Bnk 8'Av	—	668	75.7	0	37.6

MARSH - KELLOGG WATERSHED

RIP RAP SCHEDULES & DETAILS

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed MDC, JCD
Drawn B.E. Jr.
Traced J.C.D.
Checked MDC JWT
Approved by John C. Dalton, Project Engineer
Sheet 24 of 24
Drawing No. 7F-18102

MICROFILMED

ED-2256
Form SCS-313 (November 1965)

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT
CIVIL SET

LICENSED PROFESSIONAL ENGINEER MATTHEW T. TUDRAY C 79249 CIVIL STATE OF CALIFORNIA

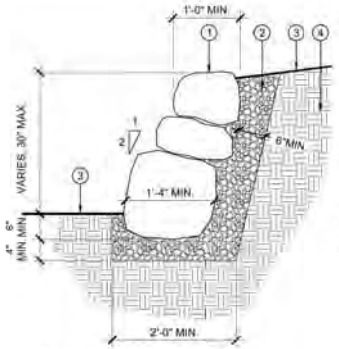
100% SET

Resource Design Group, Inc.
1332 Fifth Street, Suite C
Sonoma, CA 94710
T 510.444.2798 F 510.444.2799
www.resourcedesigngroup.com

DRAWN BY ES / MT
DESIGNED BY ES / IS / KB / PR
CHECKED BY AS / ES / MT
SCALE AS NOTED
DATE MAY 8, 2019

AS-BUILTS

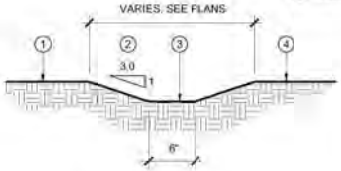
SHEET
C-5.1



1. DRY STACK BOULDER WALL. ASSORTED SIZES UP TO 1/2 TON. USE LARGE BOULDERS AT BOTTOM. EMBED 8" MIN. BELOW FINISH GRADE. BATTER AT 1:2 MAXIMUM SLOPE. FIT ROCKS TIGHT. LAYOUT OF WALL BY O.R. IN THE FIELD.
2. CLASS II PERMEABLE, 4" LEVELING LAYER UNDER KEYSTONE, 6" MIN. LAYER BEHIND FACING
3. FINISH GRADE, SEE PLANS
4. SUBGRADE

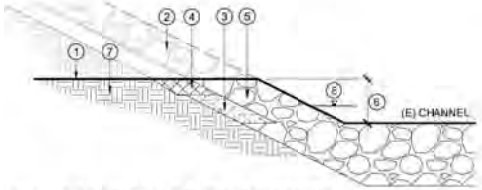
7 BOULDER WALL
SCALE: NTS

1. FINISH GRADE, SLOPE VARIES, SEE PLANS
2. CONFORM TO FG AT 3:1
3. SWALE INVERT, SEE PLANS FOR ELEVATIONS AND SLOPE
4. COMPACTED SUBGRADE



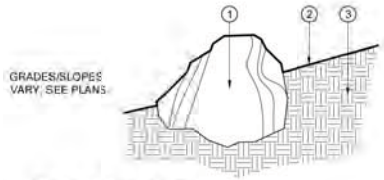
4 SWALE
SCALE: NTS

1. FLOODPLAIN FINISH GRADE, SEE PLANS
2. (E) RSP, REMOVE ABOVE EC. SALVAGE FOR RIPRAP TRENCH
3. (E) GRAVEL FILTER
4. GENERAL FILL, REMOVE TOP 6" LAYER OF (E) GRAVEL FILTER AND REPLACE. RESET RSP AS NECESSARY TO PROVIDE STABLE, INTERLOCKING RSP CONDITION.
5. (E) RSP, PP FROM FLOODPLAIN ELEVATION AND BELOW. RESET RIPRAP DISTURBED DURING GRADING. PROVIDE STABLE, INTERLOCKING RIPRAP CONDITION. SEE 1965 AS-BUILTS FOR ADDITIONAL INFORMATION.
6. FLOODPLAIN ELEVATION VARIES, SEE PLANS
7. SUBGRADE
8. SUMMER BASE FLOW WATER SURFACE ELEVATION (SHOWN SCHEMATICALLY)



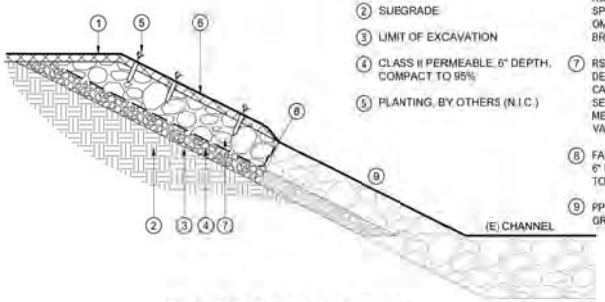
1 GRADING AT (E) CHANNEL
SCALE: NTS

1. BOULDER, SET ON COMPACTED SUBGRADE, SET BOULDER BETWEEN 1/2 AND 3/4 INTO GRADE PER O.R. DIRECTION
2. FINISH GRADE (PLANTING AREA)
3. SUBGRADE



5 SITE BOULDER
SCALE: NTS

1. TOP OF SLOPE, SEE PLANS
2. SUBGRADE
3. LIMIT OF EXCAVATION
4. CLASS II PERMEABLE, 6" DEPTH, COMPACT TO 95%
5. PLANTING, BY OTHERS (N.I.C.)



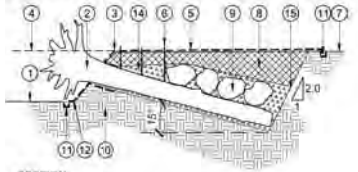
6. GENERAL FILL, ADD 3" OVER RSP AND FILL INTERSTITIAL SPACES, COMPACT TO 85%. OMIT UNDER CENTRAL AVE. BRIDGE.
7. RSP CLASS II (60LB), 18" MIN. DEPTH. INSTALL PER CALTRANS SPECIFICATION SECTION 72-2.03 PLACING METHOD B. LENGTH OF SLOPE VARIES, SEE PLANS.
8. FABRIC (BIODEGRADABLE), END 6" BELOW F.G. AS SHOWN, BOTH TOP AND BOTTOM OF SLOPE.
9. PP (E) RSP SLOPE AND (E) GRAVEL FILTER TO REMAIN.

LOCATION	SIDE	TYPE	SF	NOTES
346+93 - 347+10	RB	RSP	360	
347+10 - 348+81	RB	CRSP	5,325	
348+20 - 349+28	LB	CRSP	3,680	**ADD. BID NO. 2**
355+39 - 355+50	LB	RSP	295	**ADD. BID NO. 2**
355+50 - 356+12	LB	CRSP	1,865	**ADD. BID NO. 2**
356+25 - 356+39.5	RB	RSP	225	
356+39.5 - 356+72.7	LB	RSP	800	
362+46 - 363+69	RB	RSP	4720 3270	**BASEBID:** EXTEND ACROSS ADD. BID NO. 1 TRAIL. **ADD. BID NO. 1:** INSTALL AS SHOWN
362+72 - 363+24	LB	RSP	400	

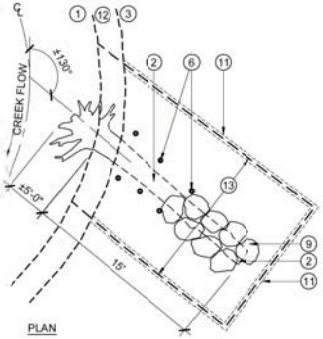
2 ROCK SLOPE PROTECTION (RSP)
SCALE: NTS

1. CHANNEL INVERT
2. ROOTWAD, EXTEND INTO ACTIVE CHANNEL
3. EDGE OF BANKFULL CHANNEL (EC)
4. BANKFULL ELEVATION
5. FABRIC, EMBED IN TRENCH AT ALL EDGES.
6. LIVE CUTTINGS, BY OTHERS (N.I.C.)
7. FLOODPLAIN FINISH GRADE, SEE GRADING PLANS.
8. GENERAL FILL, COMPACTED
9. ¼" TON RSP - PROVIDE 2 TONS TOTAL COVERAGE PER TRUNK. HOLD HIGHEST ROCK 12" MIN. BELOW FINISH GRADE.
10. SUBGRADE
11. 6X6 FABRIC TRENCH, TYP. ALL EDGES.
12. BOTTOM OF BANK (BB)
13. FABRIC LIMITS, EXTEND FABRIC 12" MIN. BEYOND LIMITS OF GENERAL FILL AND EMBED IN FABRIC TRENCH.
14. ANGULAR ROCK BACKFILL, PLACE 3" UNDER AND AROUND ROOTWAD TO FILL VOIDS, INSTALL BOULDERS, FILL AROUND VOIDS IN BOULDERS TO THE LEVEL NECESSARY TO OBTAIN COMPACTABLE SURFACE.
15. CUT SLOPE, WHERE (E) CONDITIONS REQUIRE EXCAVATION TO RECEIVE IMPROVEMENTS, MAX ANGLE 1:2 AS SHOWN.

NOTE:
WHERE ROOTWAD IS EXCAVATED INTO (E) RIPRAP, RESET RIPRAP TO PROVIDE STABLE, INTERLOCKING CONDITION PER O.R. DIRECTION



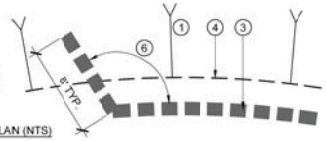
SECTION



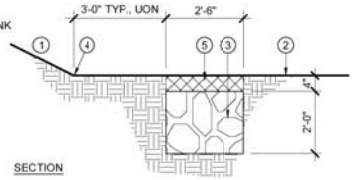
PLAN

6 ROOTWAD
SCALE: NTS

1. CHANNEL BANK
2. FLOODPLAIN
3. SALVAGED RSP, SEE 1/C-5.2. AUGMENT WITH RSP CLASS II (60 LB) AS REQUIRED TO INSTALL TO DIMENSIONS SHOWN.
4. BOTTOM OF BANK
5. GENERAL FILL, COMPACTED
6. 120° (UON). TURN RIPRAP TRENCH AND EXTEND UP BANK



PLAN (NTS)



SECTION

3 RIPRAP TRENCH
SCALE: NTS

REVISIONS	
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100% SET

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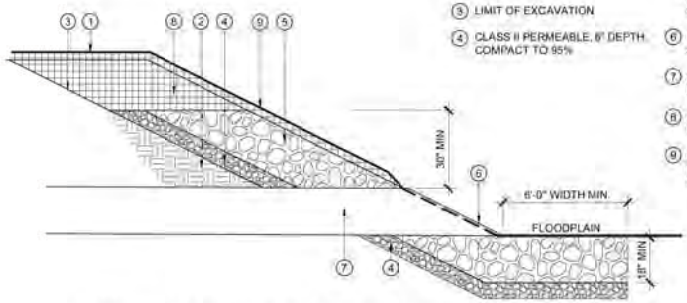
1102 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2799 F 510.644.2799
www.resourcedesigngroup.com

DESIGNED BY: ES / MT
DRAWN BY: ES / IS / KB / PR
CHECKED BY: AS / ES / MT
SCALE: AS NOTED
DATE: MAY 8, 2019

DETAILS

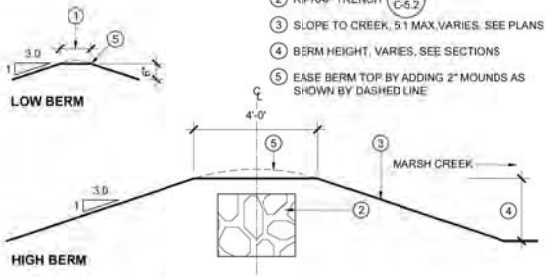
SHEET
C-5.2

1. TOP OF SLOPE. SEE PLANS
2. SUBGRADE
3. LIMIT OF EXCAVATION
4. CLASS II PERMEABLE, 8" DEPTH, COMPACT TO 95%
5. RSP CLASS II (60 LB) 18" MIN DEPTH METHOD B PLACEMENT. PLACE 30" MIN ABOVE OUTFALL PIPE AND 6' WIDTH (IN AND OUT OF SHEET)
6. END OF PIPE. CUT TO MATCH SLOPE
7. STORM DRAIN OUTFALL PIPE. SEE PLANS
8. GENERAL FILL, BACKFILL AND COMPACT TO 95%
9. GENERAL FILL, ADD 3" OVER RSP, FILL INTERSTITIAL SPACES. COMPACT TO 85%



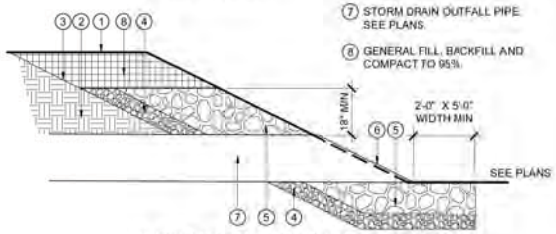
4 OUTFALL ROCK SLOPE PROTECTION
SCALE: NTS

1. TOP WIDTH VARIES, SEE PLAN. 2' MIN.
2. RIPRAP TRENCH (3 / C-5.2)
3. SLOPE TO CREEK, 5:1 MAX.VARIES. SEE PLANS
4. BERM HEIGHT, VARIES, SEE SECTIONS
5. EASE BERM TOP BY ADDING 2" MOUNDS AS SHOWN BY DASHED LINE



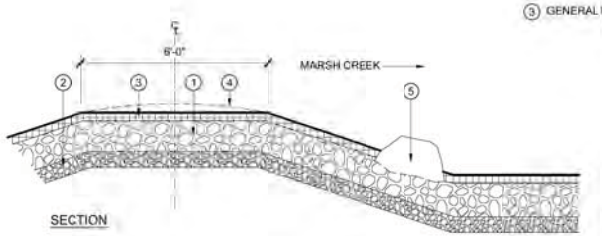
1 BERMS
SCALE: NTS

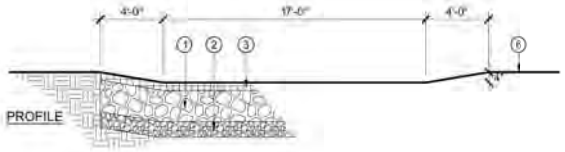
1. TOP OF SLOPE. SEE PLANS
2. SUBGRADE
3. LIMIT OF EXCAVATION
4. CLASS II PERMEABLE, 8" DEPTH, COMPACT TO 95%
5. RSP CLASS II (60 LB) 18" MIN DEPTH METHOD B PLACEMENT. PLACE 18" MIN ABOVE OUTFALL PIPE AND 5'-0" WIDTH (IN AND OUT OF SHEET)
6. END OF PIPE. CUT TO MATCH SLOPE
7. STORM DRAIN OUTFALL PIPE. SEE PLANS.
8. GENERAL FILL, BACKFILL AND COMPACT TO 95%.



5 BASE INLET ROCK SLOPE PROTECTION
SCALE: NTS

1. RSP CLASS II (60 LB) 18" MIN DEPTH METHOD B PLACEMENT
2. CLASS II PERMEABLE 8" DEPTH COMPACTED TO 95%
3. GENERAL FILL
4. TOP OF HIGH BERM, BEYOND
5. SITE BOULDER. INCORPORATED INTO RSP PER O.R. DIRECTION IN FIELD
6. TOP OF HIGH BERM

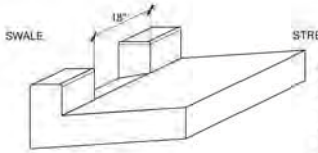




2 HIGH BERM SPILLWAY
SCALE: NTS

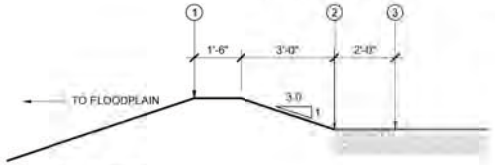
1. TOP OF BANK. ADJUST LOCATION AND ELEVATIONS SHOWN ON SECTIONS TO BE 6'-6" OFFSET FROM EDGE OF PAVING AND 1'-0" HIGHER AS SHOWN. ALERT O.R. IF ELEVATION DEVIATES FROM GRADES SHOWN ON PLAN MORE THAN 4", OR SLOPES ARE GREATER THAN 2:2:1
2. EDGE OF TRAILSIDE MOUND
3. EDGE OF EXISTING PAVING

NOTE:
INSTALL TRAILSIDE MOUND ON RIGHT BANK FROM STATION 332+95 TO 345+90



NOTE:
CONTINUE GUTTER PAN SLOPE DOWN CURB CUT INTO SWALE AREA. ENSURE POSITIVE DRAINAGE INTO SWALE. PATCH CONCRETE AS NECESSARY TO ENSURE A SMOOTH CLEAN FINISH SURFACE. CENTER CURB CUT ON FLOWLINE OF SWALE AREA

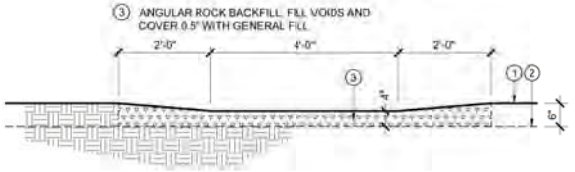
7 ADD. BID NO. 5: CURB CUT
SCALE: NTS



6 TRAILSIDE MOUND
SCALE: NTS

1. TOP OF LOW BERM
2. INFILTRATION BASIN FG
3. ANGULAR ROCK BACKFILL. FILL VOIDS AND COVER 0.5' WITH GENERAL FILL

NOTE:
1. OMIT RIPRAP TRENCH AT SPILLWAY.



3 LOW BERM SPILLWAY
SCALE: NTS

REVISIONS

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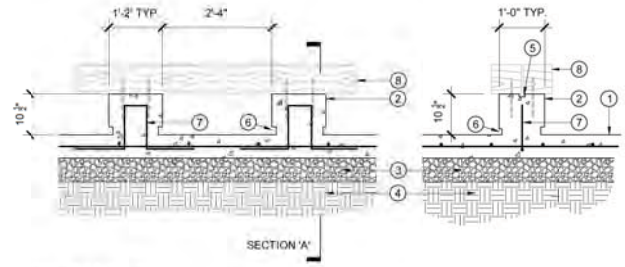
DESIGNED BY	ES / MT
DRAWN BY	ES / IS / KB / PR
CHECKED BY	AS / ES / MT
SCALE	AS NOTED
DATE	MAY 8, 2019

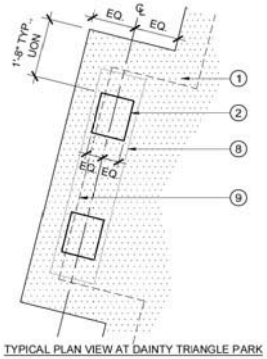
DETAILS

SHEET
C-5.3



SECTION ELEVATION

SECTION 'A'



TYPICAL PLAN VIEW AT DAINTY TRIANGLE PARK

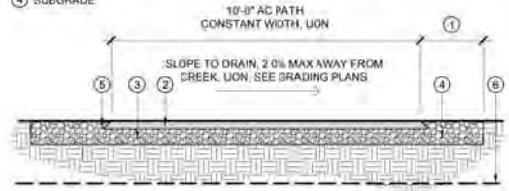
1. CONCRETE PAVING (3 / C-5.4)
2. BENCH BASE INTEGRAL WITH CONCRETE PAVING. CENTER ON CONCRETE BULB-OUT AS SHOWN IN PLAN VIEW.
3. BASE COURSE
4. SUBGRADE
5. 1 X 2 CHANNEL, ENSURE POSITIVE DRAINAGE
6. 1 X 2 RELIEF ALL SIDES OF PEDESTALS. ENSURE POSITIVE DRAINAGE ON CONCRETE FS
7. #4 REBAR WITH 12" HOOK AT EACH END TIED TO CONCRETE PAVING REBAR. ENSURE 3" CLEAR FROM EDGES.
8. REDWOOD TIMBERS AND REBAR PINS, BY OTHERS (N.I.C.)

THICKENED EDGE, TYP. SEE DETAIL 3 / C-5.4

5 ADD. BID NO. 3 + 4: BENCH BASE

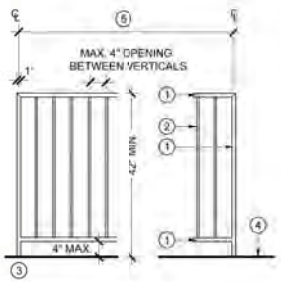
SCALE: NTS

1. SHOULDERS, 2'-0" WIDTH BOTH SIDES, COMPACTED CLASS 2 AB, F.G. FLUSH WITH F.S.
2. HMA PAVING (AC PAVING), 3" DEPTH
3. BASE COURSE, 6" DEPTH, COMPACTED CLASS 2 AB, TYP.
4. SUBGRADE
5. FINISHED EDGE OF HMA PATH. PROVIDE 45 DEGREE BEVEL. PROVIDE SMOOTH, CONSISTENT TAMPED EDGE.
6. PROVIDE 6" PVC SLEEVES UNDER AC PAVING WHERE REQUIRED. COORDINATE WITH IRRIGATION CONTRACTOR PRIOR TO PAVING.

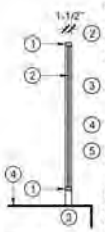


1 HMA PAVING

SCALE: NTS



ELEVATION



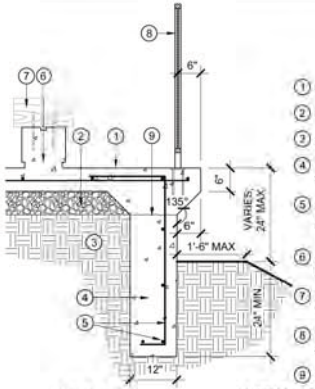
SECTION

1. TOP AND BOTTOM RAIL AND VERTICAL POST MEMBERS: STRUCTURAL TUBING: 1-1/2" X 1" X 3/16". ALL JOINTS SHALL BE WELDED AND GROUND SMOOTH. SEE ENLARGEMENT FOR RADIUS BEND IN GUARDRAIL
2. VERTICAL PICKETS: 1/2" X 1/2" SOLID SQUARE STEEL. WELD ALL AROUND AT TOP AND BOTTOM
3. GUARDRAIL CONNECTION (7 / C-5.4)
4. OVERLOOK STRUCTURE (4 / C-5.4)
5. SPACE POSTS AT 4'-6" O.C., UON. HOLD TOP OF GUARDRAIL LEVEL

NOTE:
GUARDRAIL SHALL BE HOT DIP GALVANIZED AFTER FABRICATION. TOUCH UP FIELD WELDS PER SPECIFICATIONS.

6 ADD. BID NO. 3 + 4: PEDESTRIAN GUARDRAIL

SCALE: NTS

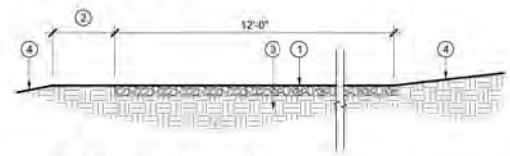


1. CONCRETE PAVING (3 / C-5.4) SIM
2. BASE COURSE
3. SUBGRADE
4. THICKENED EDGE AT OVERLOOK. SEE PLANS FOR EXTENTS.
5. #4 REBAR @ 12" O.C. VERTICAL, 18" HOOK AT TOP, 6" HOOK AT BOTTOM. (4) #4 HORIZONTAL REBAR AS SHOWN.
6. BENCH BASE, SEE ENLARGEMENT FOR LAYOUT (5 / C-5.4)
7. REDWOOD TIMBERS AND REBAR PINS, BY OTHERS (N.I.C.)
8. PEDESTRIAN GUARDRAIL, SEE PLANS FOR LAYOUT (6 / C-5.4)
9. COLD JOINT, CLEAN AND ROUGH

4 ADD. BID NO. 3: OVERLOOK SECTION

SCALE: NTS

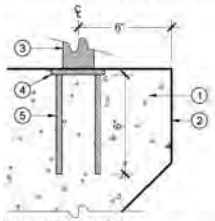
1. BASE COURSE, 4" DEPTH, CLASS 2 AB, FLUSH WITH ADJACENT FINISH GRADE. CROSS SLOPE 2%, SEE PLANS FOR GRADING. COMPACT TO 95% TYP.
2. EARTHEN SHOULDER, 2'-0" MIN. WIDTH, OUTBOARD EDGE. COMPACT TO 95% TYP. ENSURE POSITIVE DRAINAGE
3. SUBGRADE
4. FINISH GRADE, SEE GRADING PLANS. ENSURE POSITIVE DRAINAGE



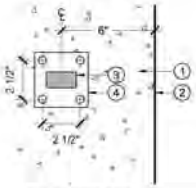
2 AGGREGATE PAVING

SCALE: NTS

1. OVERLOOK STRUCTURE (4 / C-5.4)
2. EDGE OF CONCRETE
3. GUARDRAIL POST: 1-1/2" X 1" X 3/16". FIELD WELD TO BASE PLATE. NOTE: ALL JOINTS SHALL BE FULLY WELDED AND GROUND SMOOTH
4. BASE PLATE: 3/8" THICK, 3-1/2" SQUARE EMBEDDED STEEL PLATE WITH ANCHORS. HOLD TOP OF PLATE FLUSH WITH PAVING
5. (4) #4 REBAR STUD ANCHORS, IN 2-1/2" SQUARE PATTERN. WELD TO BOTTOM OF BASE PLATE. ENSURE 3" CLR. TO EDGE OF CONCRETE



SECTION AT OVERLOOK

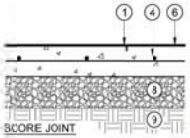


PLAN AT OVERLOOK

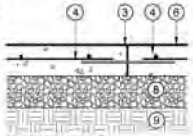
7 ADD. BID NO. 3 + 4: GUARDRAIL CONNECTION

SCALE: NTS

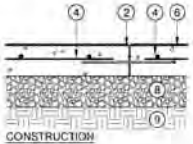
1. SCORE JOINT, 1" DEEP, 3/16" TO 1/4" WIDE, 1/8" RADIUS PER PLANS, CITY STANDARDS, OR O.R. DIRECTION
2. CONSTRUCTION JOINT, 18" LONG, 5/8" DIAMETER SMOOTH, GALVANIZED STEEL DOWEL AT MID-DEPTH OF SLAB
3. PRE-MOLDED EXPANSION JOINT; FILLER WITH JOINT SEALANT TO PROTECT FILLER (25' MAX. SPACING ALONG PATH). 3/8" WIDTH WITH 18" LONG, 5/8" DIAMETER SMOOTH GALVANIZED STEEL DOWEL 36" O.C. AT MID-DEPTH OF SLAB
4. #4 REBAR @ 18" O.C. BOTH WAYS AT CENTER OF CONCRETE SLAB. PLACE BAR 3" FROM EDGES AND EACH SIDE OF FORMED JOINTS. PLACE AT MID-DEPTH OF SLAB
5. (2) #4 REBAR @ BOTTOM OF THICKENED EDGE. PLACE 3" CLEAR FROM EDGES
6. CONCRETE PAVING, INSTALL THICKENED EDGE AT PERIMETER, UON. FINISH PER SPECIFICATIONS AND O.R. DIRECTION
7. FINISH GRADE OR FINISH SURFACE FLUSH WITH CONCRETE PAVING FINISH SURFACE. SEE PLANS FOR LOCATIONS WITH AGGREGATE SHOULDER
8. BASE COURSE, COMPACTED CLASS 2 AB, TYP.
9. SUBGRADE
10. PROVIDE 6" PVC SLEEVES UNDER CONCRETE PAVING WHERE REQUIRED. COORDINATE WITH IRRIGATION CONTRACTOR PRIOR TO PAVING



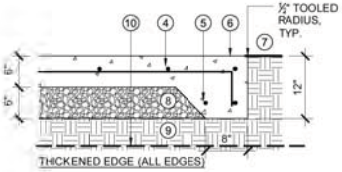
SCORE JOINT



EXPANSION JOINT



CONSTRUCTION JOINT



THICKENED EDGE (ALL EDGES)

3 CONCRETE PAVING

SCALE: NTS

REVISIONS	
DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT

CIVIL SET

LICENSED PROFESSIONAL ENGINEER — MATTHEW J. TIMMONS — C 79249 — CIVIL — STATE OF CALIFORNIA

100% SET

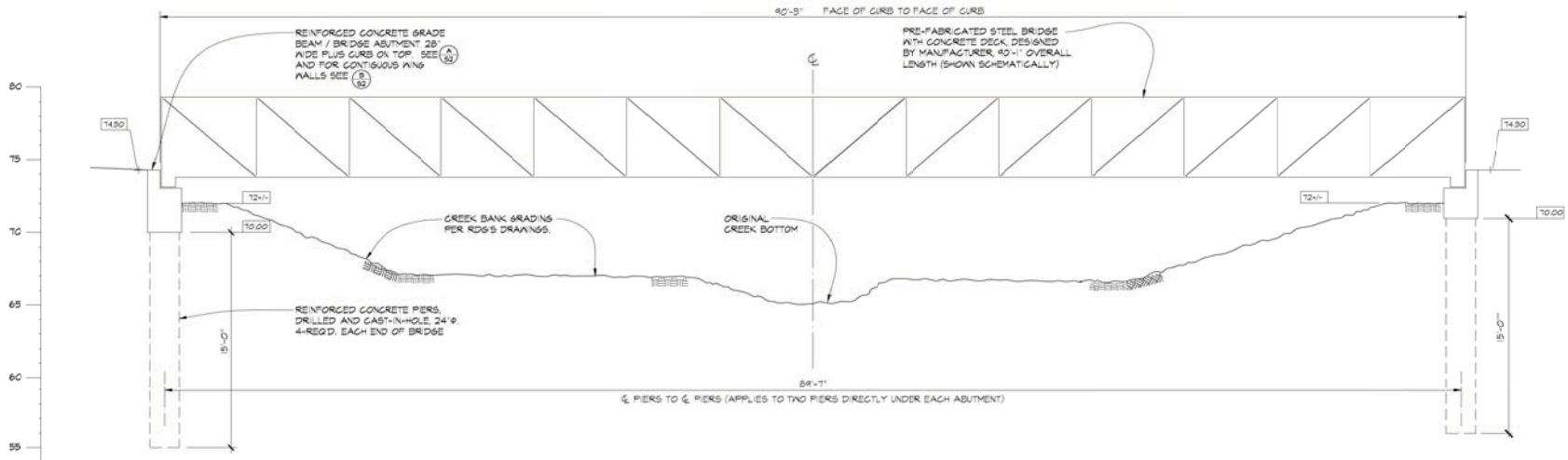
Resource Design Group, Inc.
1332 Fifth Street, Suite C
Berkeley, CA 94710
T 510.644.2799 F 510.644.2799
www.resourcedesigngroup.com

DRAWN BY	ES / MT
DESIGNED BY	ES / IS / KB / PR
CHECKED BY	AS / ES / MT
SCALE	AS NOTED
DATE	MAY 8, 2019

DETAILS

SHEET

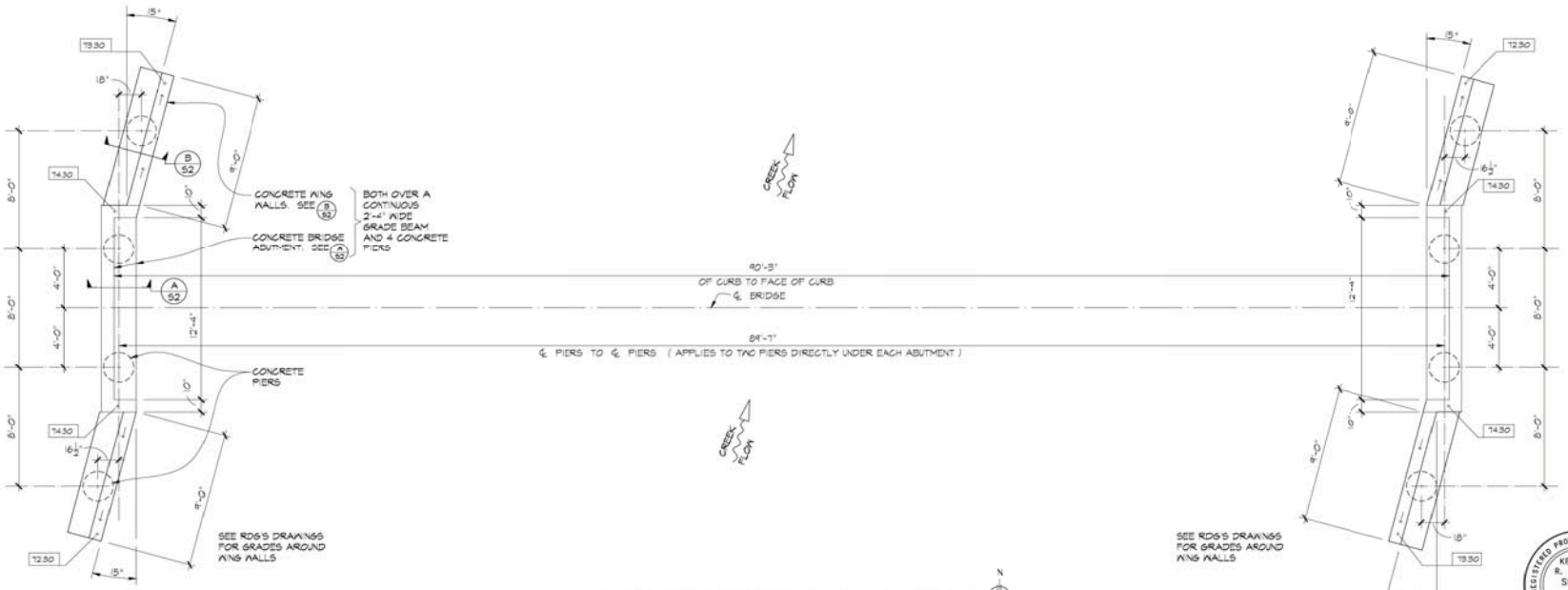
C-5.4



SECTION THROUGH BRIDGE AND ABUTMENTS LOOKING DOWNSTREAM

1/4" = 1'-0"

NOTE:
CONFIRM CONCRETE CONFIGURATION AND ANCHOR BOLT LAYOUT WITH BRIDGE MANUFACTURER



PLAN VIEW OF BRIDGE ABUTMENTS

1/4" = 1'-0"

REGISTERED PROFESSIONAL ENGINEER
KENNETH R. HUGHES
SE 2645
Exp. 12/31/20
STRUCTURAL
STATE OF CALIFORNIA

REVISIONS	
DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT
CONSTRUCTION DOCUMENTS

STRUCTURAL DESIGN BY:
Kenneth R. Hughes
Structural Engineer
3620 Mt. Diablo Blvd., #203
Lafayette, CA 94549
T: 925-284-2808
KRHughes@pacbell.net
K.H. Job # 2017.43

100% SET

Restoration Design Group, Inc.
2322 Fifth Street, Suite C
Berkeley, CA 94710
T: 510.644.2789 F: 510.644.2799
www.restorationdesigngroup.com

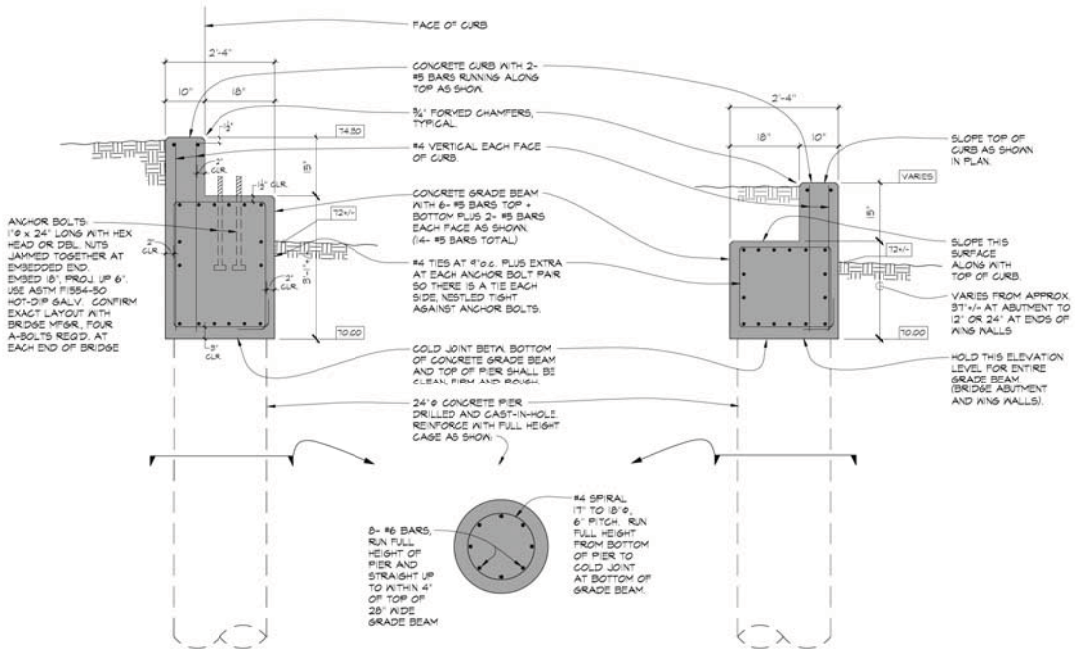
DESIGN BY:	KRH
DRAWN BY:	LMc
CHECKED BY:	KRH
SCALE:	AS NOTED
DATE:	MAY 1, 2019

BRIDGE ABUTMENTS

SHEET

S1

FIGURE 3-2b. Fi



SECTION AT BRIDGE ABUTMENT (A / S2)
3/4" = 1'-0"

SECTION AT WING WALL (B / S2)
3/4" = 1'-0"

REGISTERED PROFESSIONAL ENGINEER — KENNETH R. HUGHES — S2645 — Exp. 12/31/20 — STRUCTURAL — STATE OF CALIFORNIA

REVISIONS

THREE CREEKS PARKWAY RESTORATION PROJECT
CONSTRUCTION DOCUMENTS

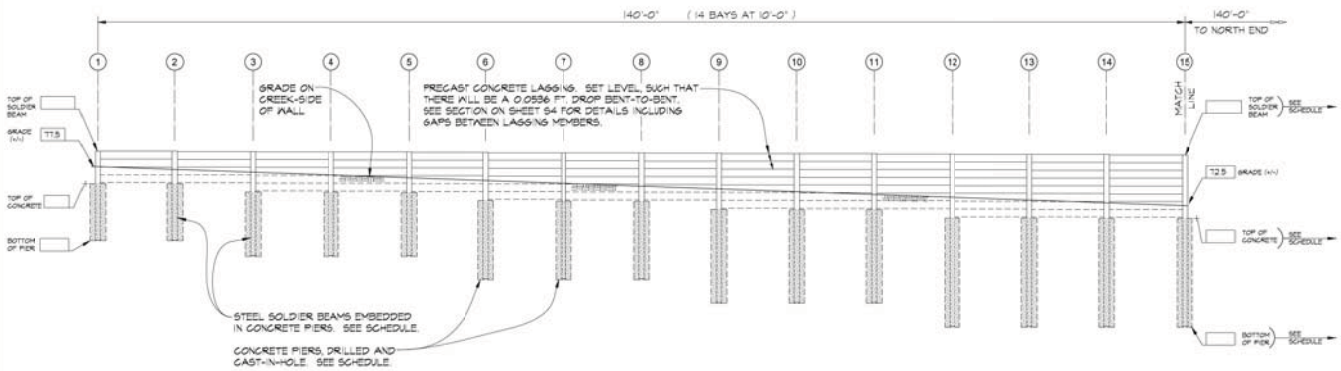
STRUCTURAL DESIGN BY:
Kenneth R. Hughes
Structural Engineer
3620 Mt. Diablo Blvd., #203
Lafayette, CA 94549
T: 925-284-2808
KRHughes@pacbell.net
K.H. Job # 2017.43

100% SET

DESIGN BY:	KRH
DRAWN BY:	LMc
CHECKED BY:	KRH
SCALE:	AS NOTED
DATE:	MAY 1, 2019

BRIDGE ABUTMENTS

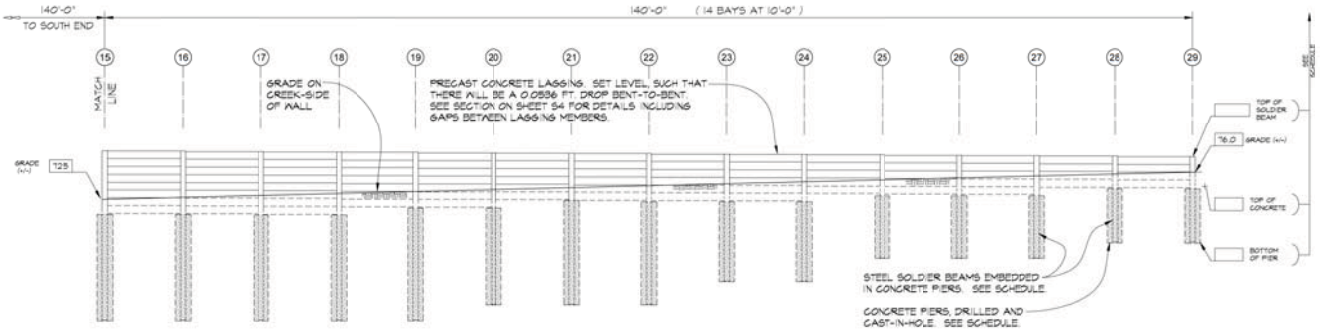
SHEET: S2



PARTIAL RETAINING WALL ELEVATION (SOUTH HALF)

1/8" = 1'-0"

PIER & SOLDIER BEAM SCHEDULE						
BENT #	PIER DIAMETER	BOTTOM OF PIER ELEV.	TOP OF CONC. ELEV.	TOP OF SOLDIER BEAM ELEV.	SOLDIER BEAM	S.B. LENGTH
1	24"	69.0		79.500	W8x24	
2	24"	69.0		79.406	W8x24	
3	24"	66.0		79.343	W8x24	
4	24"	66.0		79.334	W8x24	
5	24"	66.0		79.286	W8x24	
6	24"	63.0		79.232	W10x33	
7	24"	63.0		79.179	W10x33	
8	24"	63.0		79.125	W10x33	
9	24"	60.0		79.071	W10x33	
10	24"	60.0		79.018	W10x33	
11	24"	60.0		78.964	W10x33	
12	24"	57.0		78.911	W12x53	
13	24"	57.0		78.857	W12x53	
14	24"	57.0		78.804	W12x53	
15	24"	57.0		78.750	W12x53	
16	24"	57.0		78.696	W12x53	
17	24"	57.0		78.643	W12x53	
18	24"	57.0		78.589	W12x53	
19	24"	57.0		78.536	W10x33	
20	24"	54.0		78.482	W10x33	
21	24"	54.0		78.429	W10x33	
22	24"	54.0		78.375	W10x33	
23	24"	62.0		78.321	W10x33	
24	24"	62.0		78.268	W10x33	
25	24"	65.0		78.214	W8x24	
26	24"	65.0		78.16	W8x24	
27	24"	65.0		78.107	W8x24	
28	24"	67.0		78.054	W8x24	
29	24"	67.0		78.000	W8x24	



PARTIAL RETAINING WALL ELEVATION (NORTH HALF)

1/8" = 1'-0"

REGISTERED PROFESSIONAL ENGINEER
KENNETH R. HUGHES
SE 2645
Exp. 12/31/20
STRUCTURAL
STATE OF CALIFORNIA

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT

CONSTRUCTION DOCUMENTS

STRUCTURAL DESIGN BY:
Kenneth R. Hughes
Structural Engineer
3620 Mt. Diablo Blvd., #203
Lafayette, CA 94549
T: 925-284-2808
KRHughes@pacbell.net
K.H. Job # 2017.43

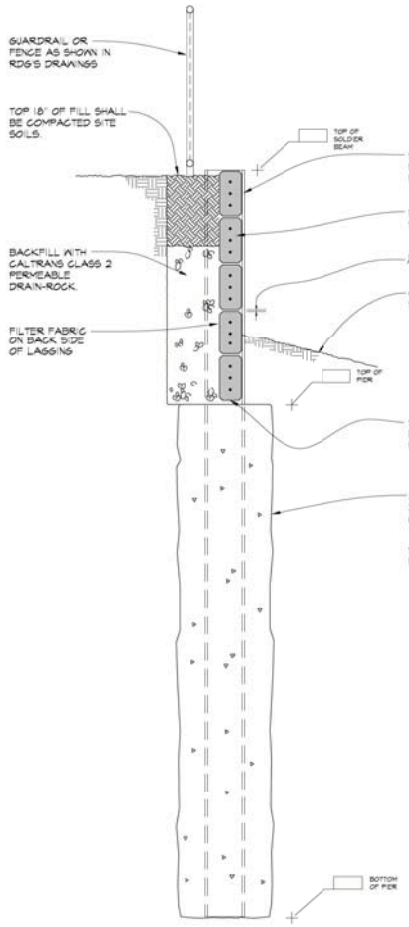
100% SET

DESIGN BY: KRH
DRAWN BY: LMc
CHECKED BY: KRH
SCALE: AS NOTED
DATE: MAY 1, 2019

WALL PLAN AND SECTION

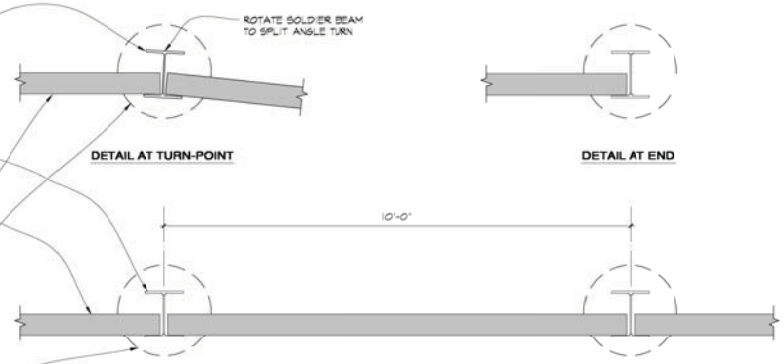
SHEET

S3



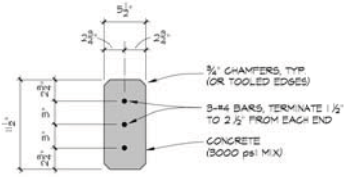
RETAINING WALL SECTION (A / S4)

3/4" = 1'-0"



PLAN DETAILS: SOLDIER PILE RETAINING WALL (B / S4)

3/4" = 1'-0"



LAGGING MEMBERS SHALL BE 4'-10" LONG. CONFIRM + ADJUST AS REQ'D. BASED ON ACTUAL AS-INSTALLED MEASUREMENTS BETW SOLDIER BEAMS.

LAGGING DETAIL (C / S4)

1 1/2" = 1'-0"

REGISTERED PROFESSIONAL ENGINEER — KENNETH R. HUGHES — SE 2645 — EXP. 12/31/20 — STRUCTURAL — STATE OF CALIFORNIA

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT
CONSTRUCTION DOCUMENTS

STRUCTURAL DESIGN BY:
Kenneth R. Hughes
Structural Engineer
3620 Mt. Diablo Blvd., #203
Lafayette, CA 94549
T: 925-284-2808
KRHughes@pacbell.net
K.H. Job # 2017.43

100% SET

Restoration Design Group, Inc.
2202 Fifth Street, Suite C
Berkeley, Ca 94710
T: 510.644.2789 F: 510.644.2799
www.restorationdesigngroup.com

DESIGN BY:	KRH
DRAWN BY:	LMc
CHECKED BY:	KRH
SCALE:	AS NOTED
DATE:	MAY 1, 2019

WALL ELEVATION

SHEET

S4

ATTACHMENT B

LEGEND

- Ruderal
- Urban
- Slough/Channel
- Permanent Impacts

Temp impacts will occur entirely within the ruderal areas and in a few locations within slough/channel for *temporary bridge crossings.*

0 75 150 FEET

Wood Biological Consulting, Inc. - Three Creeks Parkway Restoration Project

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT
CONSTRUCTION DOCUMENTS

90% SET

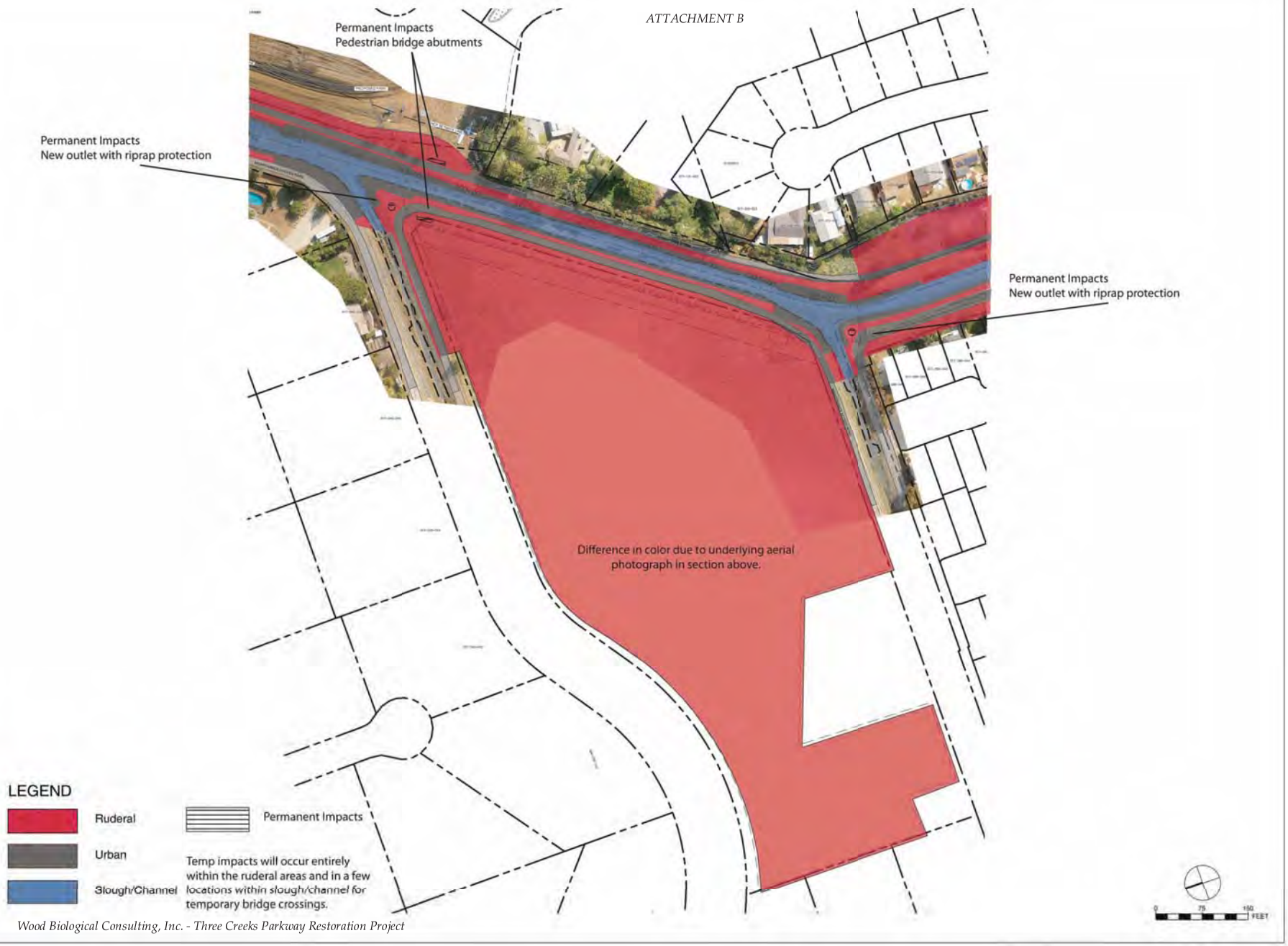
Restoration Design Group, Inc.
2612 Eighth Street, Suite B
Berkeley, CA 94710
T 510.644.2798 F 510.644.2799
www.restorationdesigngroup.com

DESIGN BY: ES
DRAWN BY: ES / HM / PR
CHECKED BY: ES / MT
SCALE: 1" = 75'-0"
DATE: OCTOBER 31, 2017

LAND COVER MAP

SHEET
L-1

ATTACHMENT B



Wood Biological Consulting, Inc. - Three Creeks Parkway Restoration Project

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT
CONSTRUCTION DOCUMENTS

90% SET

Restoration Design Group, Inc.
2612 Eighth Street, Suite B
Berkeley, CA 94710
T 510.644.3798 F 510.644.3799
www.restorationdesigngroup.com

DESIGN BY: ES
DRAWN BY: ES / HM / PR
CHECKED BY: ES / MT
SCALE: 1" = 75'-0"
DATE: OCTOBER 31, 2017

LAND COVER MAP

SHEET
L-2

ATTACHMENT B

LEGEND

- Ruderal
- Urban
- Slough/Channel
- Permanent Impacts

Temp impacts will occur entirely within the ruderal areas and in a few locations within slough/channel for temporary bridge crossings.

0 75 150 FEET

Wood Biological Consulting, Inc. - Three Creeks Parkway Restoration Project

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT
CONSTRUCTION DOCUMENTS

90% SET

Restoration Design Group, Inc.
2612 Eighth Street, Suite B
Berkeley, CA 94710
T 510.644.2798 F 510.644.2799
www.restorationdesigngroup.com

DESIGNED BY: ES
DRAWN BY: ES / HM / PR
CHECKED BY: ES / MT
SCALE: 1" = 75'-0"
DATE: OCTOBER 31, 2017

LAND COVER MAP

SHEET
L-3

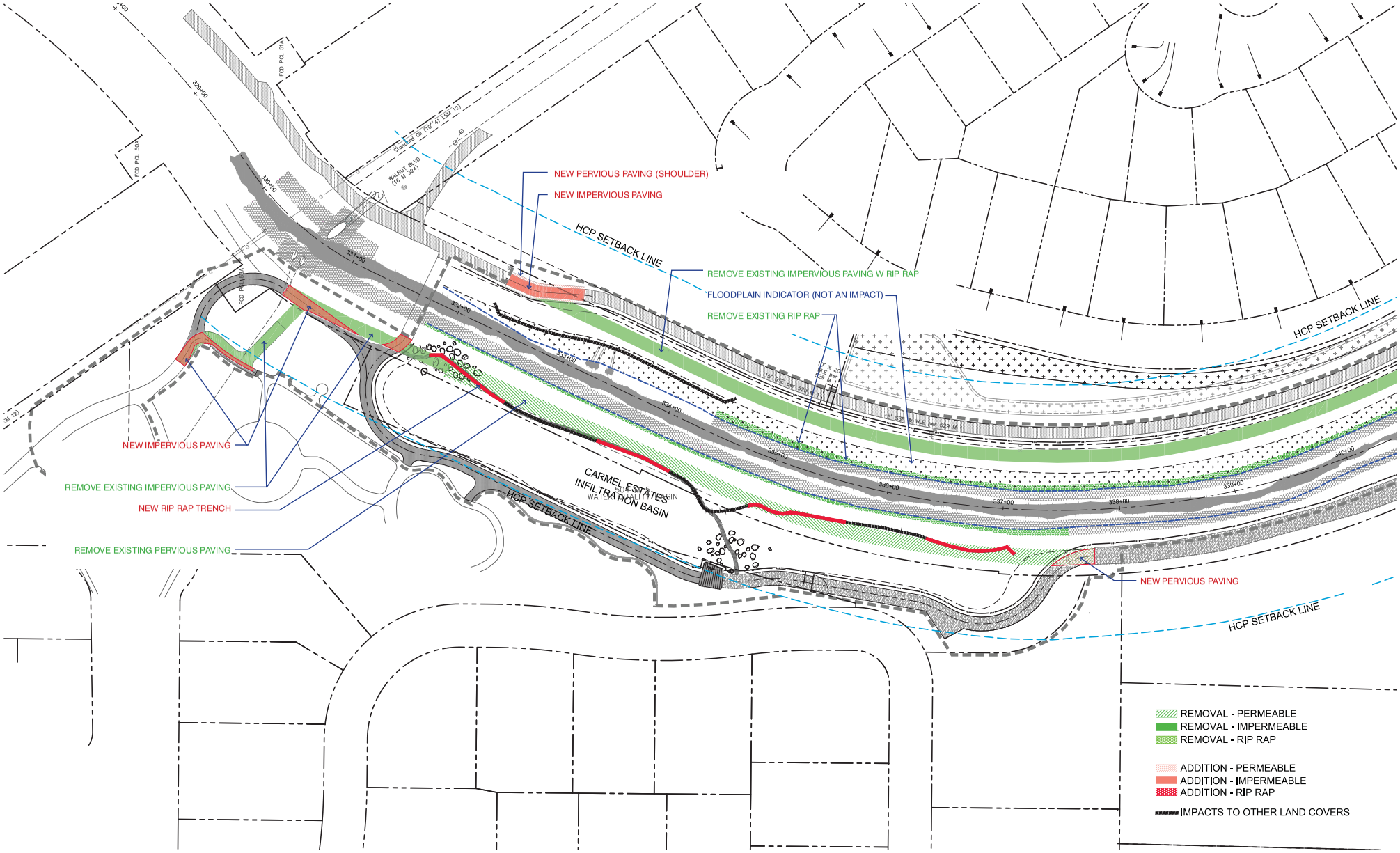


FIGURE A.1 IMPACTS TO URBAN LAND COVER - SUNGOLD PARK

5 SEPTEMBER 2018

THREE CREEKS PARKWAY - American Rivers, City of Brentwood CA

Restoration Design Group, Inc.

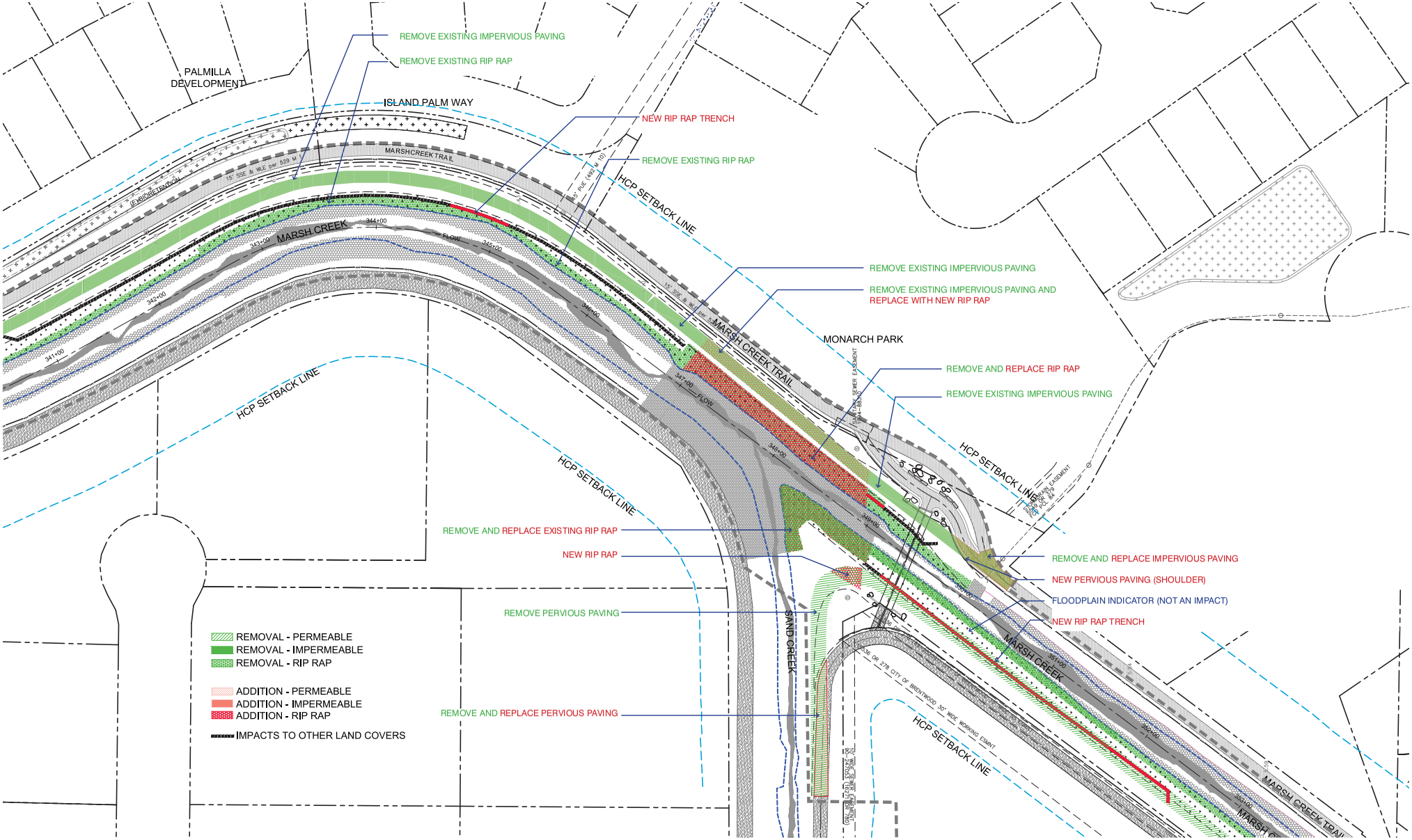


FIGURE A.2 IMPACTS TO URBAN LAND COVER - SAND CREEK CONFLUENCE

5 SEPTEMBER 2018

THREE CREEKS PARKWAY - American Rivers, City of Brentwood CA

Restoration Design Group, Inc.

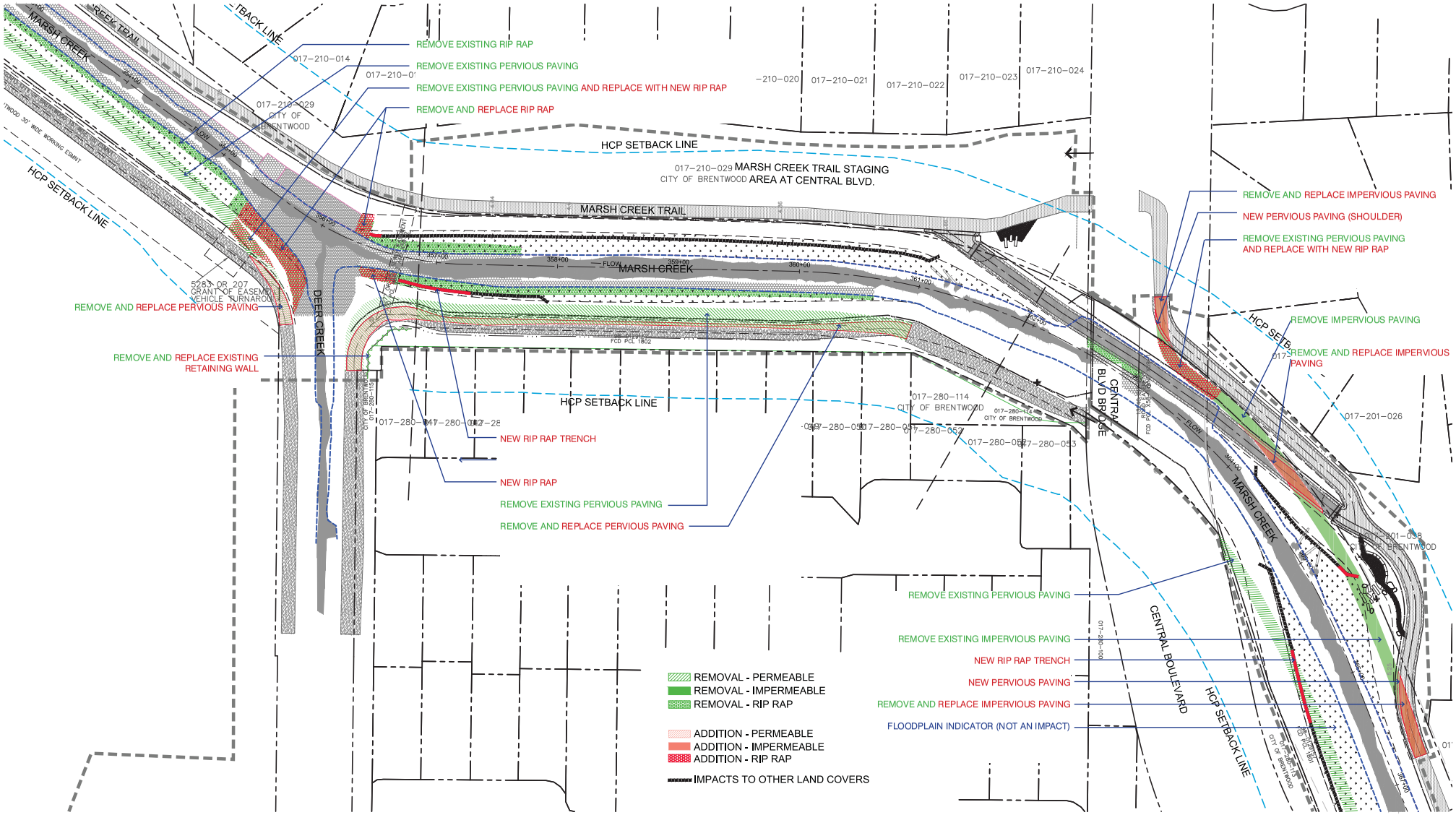


FIGURE A.3 IMPACTS TO URBAN LAND COVER - DEER CREEK CONFLUENCE / CENTRAL AVENUE BRIDGE

5 SEPTEMBER 2018

THREE CREEKS PARKWAY - American Rivers, City of Brentwood CA

Restoration Design Group, Inc.

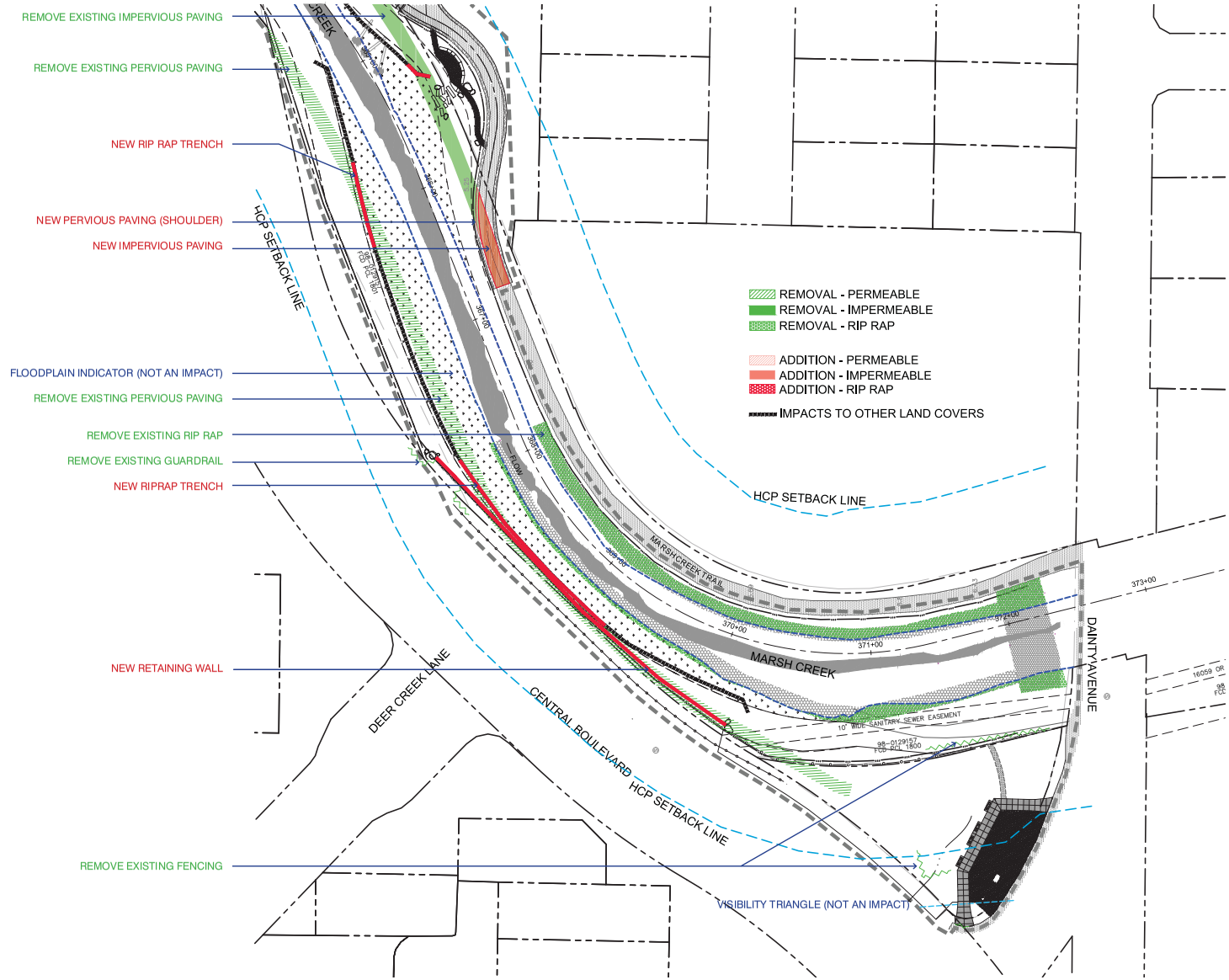


FIGURE A.4 IMPACTS TO URBAN LAND COVER - DAINTY TRIANGLE PARK

5 SEPTEMBER 2018

THREE CREEKS PARKWAY - American Rivers, City of Brentwood CA

Restoration Design Group, Inc.

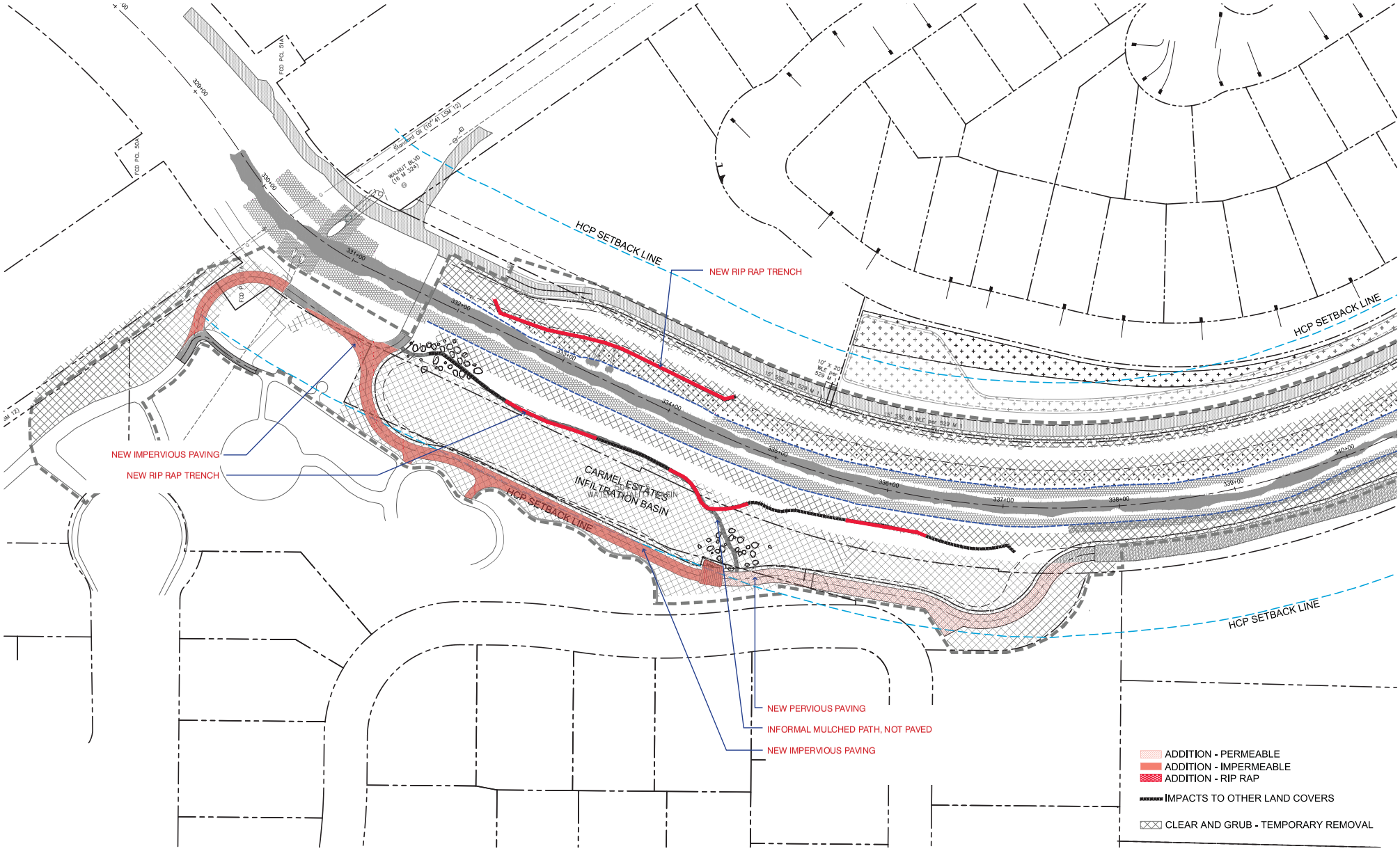


FIGURE B.1 IMPACTS TO RUDERAL LAND COVER - SUNGOLD PARK

05 SEPTEMBER 2018

THREE CREEKS PARKWAY - American Rivers, City of Brentwood CA

Restoration Design Group, Inc.

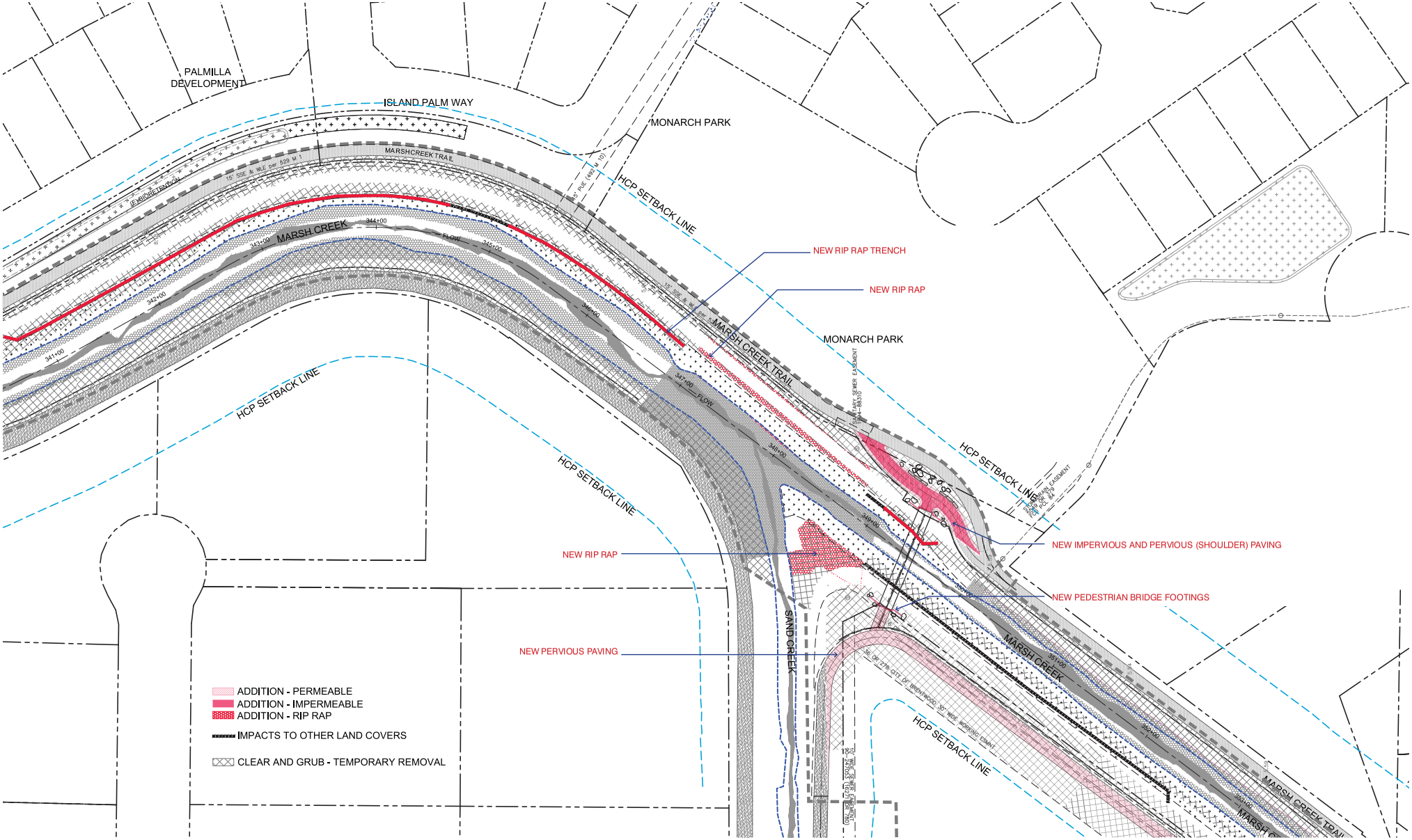


FIGURE B.2 IMPACTS TO RUDERAL LAND COVER - SAND CREEK CONFLUENCE

05 SEPTEMBER 2018

THREE CREEKS PARKWAY - American Rivers, City of Brentwood CA

Restoration Design Group, Inc.

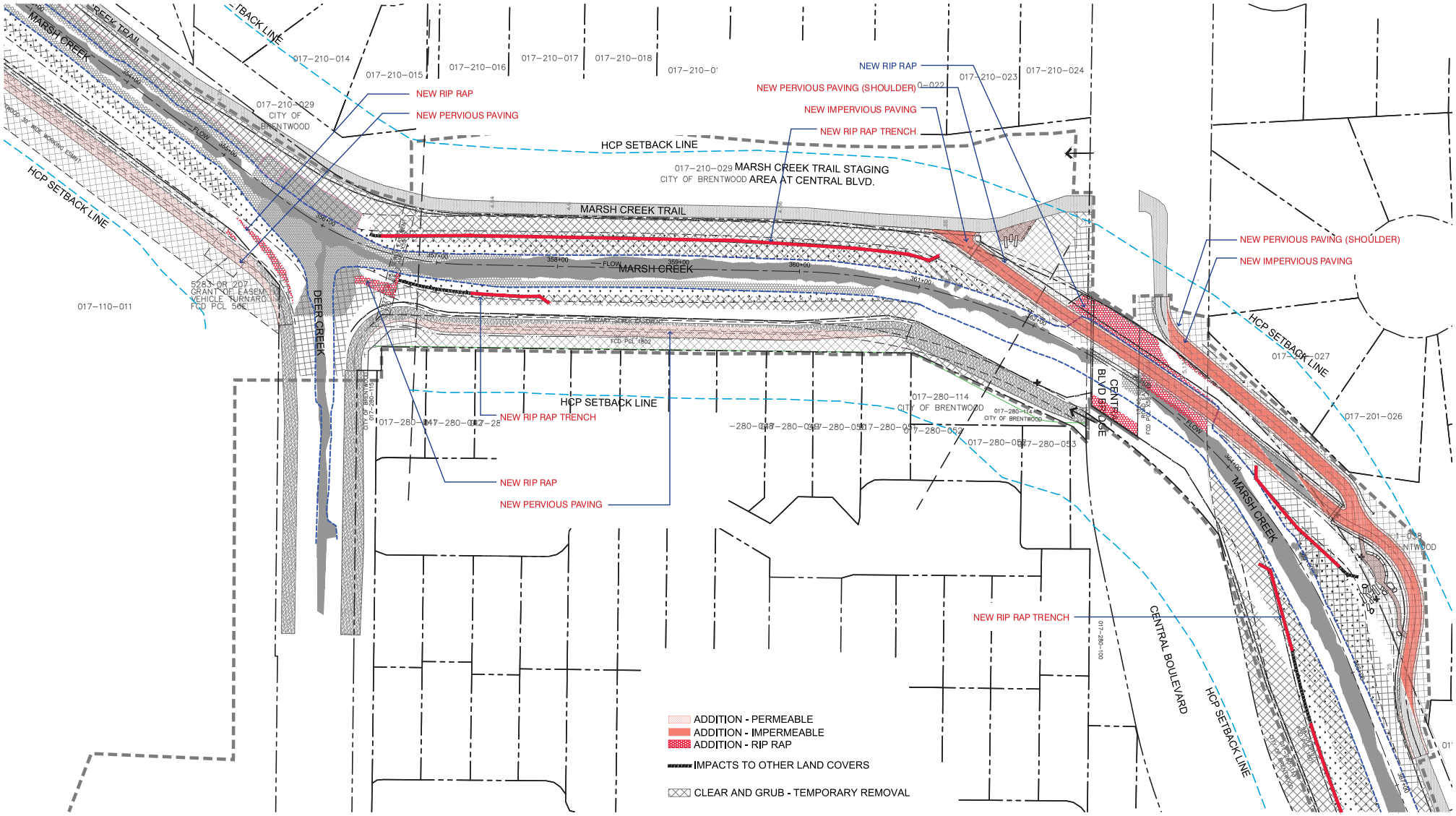


FIGURE B.3 IMPACTS TO RUDERAL LAND COVER - DEER CREEK CONFLUENCE / CENTRAL AVENUE BRIDGE

05 SEPTEMBER 2018

THREE CREEKS PARKWAY - American Rivers, City of Brentwood CA

Restoration Design Group, Inc.

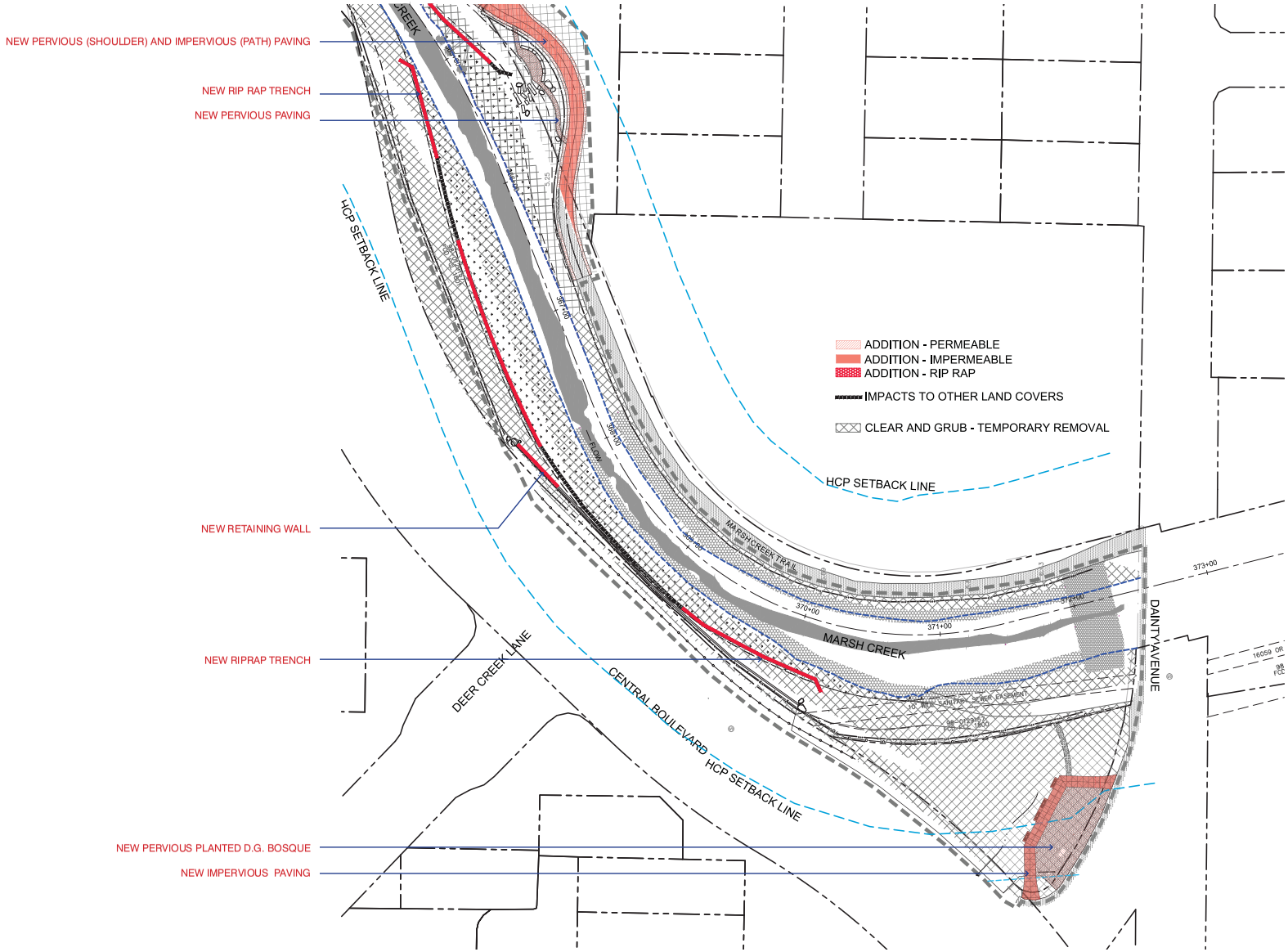


FIGURE B.4 IMPACTS TO RUDERAL LAND COVER - DAINTY TRIANGLE PARK

05 SEPTEMBER 2018

THREE CREEKS PARKWAY - American Rivers, City of Brentwood CA

Restoration Design Group, Inc.

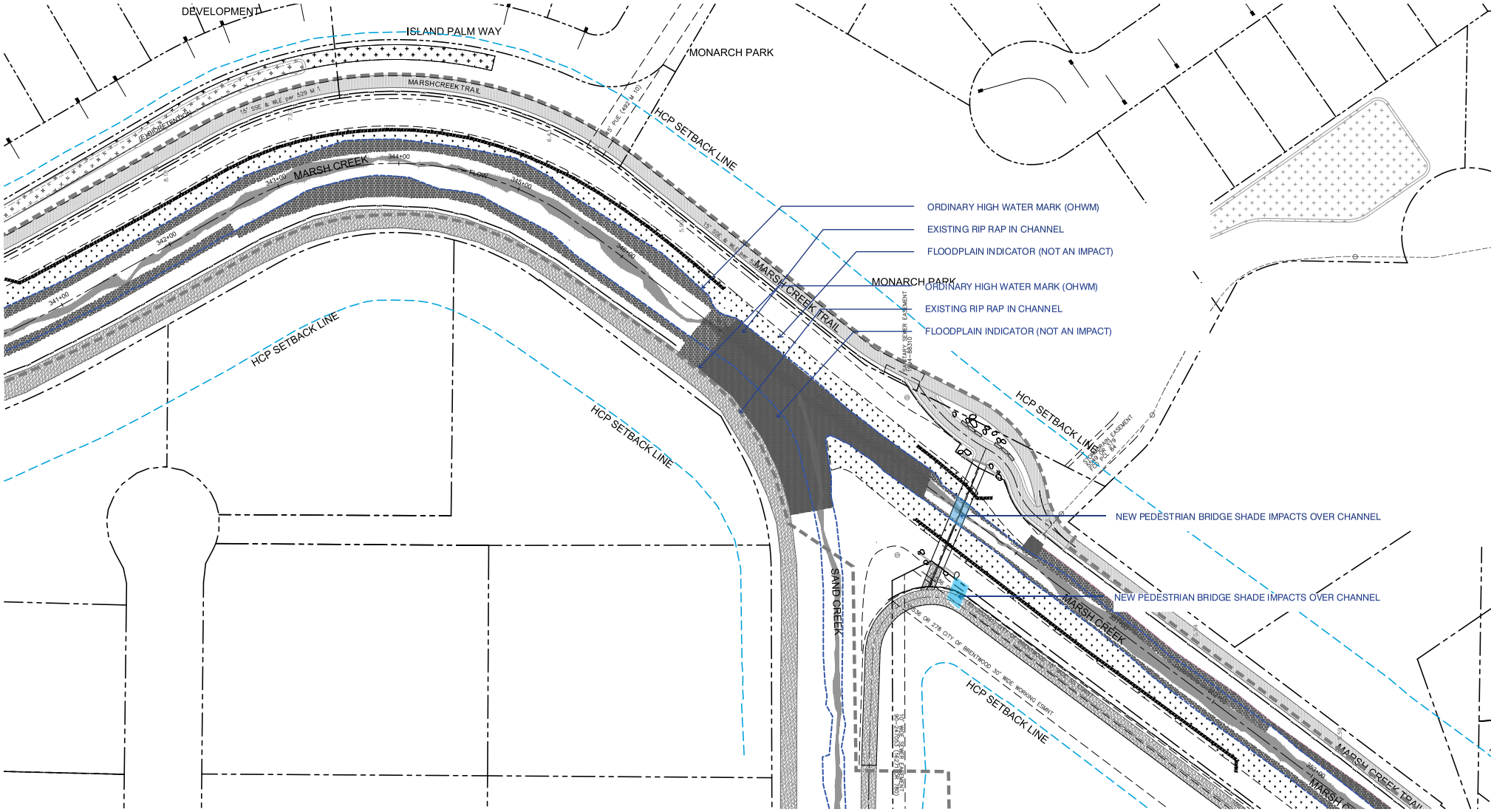


FIGURE C.1 IMPACTS TO CHANNEL/SLOUGH LAND COVER - SAND CREEK CONFLUENCE

05 SEPTEMBER 2018

THREE CREEKS PARKWAY - American Rivers, City of Brentwood CA

Restoration Design Group, Inc.

ATTACHMENT E: WETLAND DELINEATION

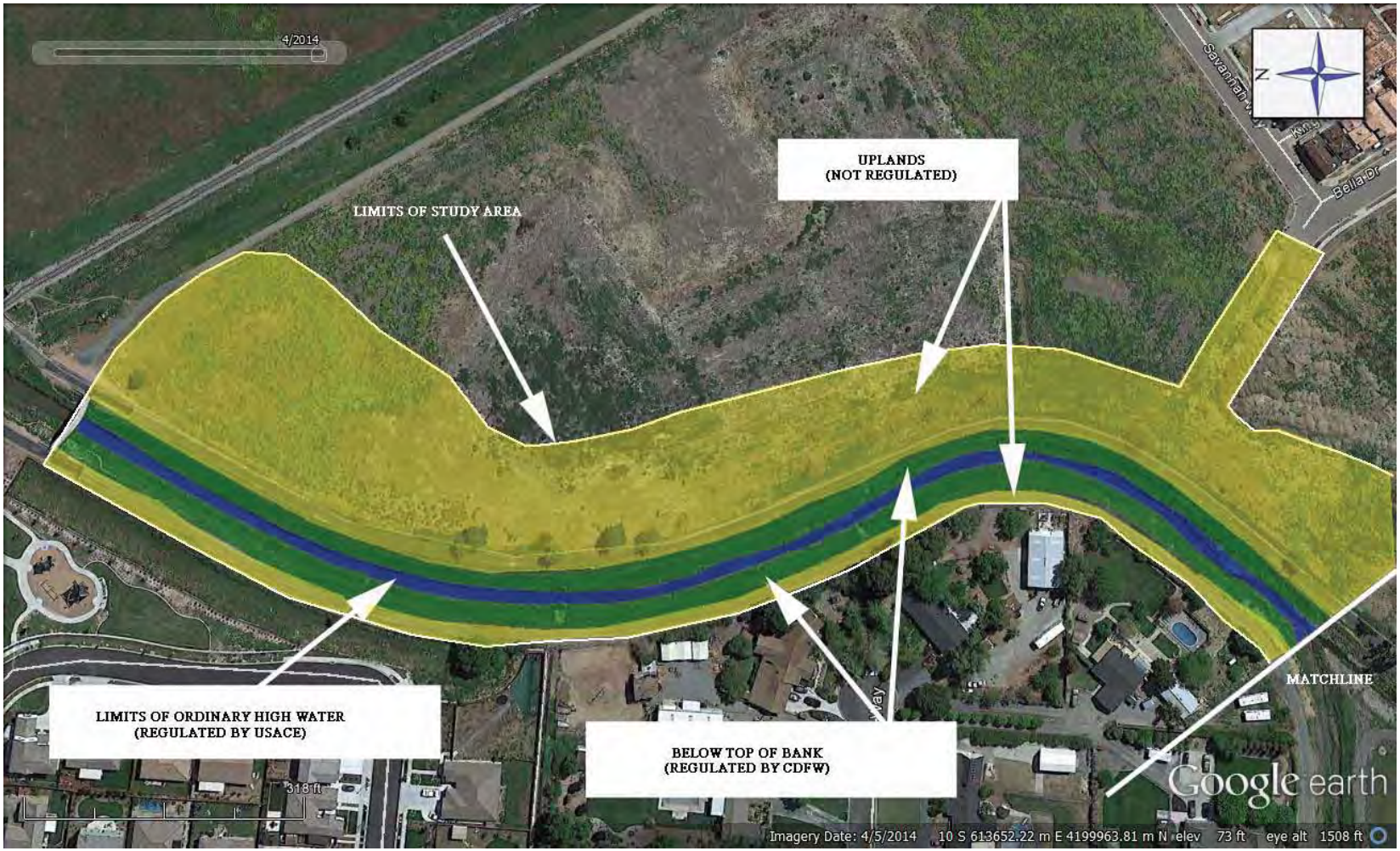
Figures 6a, 6b, and 6c. Preliminary Limits of Jurisdiction

Upper Reach of Project

Figure 6a. Preliminary Limits of Jurisdiction (Upper Reach)

Middle Reach of Project

Figure 6b. Preliminary Limits of Jurisdiction (Middle Reach)



Lower Reach of Project

Figure 6c. Preliminary Limits of Jurisdiction (Lower Reach)

ATTACHMENT F: BIOLOGICAL RESOURCE ASSESSMENT

Wood Biological Consulting, Inc., August 8, 2017

BIOLOGICAL RESOURCE ASSESSMENT FOR THE THREE CREEKS RESTORATION PROJECT AT MARSH CREEK CITY OF BRENTWOOD CONTRA COSTA COUNTY, CALIFORNIA

February 9, 2016
Revised July 25, 2016
Revised August 8, 2017

Prepared for:
Restoration Design Group LLC
Mr. Rich Walkling
2612b Eighth Street
Berkeley, CA 94710
(510) 644-2798
rich@rdgmail.com

Prepared by:
Wood Biological Consulting, Inc.
65 Alta Hill Way
Walnut Creek, CA 94595
(925) 899-1282
mike@wood-biological.com

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SUMMARY

This report presents the results of an assessment of existing or potentially occurring biological constraints to implementation of the proposed Three Creeks Restoration Project at Marsh Creek, City of Brentwood, Contra Costa County, California. The report provides background and site-specific information pertaining to potentially occurring special-status wildlife and plant species and other regulated biological resources (e.g., wetlands), and identifies biological constraints to the proposed project. The conclusions contained herein are based on background research, reconnaissance-level site surveys performed by a qualified biologist, and a review of the proposed site improvements.

The project calls for modifying a section of Marsh Creek approximately 1,220 m (4,000 ft) long by 18 m (60 ft) wide. The total area of grading over all three reaches of the Project is approximately 2.84 ha (7.0 ac). Work would be performed at three separate but contiguous segments, Lower Reach, Middle Reach and Upper Reach. The modified right (east) and left (west) banks of Marsh Creek would be graded to the approximate elevation of the ordinary high water mark (OHWM) to create a new floodplain. The new floodplain would be planted and seeded with native species. The volume of earth to be excavated is approximately 19,125 m^3 (25,000 yd^3).

The project site is situated in a rapidly developing part of eastern Contra Costa County. Adjacent land uses include single-family residential neighborhoods to the north, west and south, and vacant lands zoned for residential development to the east and west. A section of the Marsh Creek Regional Trail follows the top of Marsh Creek's eastern bank.

The entire study area has been highly modified historically by flood control and agricultural activities. No natural, unaltered plant communities are present onsite or the project vicinity. The predominant vegetation type is ruderal. Anthropogenic habitat consisting of plantings is present along the Marsh Creek Regional Trail and on adjacent properties. A narrow band of ruderal freshwater marsh habitat is present along the base of each channel bank.

The project area encompasses both banks of Marsh Creek over a section approximately 1,220 m (4,000 ft) long. The total area below the OHWM is approximately 0.38 ha (0.93 ac); the total area below top of bank is approximately 2.26 ha (5.58 ac). The Marsh Creek channel is presumed to fall under the jurisdiction of the U.S. Army Corps of Engineers, California Department of Fish and Wildlife, and the Central Valley Regional Water Quality Control Board. The project site is located within the service area of the East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan (HCP/NCCP). The project proponents will be applying for coverage under the HCP/NCCP.

The potential for occurrence of a total of 64 special-status plant species was evaluated. No federally or State-listed plant species were detected within the study area and none is expected to occur within the development areas. No target special-status plant species are considered to have a potential for occurrence in the study area due to the history of disturbance of the site, the lack of suitable habitat and/or the fact that they would have been recognizable during the present survey.

The potential for occurrence of a total of 87 special-status animal species was evaluated. One species, **burrowing owl**, was observed nesting within the study area and another, **Swainson's hawk**, was observed hunting on site. Based on site conditions and geographic location, the potential for occurrence of 78 of the target special-status animals can be ruled out due to a lack of suitable habitat or substrate, or geographic isolation from known populations. Although not detected during the present survey, the potential exists for nine special-status species to occur on site or to be adversely affected during construction activities. These include **California red-legged frog, steelhead, Swainson's hawk, white-tailed kite, burrowing owl, Chinook, loggerhead shrike, Pacific pond turtle and silvery legless lizard**. The potential also exists for the presence of numerous **migratory bird species**.

The proposed project would affect waters of the U.S. / waters of the State, and has the potential to impact special-status animal species. Impacts to these resources would be considered significant pursuant to the guidelines of CEQA. In order to avoid, minimize or mitigate for these impacts, specific measures are recommended. With the incorporation of the impact avoidance, minimization and/or mitigation measures outlined in this report, impacts to special-status biological resources would be reduced to a less-than significant level.

LIST OF ABBREVIATED TERMS USED IN THIS DOCUMENT

acronym	explanation	acronym	explanation
°C	degrees Celsius	$ft/ft^2/ft^3$	feet/square feet/cubic feet
°F	degrees Fahrenheit	ha	hectare
ac	acre	HCP	habitat conservation plan
APN	assessor's parcel number	in	inches
BCC	bird species of conservation concern	kg	kilograms
BGEPA	Bald/Golden Eagle Protection Act	km/kph	kilometers/km per hour
BLM	Bureau of Land Management	lbs	pounds
BMPs	Best Management Practices	LSAP	Lake and Streambed Alteration Program
CA	California	$m/m^2/m^3$	meters/square meters/cubic meters
CCR	CA Code of Regulations	MBTA	Migratory Bird Treaty Act
CDFG	CA Dept. of Fish and Game	MBTRA	Migratory Bird Treaty Reform Act
CDFW	CA Dept. of Fish and Wildlife	mi/mph	mile/miles per hour
CEQA	CA Environmental Quality Act	mm	millimeter
CESA	CA Endangered Species Act	msl	mean sea level
CFGC	CA Fish and Game Code	NMFS	National Marine Fisheries Services
CFR	Code of Federal Regulations	NCCP	Natural Community Conservation Plan
cm	centimeters	Occ. #	CNDDB species occurrence no.
CNDDB	CA Natural Diversity Database	OHWM	ordinary high water mark pond turtle
CNPPA	CA Native Plant Protection Act	PPT	Pacific pond turtle
CNPS	CA Native Plant Society	RCD	Resource Conservation District
CRF	CA red-legged frog	RCP	Reinforced Concrete Pipe
CWA	Clean Water Act	RWQCB	Regional Water Quality Control Board
DCD	Dept. of Conservation and Development	SSC	Species of Special Concern
DPS	Distinct Population Segment	U.S.	United States
EBMUD	East Bay Municipal Utility District	USACE	U.S. Army Corps of Engineers
EBRPD	East Bay Regional Park District	USC	U.S. Code
ESU	Evolutionarily Significant Unit	USDA	U.S. Dept. of Agriculture
FCWCD	Flood Control and Water Conservation District	USEPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency	USFS	U.S. Forest Service
FESA	Federal Endangered Species Act	USFWS	U.S. Fish and Wildlife Service
FR	Federal Register	USGS	U.S. Geological Survey
		WEF	wildlife exclusion fencing

LIST OF SCIENTIFIC PLANT NAMES

Scientific names of the plants referred to in the text

Common Name	Scientific Name	Common Name	Scientific Name
alkali mallow	*Malvella leprosa*	milk thistle**	*Silybum marianum*
annual fireweed	*Epilobium brachycarpum*	Monterey pine	*Pinus radiata*
arroyo willow	*Salix lasiolepis*	oleander*	*Nerium oleander*
Bermuda grass**	*Cynodon dactylon*	Oregon ash	*Fraxinus latifolia*
black walnut	*Juglans californica*	perennial rye grass**	*Festuca perennis*
black willow	*Salix gooddingii*	pistachio	*Pistacia vera*
blue wildrye	*Elymus glaucus*	purple vetch*	*Vicia benghalensis*
bristly ox-tongue**	*Helminthotheca echioides*	red brome**	*Bromus madritensis* ssp. *rubens*
broadleaf cattail	*Typha latifolia*	red stemmed filaree*	*Erodium cicutarium*
bull mallow*	*Malva nicaensis*	ripgut brome**	*Bromus diandrus*
CA brome	*Bromus carinatus*	Russian thistle**	*Salsola tragus*
CA sycamore	*Platanus racemosa*	saltgrass	*Distichlis spicata*
CA bulrush	*Schoenoplectus californicus*	summer mustard**	*Hirschfeldia incana*
coast live oak	*Quercus agrifolia*	sweet almond*	*Prunus dulcis*
common evening primrose	*Oenothera elata* ssp. *hookeri*	Tasmanian blue gum**	*Eucalyptus globulus*
common fiddleneck	*Amsinckia intermedia*	three-square	*Schoenoplectus americanus*
coyote brush	*Baccharis pilularis*	tules	*Scirpus* sp., *Bolboschoenus* sp., *Schoenoplectus* sp.
curly dock	*Rumex crispus*	umbrella sedge	*Cyperus eragrostis*
Douglas' mugwort	*Artemisia douglasiana*	valley oak	*Quercus lobata*
dove weed	*Croton setigerus*	Viginia creeper*	*Parthenocissus quinquefolia*
fat-hen	*Atriplex prostrata*	water bentgrass*	*Polypogon viridis*
field bindweed*	*Convolvulus arvensis*	watercress	*Nasturtium officinale*
foxtail barley*	*Hordeum murinum* ssp. *leporinum*	watermint*	*Mentha aquatica*
Fremont cottonwood	*Populus fremontii*	wild lettuce*	*Lactuca serriola*
grape*	*Vitis* sp.	wild oats**	*Avena fatua*
Italian thistle**	*Carduus pycnocephalus*	wild radish**	*Raphanus sativus*
knotgrass	*Paspalum disctichum*	willow	*Salix* sp.
London plane tree	*Platanus × acerifolia*		

* indicates non-native species

** indicates invasive non-native species per CAL-IPC

Special-status species appear in BOLD

LIST OF SCIENTIFIC ANIMAL NAMES

Scientific names of the animals referred to in the text

Common Name	Scientific Name	Common Name	Scientific Name
alligator lizard	*Elgaria* spp.	**Monarch butterfly**	***Danaus plexippus***
American crow	*Corvus brachyrhynchos*	mosquitofish	*Gambusia affinis*
American kestrel	*Falco sparverius*	mourning dove	*Zenaida macroura*
American mink	*Mustela vison*	mule deer	*Odoicoileus hemionus*
barn owl	*Tyto alba*	northern mockingbird	*Mimus polyglottos*
barn swallow	*Hirundo rustica*	northern river otter	*Lontra canadensis*
belted kingfisher	*Megaceryle alcyon*	Norway rat	*Rattus norvegicus*
black phoebe	*Sayornis nigricans*	**Pacific (western) pond turtle**	***Emys marmorata***
black rat	*Rattus rattus*	Pacific treefrog	*Pseudacris regilla*
bluegill	*Lepomis macrochirus*	raccoon	*Procyon lotor*
Botta's pocket gopher	*Thomomys bottae*	red fox	*Vulpes vulpes*
Brewer's blackbird	*Euphagus cyanocephalus*	red-eared (pond) slider	*Trachemys scripta*
brush rabbit	*Sylvilagus bachmani*	red-shouldered hawk	*Buteo lineatus*
bullfrog	*Rana catesbeiana*	red-tailed hawk	*Buteo jamaicensis*
burrowing owl	***Athene cunicularia***	red-winged blackbird	*Agelaius phoeniceus*
CA ground squirrel	*Spermophilus beecheyi*	Say's phoebe	*Sayornis saya*
CA red-legged frog	***Rana draytonii***	**silvery legless lizard**	***Anniella pulchra pulchra***
CA vole	*Microtus californicus*	snowy egret	*Egretta thula*
CA ground squirrel	*Spermophilus beecheyi*	squawfish	*Ptychocheilus grandis*
Chinook	*Oncorhynchus tshawytscha*	steelhead	*Oncorhynchus mykiss irideus*
common raven	*Corvus corax*	striped skunk	*Mephitis mephitis*
coyote	*Canis latrans*		***Buteo swainsoni***
Eastern fox squirrel	*Sciurus niger*		*Gasterosteus aculeatus*
European starling	*Sturnus vulgaris*		*Didelphis virginiana*
feral pigeon	*Columba livia*	western aquatic garter snake	*Thamnophis couchii*
great blue heron	*Ardea herodias*	western fence lizard	*Sceloporus occidentalis*
		western gull	*Larus occidentalis*
	virescens	western meadowlark	*Sturnella neglecta*
house finch	*Carpodacus mexicanus*	white-crowned sparrow	*Zonotrichia leucophrys*
mallard	*Anas platyrhynchos*	yellow-rumped warbler	*Dendroica coronata*

Special-status species appear in BOLD type

Hancock Parcel (see Figure 4)

FIGURE 3. Project Conce

1.0 INTRODUCTION

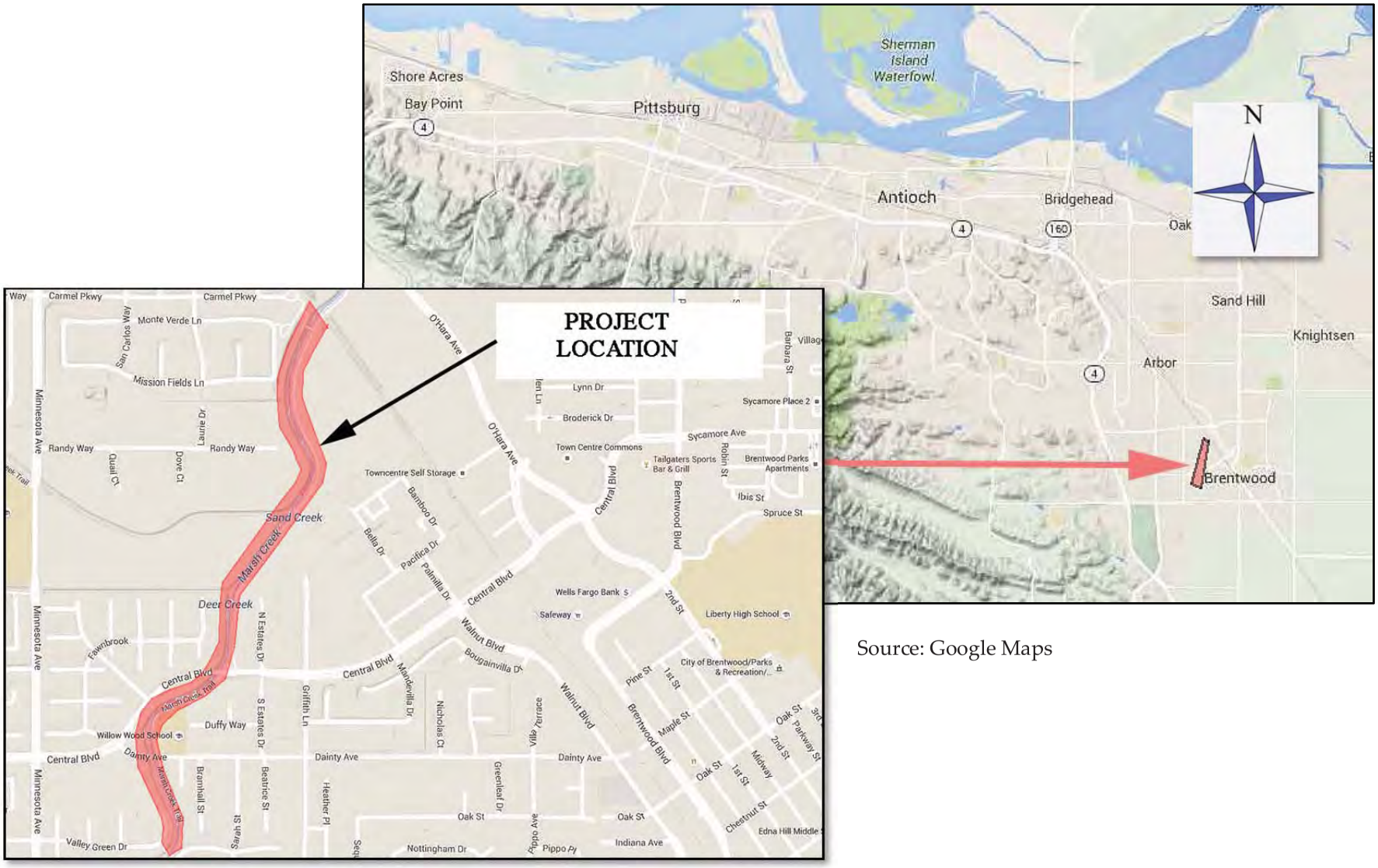
This report presents the results of an assessment of existing or potentially occurring biological constraints to implementation of the proposed Three Creeks Restoration Project at Marsh Creek, City of Brentwood, Contra Costa County, California (Figures 1 and 2). The report provides background and site-specific information pertaining to special-status wildlife and plant species and other regulated biological resources (e.g., wetlands), which may represent constraints to the proposed Project. Included is a discussion of the existing plant communities, wildlife habitats, locally occurring special-status plant and wildlife species and natural communities, and recommended impact avoidance, minimization and/or mitigation measures. This report has been prepared in support of the environmental review by the lead agency pursuant to the California Environmental Quality Act (CEQA), regulatory agencies pursuant to the Clean Water Act (CWA) and California Fish and Game Code (CFGC), and the East Contra Costa County Habitat Conservancy (Habitat Conservancy).

1.1 Project Background and Description

The Three Creeks Restoration Project at Marsh Creek (Project) has been designed to improve flood protection and restore Marsh Creek at the confluence of Sand Creek and Deer Creek in the City of Brentwood. The project site is located on the longest stretch of undeveloped land adjacent to Marsh Creek in this rapidly urbanizing community.

Over the length of the project, the widened channel would improve flood capacity, wildlife habitat and water quality by capturing and filtering water pollutants. The existing Marsh Creek Regional Trail would be relocated to (or near) the new top of bank. The conceptual restoration plan and the limits of the study area are shown in Figure 3.

The project calls for modifying a section of Marsh Creek approximately 1,220 m (4,000 ft) long by 18 m (60 ft) wide. Work would be performed at three separate but contiguous segments, Lower Reach, Middle Reach and Upper Reach (see Figure 3). The total area of grading over all three reaches of the Project is approximately 2.84 ha (7.0 ac). The volume of earth to be excavated is approximately 19,125 m^3 (25,000 yd^3), most if not all of which would be disposed of on the Hancock parcel; it is not known at this time if any earth will need to be off-hauled. Grading would occur during the dry season when creek flows are at their lowest and there is no risk of a sudden water level increase resulting from precipitation events. Grading would be completed during a single construction season. Access to the site would be from Sungold Court at the downstream end of the lower reach, Minnesota Avenue through the Hancock Parcel in the middle reach, Central Blvd in the upper reach, and Dainty Avenue at the upstream end of the upper reach.

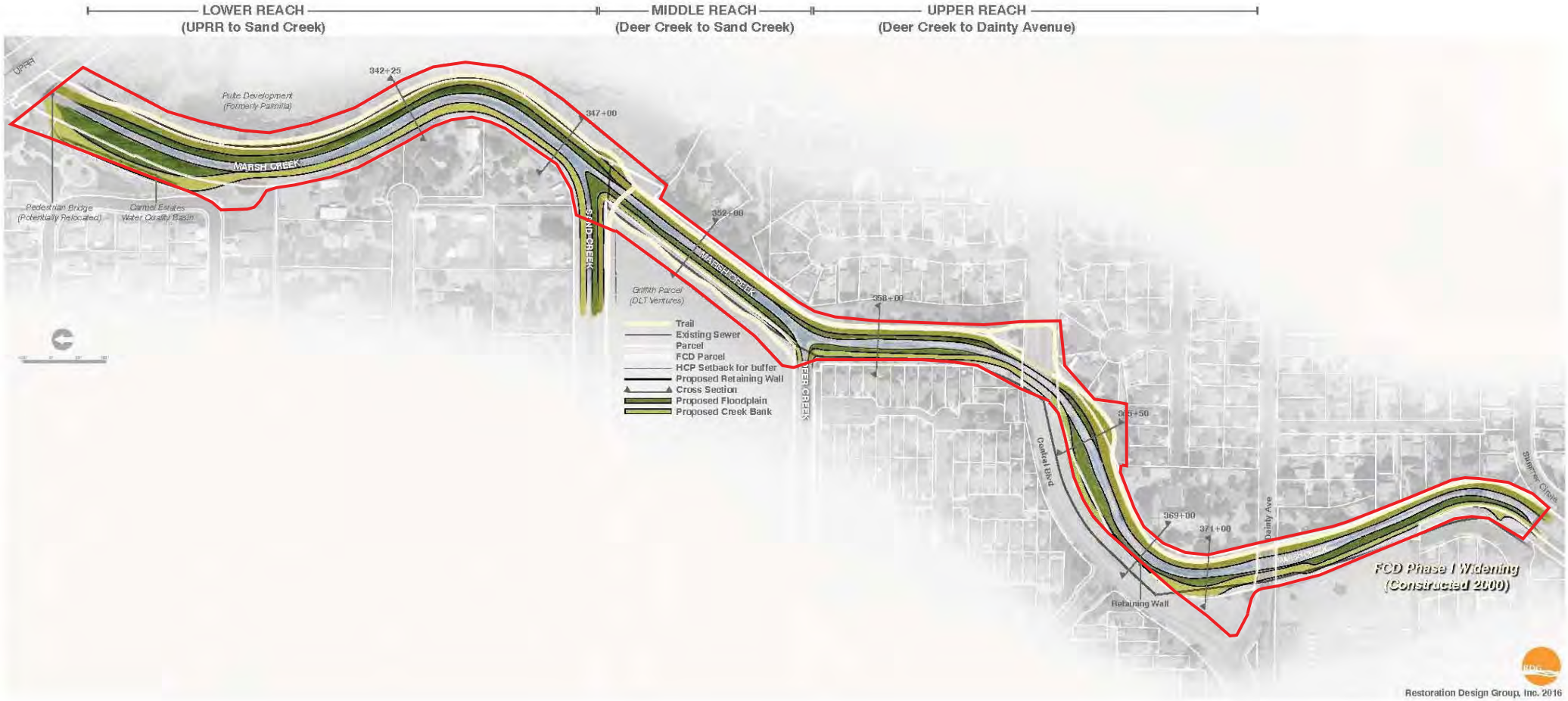


Source: Google Maps

Figure 1. Project Location

Source: Google Earth, imagery dated 10/30/2015

Figure 2. Aerial View of Project Vicinity



THREE CREEKS PARKWAY RESTORATION PROJECT

07.07.16

American Rivers
Rivers Connect Us

Contra Costa County
Flood Control
& Water Conservation District

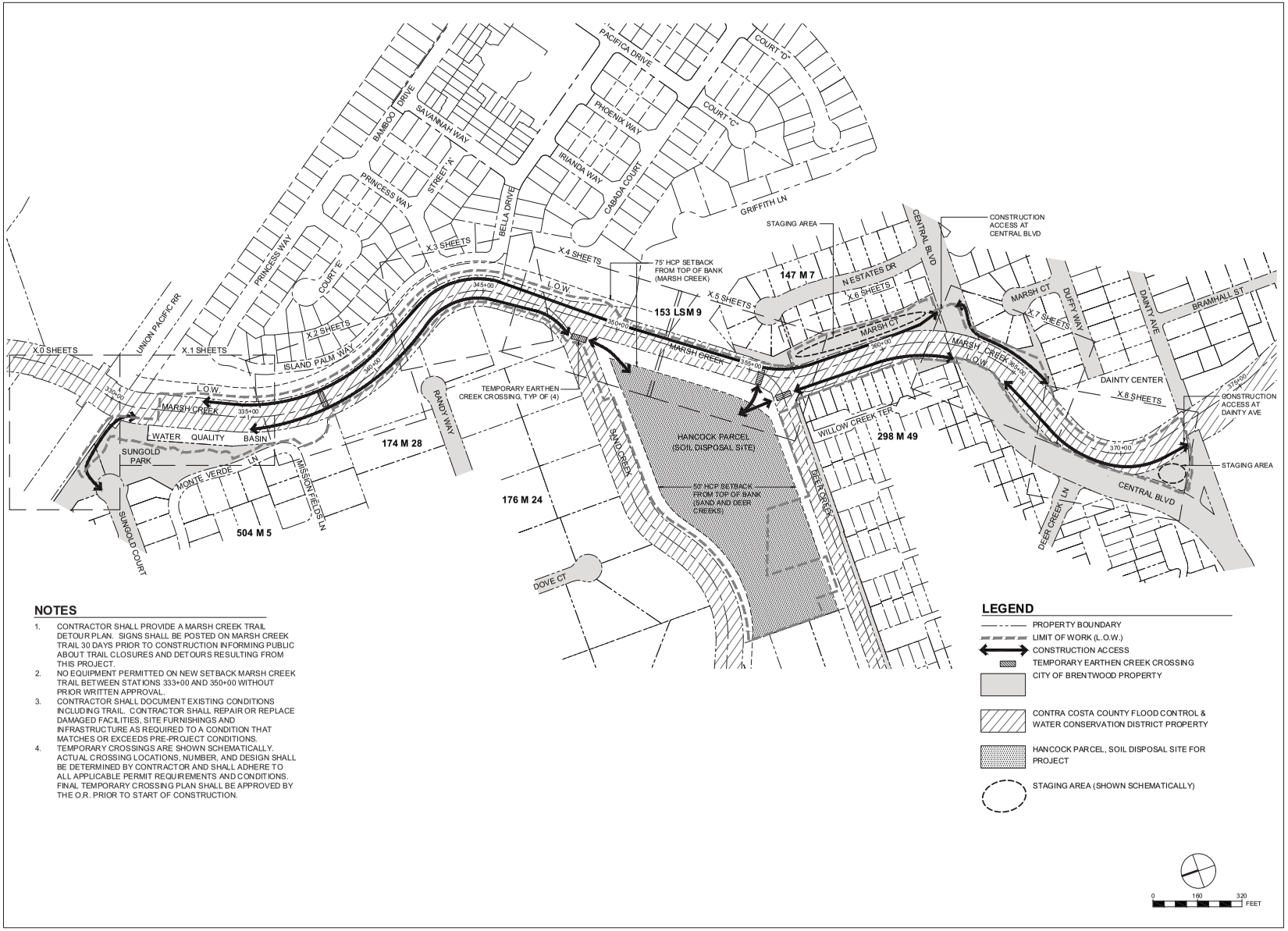
The Upper Reach extends from the Dainty Avenue Bridge over Marsh Creek downstream to the confluence of Deer Creek. This segment of Marsh Creek is approximately 503 m (1,650 ft) long and covers 1.17 ha (2.9 ac). Between the Dainty Avenue Bridge and the Central Avenue Bridge, uplands on the right (east) and left (west) bank would be graded approximately down to the elevation of the ordinary high water mark to create a new floodplain covering approximately 0.28 ha (0.7 ac). The new floodplain would be planted and seeded with native species.

The Middle Reach is situated between the confluences of Sand Creek and Deer Creek. This segment of Marsh Creek is approximately 244 m (800 ft) long and covers 0.45 ha (1.1 ac). The right (east) and left (west) banks of the Middle Reach would be graded approximately down to the elevation of the ordinary high water mark to create a new floodplain covering approximately 0.12 ha (0.3 ac). The new floodplain would be planted and seeded with native species.

The Lower Reach of the project is situated between the confluence of Sand Creek and the pedestrian bridge connecting the Marsh Creek Regional Trail to Sungold Park, just upstream of the Union Pacific Railroad trestle across Marsh Creek. This segment of Marsh Creek is 488 m (1,600 ft) long and covers approximately 0.12 ha (3.0 ac). Uplands on the right (east) and left (west) banks would be graded approximately down to the elevation of the ordinary high water mark to create a new floodplain covering approximately 0.45 ha (1.1 ac), which would be planted and seeded with native species. The existing Marsh Creek Regional Trail would be re-routed around the eastern rim of the floodplain.

To accommodate construction, spoils from excavation would be spread over a 3.6 ha (9 ac) portion of the so-called Hancock parcel, which is situated beyond the left bank of Marsh Creek, between the confluences of Deer Creek and Sand Creek (Figure 4). These lands are strictly in uplands and are located above the top of bank of all three water courses. An estimated volume of 19,125 m^3 (25,000 yds^3) would be disposed of at this location. On the Hancock parcel, spoils disposal would be a minimum of 15 m (50 ft) from the current top of bank at Sand Creek and Deer Creek and 23 m (75 ft) from the current top of bank at Marsh Creek.

As many as six temporary earthen crossings would be constructed courses to permit the movement of earth moving equipment. Temporary crossings would be needed at Marsh Creek, Deer Creek and Sand Creek. Crossings would consist of earthen fill laid over a section of pipe placed in the flow line to maintain channel flows. Each crossing would require approximately 459 m^3 (600 yds^3) of temporary fill covering approximately 233 m^2 (2,500 ft^2). Earthen fill would be compacted and armored with geotextile fabric to prevent the release of sediment into the stream course. Upon completion of project grading, earthen fill, fabric and pipe would be removed and the



NOTES

1. CONTRACTOR SHALL PROVIDE A MARSH CREEK TRAIL DETOUR PLAN. SIGNS SHALL BE POSTED ON MARSH CREEK TRAIL 30 DAYS PRIOR TO CONSTRUCTION INFORMING PUBLIC ABOUT TRAIL CLOSURES AND DETOURS RESULTING FROM THIS PROJECT.
2. NO EQUIPMENT PERMITTED ON NEW SETBACK MARSH CREEK TRAIL BETWEEN STATIONS 333+00 AND 350+00 WITHOUT PRIOR WRITTEN APPROVAL.
3. CONTRACTOR SHALL DOCUMENT EXISTING CONDITIONS INCLUDING TRAIL. CONTRACTOR SHALL REPAIR OR REPLACE DAMAGED FACILITIES, SITE FURNISHINGS AND INFRASTRUCTURE AS REQUIRED TO A CONDITION THAT MATCHES OR EXCEEDS PRE-PROJECT CONDITIONS.
4. TEMPORARY CROSSINGS ARE SHOWN SCHEMATICALLY. ACTUAL CROSSING LOCATIONS, NUMBER, AND DESIGN SHALL BE DETERMINED BY CONTRACTOR AND SHALL ADHERE TO ALL APPLICABLE PERMIT REQUIREMENTS AND CONDITIONS. FINAL TEMPORARY CROSSING PLAN SHALL BE APPROVED BY THE O.R. PRIOR TO START OF CONSTRUCTION.

LEGEND

- PROPERTY BOUNDARY
- LIMIT OF WORK (L.O.W.)
- CONSTRUCTION ACCESS
- TEMPORARY EARTHEN CREEK CROSSING
- CITY OF BRENTWOOD PROPERTY
- CONTRA COSTA COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT PROPERTY
- HANCOCK PARCEL, SOIL DISPOSAL SITE FOR PROJECT
- STAGING AREA (SHOWN SCHEMATICALLY)

REVISIONS

DATE	DESCRIPTION

THREE CREEKS PARKWAY RESTORATION PROJECT
CONSTRUCTION DOCUMENTS

50% SET

Restoration Design Group, Inc.
2612 Eighth Street, Suite B
Berkeley, CA 94710
T 510.644.2798 F 510.644.2799
www.restorationdesigngroup.com

DESIGN BY: ES
DRAWN BY: ES / HM / PR
CHECKED BY: ES / MT
SCALE: 1" = 160'-0"
DATE: JULY 7, 2017

SITE OVERVIEW

SHEET
T-2

original channel conditions restored. Any surface flows in these channels at the time of installation would be uninterrupted and BMPs will be in place to ensure there is no release of sediment downstream.

The modified right (east) and left (west) banks of Marsh Creek would be graded to the approximate elevation of the ordinary high water mark (OHWM). The need for installing a diversion barrier running parallel to the shoreline of Marsh Creek is anticipated. However, complete dewatering of Marsh Creek to implement the Project would not be required and normal creek flows would be maintained throughout the construction period. In the unlikely event that water is in the creek during the installation of rootwads, the project will divert water to the opposite side of the low flow channel during installation. The Project would not result in the construction of any permanent impediments to creek flow or fish movement. Project implementation would require removal of predominantly ruderal vegetation consisting of herbaceous annual and perennial grasses and forbs. Several native oaks and non-native trees and vines would be impacted. The new right bank and floodplain would be revegetated with native trees and shrubs, and all bare ground surfaces would be seeded with native grasses and forbs.

The Project would benefit Chinook and other wildlife. Chinook migrate up Marsh Creek each year to spawn but there is little to no shade along the creek between the Sacramento-San Joaquin Delta and the City of Brentwood. Planting trees alongside the creek would shade the surface waters, decrease water temperatures, increase dissolved oxygen levels, and help reduce fish kills during warm weather, which have been a problem in recent years. Increased riparian vegetation will provide food for insects which will become food for fish and wildlife. The Project also calls for the installation of trees which, once mature, would provide nesting and perching habitat for Swainson's hawk, a State-listed threatened species.

The restored section of Marsh Creek will become a healthy and natural amenity along this heavily used section of the Marsh Creek Regional Trail, located less than 1.6 km (1 mi) from the city hall in downtown Brentwood. The Project and adjacent parks will transform this easily accessible area into a natural destination for the citizens of Brentwood, Oakley and surrounding areas. It will become a place where community members will bike, walk, and stroll to discover and enjoy the natural beauty of Marsh Creek.

The Project represents the second undertaking in the past few years to restore sections of Marsh Creek between the City of Brentwood and its mouth at the San Joaquin River. It is one of several anticipated projects that will re-establish a wildlife corridor between the protected headwaters of Marsh Creek on Mount Diablo and the Sacramento-San Joaquin Delta.

The Project is a result of numerous partners working together for over a decade. Project partners include: City of Brentwood, Contra Costa County Flood Control and Water Conservation District (FCWCD), Friends of Marsh Creek Watershed, American Rivers, The Palmilla Project Owner, LLC., East Bay Regional Park District (EBMUD), East Contra Costa Habitat Conservancy (ECCHC), Contra Costa County Department of Conservation and Development (DCD), Restoration Design Group, and Contra Costa Resource Conservation District (RCD). Funding for the Project has been generously provided by the The Palmilla Project Owner LLC., and the Department of Water Resources Urban Streams Restoration Program. Project partners anticipate the channel can be restored by summer 2017.

2.0 METHODS AND LIMITATIONS

The findings for this biological constraints assessment are based on the following:

1) database queries for the Brentwood, Jersey Island, Bouldin Island, Antioch South, Tassajara, Antioch North, Woodward Island, Byron Hot Springs, and Clifton Court Forebay 7.5-minute USGS quadrangles from the available databases (CNDDB, 2017; CNPS, 2017; USFWS, 2017; see Appendix B);
2) an assessment of habitat types and surrounding land uses completed by reviewing recent aerial photographs; and
3) four reconnaissance-level surveys by qualified biologists.

Additional information regarding special-status and common plant and wildlife species was obtained by review of published lists and floras including CDFW (2017a,b,c,d), Ertter and Naumovich (2013), and Lake (2010). Nomenclature for common, widespread plants and animals conforms to Baldwin et al., (2012) and CDFW (CDFG[1], 2005), respectively; plant names have been updated to conform to the Jepson Online Interchange.[2] Nomenclature for special-status plants and animals conforms to CDFW (2017a and 2017c, respectively). Plant community names conform to CDFG (2010), Sawyer et al., (2009), and Cowardin et al. (1979).

An initial reconnaissance-level survey was performed by biologist Michael Wood on May 12, 2015. The study area initially encompassed a section of Marsh Creek from just upstream of the confluence of Deer Creek and Sand Creek, extending downstream approximately 1,220 m (4,000 ft) to the Union Pacific Railroad crossing, and from the top of the left (western) bank to approximately 732 m (2,400 ft) beyond the top of the right (eastern) bank (see Figure 3, above).

[1] On January 1, 2013, the California Department of Fish and Game (CDFG) changed its name to the CDFW; all publications released prior to that date are referenced by the former name CDFG.

[2] available online at http://ucjeps.berkeley.edu/interchange.html

The study area was subsequently expanded upstream to the Dainty Avenue Bridge over Marsh Creek, extending the Project another 503 m (1,650 ft). A second survey of the expanded area was performed by biologists Michael Wood and Isabelle de Geofroy on November 17, 2015. During both surveys, all habitat types at and adjacent to the study area were surveyed and classified, and plant and animal species observed were recorded.

As the proposed project limits expanded further, a third survey was warranted. This site reconnaissance was performed by Mr. Wood on July 22, 2016, focusing on the section of Marsh Creek upstream of Dainty Avenue and the bio-system detention swale beyond the left bank of the Lower Reach of the project. Finally, to address the addition of the Hancock parcel as a soil disposal site, a fourth reconnaissance survey was performed by Mr. Wood on July 24, 2017.

A preliminary delineation of jurisdictional waters of the U.S./waters of the State was also performed for the Upper, Middle and Lower reaches of the proposed project[3] (see Section 4.1.2, below). Methods were in accordance with the procedures outlined in *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE, 2008). Determination of the limits of the ordinary high water mark (OHWM) conformed to procedures outlined in USACE (2006).

Focused wildlife surveys were not performed as part of this analysis. However, the timing of the May 2015 survey corresponded with the spring flowering season for special-status plant species (see Section 4.2, below).

3.0 EXISTING CONDITIONS

The Project is located in a section of Marsh Creek in the City of Brentwood and overlaps three parcels encompassing a section of the active channel of Marsh Creek, the right (eastern) bank, and adjacent uplands to the east. The upland parcels (APN 017-170-007 and 008) are privately owned[4], vacant residential land. Another upland parcel (017-110-011) is also privately owned[5]. The section of Marsh Creek encompassing the Project (APN 017-17c-004) is owned and maintained by the Flood Control and Water Conservation District (FCWCD). The Marsh Creek Regional Trail is maintained by the East Bay Regional Park District (EBRPD), which has a recreational easement across the site.

[3] Although the study area includes a section of Marsh Creek extending upstream of the Upper Reach, that area was not formally delineation as no surface impacts are proposed.

[4] The Palmilla Project LLC

[5] Referred to as the Hancock parcel

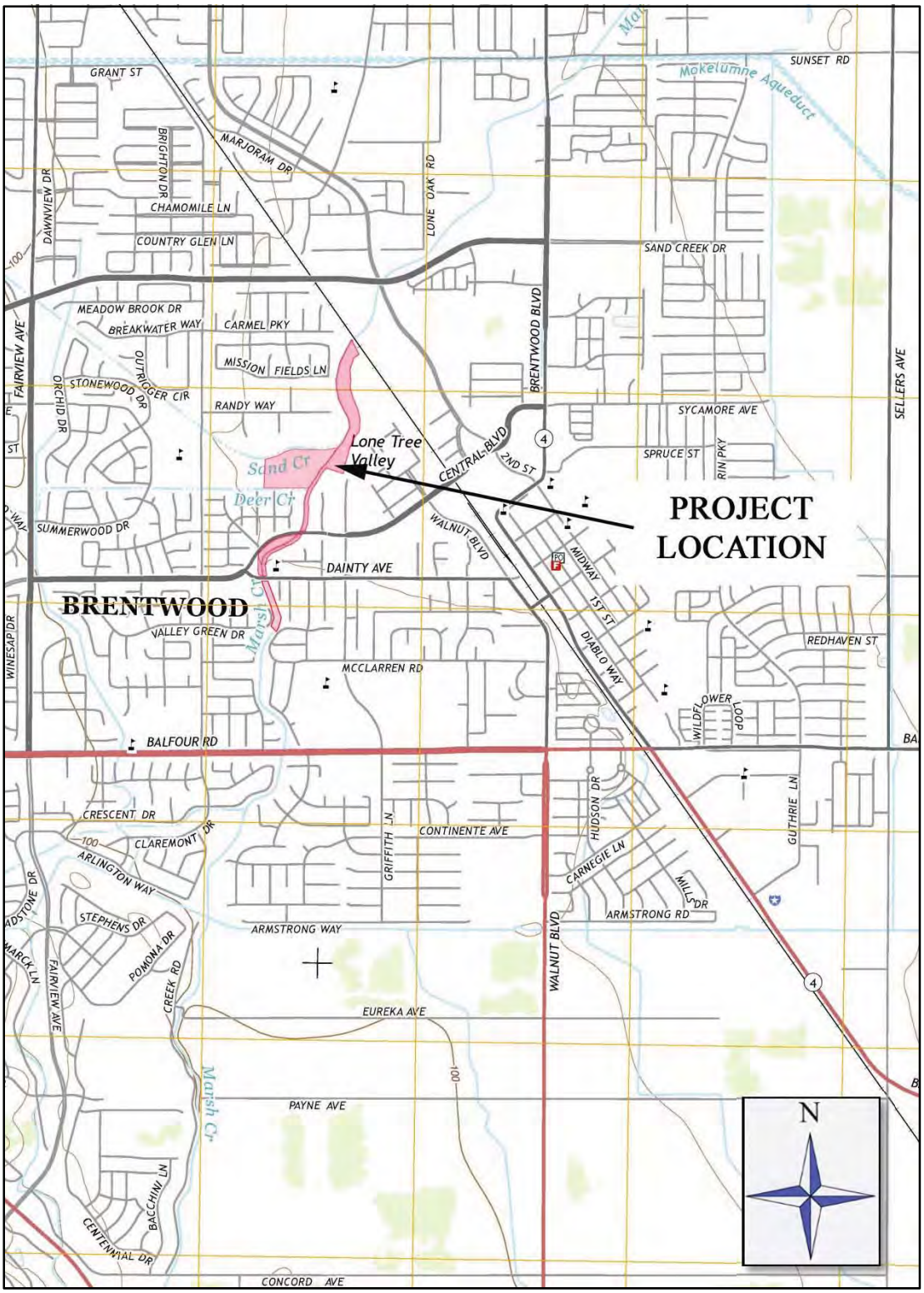
The Project site covers a section of Marsh Creek approximately 1,220 m (4,000 ft) long and 17 m (55 ft) wide and approximately 1.6 ha (4 ac) of adjacent uplands. Elevations of the channel bottom range from 22-19 m (73-62 ft) above mean sea level (msl). Elevations of the adjacent uplands range from 25-22 m (82-72 ft) above msl. Marsh Creek is mapped by the USGS as a perennial creek and flows from south to north. Deer Creek, an intermittent creek, empties into Marsh Creek from the west, approximately 495 m (1625 ft) north (downstream) of Dainty Avenue. Sand Creek, an intermittent creek, empties into Marsh Creek from the west, approximately 260 m (855 ft) north (downstream) of Deer Creek.

The Project is situated in a rapidly developing part of eastern Contra Costa County. Adjacent land uses include single-family residential neighborhoods to the north, west and south, and vacant lands zoned for residential development to the east and west. A section of the Marsh Creek Regional Trail follows the top of Marsh Creek's right (east) bank.

The Dainty Avenue Bridge across Marsh Creek marks the upstream end of the Project. Central Avenue crosses Marsh Creek at the middle portion of the Upper Reach. The pedestrian bridge crossing Marsh Creek delimits the downstream end of the Project. The Union Pacific Railroad crosses Marsh Creek just downstream of the Project. Upstream of the Dainty Avenue Bridge, the Marsh Creek channel has been widened to increase flood capacity; a pedestrian bridge crossing Marsh Creek at connecting Valley Green Drive and Summer Circle delimits the upstream end of the study area.

The entire study area has been highly modified historically by flood control and agricultural activities. The upland portions of the study area were dryland farmed as recently as 2003 and were under cultivation at least as long ago as 1938; Marsh Creek has had much the same alignment going back at least as long ago as then. Although most of the Marsh Creek channel on site is lined with earthen banks, portions have been armored with mortared riprap. Multiple storm drains outfall into the channel. The left (western) bank is topped with a gravel roadbed and backs up onto fenced back yards or adjacent residences, and an agricultural field. The right (east) bank is topped with the paved Marsh Creek Regional Trail and bordered with an old barbed-wire fence. The upland field within the project site is former agricultural land that has gone fallow but is routinely disked for weed and fire control.

Although native plant species are present, none of the habitats present are considered indigenous and natural; each is characterized as a product of post-disturbance recolonization. Characteristic photographs illustrating the conditions of the study area are provided in Appendix A. A topographic map illustrating the project site and vicinity is provided in Figure 5.



Source: USGS Brentwood 7.5-minute quadrangle, 2015

Figure 5. Topographic Map of Project Vicinity

Two soil types are mapped at the project location (USDA, 2015a); Sorrento silty clay loam and Capay clay, 0 to 2 percent slopes. Sorrento silty clay loam belongs to the Sorrento series, which consists of well-drained soils that formed in alluvium from sedimentary rock and are found in valley fill and on alluvial fans (USDA, 1977). These soils are in valley fill and on alluvial fans. Slopes are 0 to 2 percent. Elevation ranges from 8-46 m (25-150 ft). The average annual air temperature is 15° C (59° F), the average annual frost-free season is 260-300 days, and the average annual rainfall is 36-41 cm (14-16 in). These soils are dry from June to October and are moist from December to June in most years. Sorrento soils are classified as calcic haploxerolls. The vegetation is typically dominated by annual grasses and forbs.

Sorrento silty clay loam is nearly level soil on alluvial fans (USDA, 2015a). Included with this soil in mapping are Brentwood clay loam, Garretson loam, and Sycamore silty clay loam. This soil has moderately slow permeability. Runoff is slow, and the hazard of erosion is none of slight where the soil is tilled and exposed. Although not considered a hydric soil type, Sorrento silty clay loam includes unnamed hydric soils located on alluvial fans (USDA, 2015b). A majority of the study area is mapped as supporting this soil unit.

Capay clay, 0 to 2 percent slopes belongs to the Capay series, which consists of moderately well-drained soils on lower edges of valley fill and on old benches that have been slowly dissected. These soils formed in alluvium from sedimentary rock. Slopes are 0 to 9 percent and elevation ranges from 3-153 m (10-500 ft) above sea level. The average annual temperature is 15°C (59°F), the average annual frost-free season is 250 to 300 days, and the average annual rainfall is 36-41 cm (14-16 in). Permeability and run-off are slow, and the hazard of erosion is slight. The series is classified as a Typic Chromoxerert (USDA 1977). The natural vegetation consists of annual grasses and forbs with a few scattered oaks.

The specific mapping unit occurring in the study area is Capay clay, 0 to 2 percent slopes. Runoff is very slow, and there is no hazard of erosion where the soil is tilled and exposed. Included in this mapping unit are areas of Rincon clay loam, Brentwoodclay loam, and Marcuse clay. Capay clay, 0 to 2 percent slopes is not considered a hydric soil, but inclusions of Marcuse clay, which may be found in depressions within this unit, are listed as hydric (USDA 2015b).

3.1 Plant Communities

As stated above, vegetation occurring within the study area is characteristic of a post-disturbance condition. The predominant vegetation type is ruderal. Anthropogenic habitat consisting of plantings is present along the Marsh Creek Regional Trail and on adjacent properties. A narrow band of ruderal freshwater marsh habitat is present along the base of each channel bank. One stand of creeping rye grass, which was likely planted as part of a restoration effort, is located on the west bank of Marsh Creek just

north of the Dainty Avenue Bridge. Uplands associated with the Hancock parcel are characterized as anthropogenic. Plant assemblages occurring within the study area are described below.

Anthropogenic Plant Associations

Anthropogenic plant associations are those dominated by plant species introduced by humans and established or maintained by human disturbances or activities (Holland and Keil, 1990). Some are entirely artificial such as areas under active cultivation (e.g., rowcrops, orchards, vineyards, ornamental landscaping). Others include areas used as rangeland or pasture, and areas influenced by urban or suburban landscaping or plantings. On such sites, the native vegetation has typically been removed by clearing in preparation for cultivation, landscaping, or development. Cleared areas that are planted with or colonized by non-indigenous plant species can create distinct communities dominated by annual grasses and forbs, shrubs, or trees. Some of these communities are only perpetuated with direct human intervention such as irrigation or grazing, while have naturalized and are able to persist without artificial means. In some situations, introduced non-indigenous species invade native habitats, altering the composition of the native understory or canopy, or both.

Within the study area, anthropogenic habitats consist of a narrow band of remnant ornamental plantings along the eastern edge of the Marsh Creek Regional Trail in the Lower Reach, and over the Hancock parcel. Plantings along the trail consist of dense vines of grape and Virginia creeper, pistachio, and sweet almond. These plantings have apparently naturalized and are able to persist without cultivation or irrigation. Plantings along the western side of the channel in the Lower Reach, associated with the adjacent residences and the neighborhood park, include Tasmanian blue gum, Monterey pine, silk tree, black walnut, London plane tree, and oleander, among others. Similar plantings occur over the length of the Marsh Creek Regional Trail and the back yards of residences abutting the Project, along with numerous mature valley oaks and coast live oaks. Several willow trees are present at the upper end of the study area. Located on the right bank immediately downstream of the pedestrian bridge crossing are several mature black willow and arroyo willow trees. On the opposite bank are several planted trees including two California sycamores, one valley oak and one Oregon ash.

The Hancock parcel is a fallow field and is routinely disked. At the time of the present survey, the property had been recently disked. Plant cover was low, consisting of the current year's regrowth of such non-native species as field bindweed, Italian ryegrass, Italian thistle, ripgut brome, wild lettuce, and wild oats. Scattered native species detected include alkali mallow, annual fireweed, and salt grass. Remnant orchard trees present include sweet almond and black walnut.

Anthropogenic habitat is not classified by Sawyer et al. (2009); it would be classified as upland following Cowardin et al. (1979). Unless found to support special-status plant or animal species, or as otherwise regulated under local tree or zoning ordinances, impacts to anthropogenic habitats typically would not be regarded as significant pursuant to CEQA guidelines.

Creeping Rye Grass Turfs

As described in Sawyer et al. (2009), the Creeping Rye Grass Turfs Alliance (*Leymus triticoides*[6] Herbaceous Alliance) occurs on heavy clay to clay loam soils. Stands are generally on poorly drained floodplains, drainage and valley bottoms, mesic flats and slopes, and marshes. Creeping rye grass is adapted to a wide range soil types and is tolerant of alkaline and saline conditions. Found along coastal northern, central and southern California, Creeping Rye Grass Turfs extend into the Sacramento-San Joaquin River Delta, the Central Valley and the Mono Basin, occurring at elevations from 0-2300 m (0-7544 ft).

Membership in this alliance requires that creeping rye grass comprise greater than 50 percent relative cover in the herb layer. The Creeping Rye Grass Turfs Alliance conforms to the Creeping Ryegrass Grassland (CA Vegetation code 61.41.080.00) and Valley Wildrye Grassland as described in Holland (1986; Holland code 42140). Areas dominated by creeping rye grass occur in uplands but may also be classified as palustrine emergent persistent seasonally flooded/saturated freshwater wetlands (P-EM1-E0) following Cowardin et al. (1979). Creeping rye grass is listed as a "facultative" (FAC) wetland indicator species (Lichvar et al., 2014), indicating that the species is equally found in wetlands as in uplands.

As a natural community, the Creeping Rye Grass Turf Alliance has been assigned a global and state rarity rating of G4/S3 by the CDFW (CDFG 2010, Sawyer, *et al.* 2009). Vegetation alliances given a rarity ranking of G1, G2 or G3, they are considered to be of high inventory priority and are often considered to meet the criteria for consideration as a special-status natural community; alliances ranked as G4 or G5 are generally considered common enough to not be of concern (CDFG 2010). This standard, however, is not universally applied either by consultants or by lead agencies or the CDFW.

In the strictest interpretation of the CEQA guidelines, natural stands of creeping rye grass should be mapped and impacts documented. But there is no particular threshold regarding the size, extent or density of such stands with which to determine the

[6] Since publication of Sawyer et al. (2009), the scientific name for creeping rye grass, also commonly known as creeping wildrye, has been changed to *Elymus triticoides*. However, for purposes of determining its wetland indicator status, the previous name *Leymus triticoides* is used per Lichvar et al. (2014).

significance (*sensu* CEQA) of such stands, or even what constitutes a "natural condition" as the species easily recolonizes graded or severely altered sites.

Within the study area, creeping rye grass occurs in a dense patch on a terrace along the west (left) bank of Marsh Creek just north (downstream) of the Dainty Avenue Bridge, and in scattered patches upstream of the Dainty Avenue Bridge. This vegetation was likely planted as part of a previous restoration effort. Relative cover of this species is estimated at 95 percent; additional species identified within this plant community include curly dock (FAC), Bermuda grass (FACU), field bindweed (UPL), bristly ox-tongue (FACU), and fat-hen (FACW), among others.

Because the patch of creeping rye grass on site is situated beyond the top of the low-flow channel, it would not qualify as a wetland under the federal definition by failing to meet the wetland hydrology criterion; impacts would not be regulated under the CWA. And considering the highly altered nature of the site, the patch does not constitute a naturally occurring plant community. As such, impacts to this stand arguably do not meet the significance criteria pursuant to CEQA guidelines. Therefore, no impact avoidance, minimization, or mitigation measures are warranted.

Ruderal Habitat

Ruderal habitat is that from which the native vegetation has been completely removed by grading, cultivation, or other historic surface disturbances. Left undeveloped, such areas typically become recolonized by invasive exotic species. Scattered native species might recolonize the site after disturbance has ceased. Ruderal sites are typically dominated by herbaceous species, although scattered woody shrubs and trees may also begin to appear if left undisturbed long enough. Ruderal sites are characteristic of road sides, fallow agricultural fields, vacant lots, and large landslides.

Within the study area, ruderal habitat is present along the Marsh Creek Regional Trail, on the banks of Marsh Creek, in the bio-system detention basin, and throughout the upland fields associated with the Palmilla project. All of these areas have been altered historically by grading and filling. Along the banks of Marsh Creek, ruderal habitat on site is dominated by non-native grasses and forbs such as bristly ox-tongue, bull mallow, field bindweed, Italian ryegrass, Italian thistle, milk thistle, red brome, red-stemmed filaree, ripgut brome, summer mustard, wild lettuce, wild oats, and wild radish, among others. Native plant species detected on the channel banks include alkali mallow, blue wildrye, California brome, common evening primrose, and Douglas' mugwort.

Although the upland field had been disked prior to the survey, based on the surrounding vegetation and plant debris on site, the site is presumed to be dominated by bull mallow, field bindweed, foxtail barley, Italian thistle, purple vetch, red-stemmed filaree, Russian thistle, summer mustard, and wild oats. Native species

detected include alkali mallow, common fiddleneck, coast live oak, coyote brush, dove weed, and valley oak.

Ruderal habitat is not specifically described by Sawyer, et al. (2009); it would be classified as upland following Cowardin, et al. (1979).

Ruderal Freshwater Marsh

Freshwater marsh typically occurs in low-lying sites that are permanently flooded with fresh water and lacking significant current. This plant community is found on nutrient-rich mineral soils that are saturated for all or most of the year. Freshwater marsh is most extensive where surface flow is slow or stagnant or where the water table is so close to the surface as to saturate the soil from below. Freshwater marsh is distributed along the coast and in coastal valleys near river mouths and around the margins of lakes, springs, and streams (Holland, 1986). There are numerous phases of freshwater marsh. Emergent freshwater marsh, for example, characteristically forms a dense vegetative cover dominated by perennial, emergent monocots 0.3-4.6 m (1-15 ft) high that reproduce by underground rhizomes. Vernal or seasonal freshwater marsh occurs on sites that are wet following winter rains but may be completely dry by summer; such sites support mostly low-growing annual herbs.

Within the study area, freshwater marsh species occur in a narrow band or patches along the shoreline of Marsh Creek. The vegetation is dominated by the non-native species watermint (FACW[7]) and water bentgrass (FACW) and the native species knotgrass (FACW). Other native species encountered in scattered patches include broadleaf cattail (OBL), California bulrush (OBL), three-square (OBL), umbrella sedge (FACW), and water cress (OBL). This vegetation is considered ephemeral in nature in that it is washed away with winter storm events, and then recolonizes with the return to low summer flows. Because it is not a persistent plant community, its location and extent were not mapped. The vegetation band is an average of 0.6 m (2 ft) wide on each shoreline; over the entire length of the Lower, Middle and Upper reaches of the project, covering as much as 0.15 ha (0.38 ac).

[7] The wetland indicator status is a predictor of the likelihood of a plant species to occur in wetlands, and is defined as follows:

- Obligate Plant (OBL): a plant that almost always occurs in wetlands
- Facultative Wetland Plant (FACW): a plant that usually occurs in wetlands, but may occur in non-wetlands
- Facultative Plant (FAC): a plant that occurs in wetlands and non-wetlands
- Facultative Upland Plant (FACU): a plant that usually occurs in non-wetlands, but may occur in wetlands
- Upland Plant (UPL): a plant that almost never occurs in wetlands

The wetland indicator status conforms to Lichvar et al., 2014; see the discussion in Section 4.1.2.

On site, this vegetation type does not conform to any particular alliance as classified by Sawyer et al. (2009). It is ephemeral, comprised of fast-growing herbaceous species that rapidly recolonize the banks following scouring storm flows. As a wetland community, impacts to cattail marshes are regulated under federal, State or local laws and policies. Impacts would be regarded as significant under CEQA.

3.2 Wildlife Habitats

The study area and vicinity encompass anthropogenic habitat, ruderal upland habitat with scattered trees, ruderal freshwater marsh dominated by low herbaceous plants, and open freshwater habitat. A discussion of the anticipated values of these habitats to wildlife is presented below.

Anthropogenic Habitat

Anthropogenic habitats are those created as a result of and maintained by human activities (e.g., land clearing, cultivation, development). Anthropogenic plant communities have been described as agrestal (cultivated), pastoral (grazed), ruderal, plantations, and urban (landscaped) (Holland and Keil, 1990). In addition to these vegetated communities, anthropogenic habitats also include structures that may also attract a wide variety of wildlife species.

Many native and non-native wildlife species are well adapted to anthropogenic habitats, while others are completely or nearly dependent on them. These species are attracted by certain resources readily available in anthropogenic settings such as forage, water and shelter while being tolerant of human disturbances such as noise, lighting, and the movement of people and machinery. Buildings may provide nesting and roosting opportunities for a variety of birds which nest under eaves, in roof tiles, and even on graveled roof tops. Cracks, seam joints, roof vents, loose siding and roof tiles also providing suitable roosting sites for numerous species of bats. Many mammals are attracted to human sources of food (rubbish, garden plants, pet food, and pets themselves).

As described above, anthropogenic habitat present in the immediate vicinity of the project site consists of landscaped residential yards, a public park, mature ornamental trees and shrubs, and remnant orchard trees. Wildlife species or their sign[8] detected in this habitat during the present survey include red-shouldered hawk, red-tailed hawk, Swainson's hawk, mourning dove, northern mockingbird, western scrub-jay, white-crowned sparrow, and house finch. Other species commonly associated with anthropogenic habitats in urbanized settings include common raven, American crow, house sparrow, western gull, feral pigeon, European starling, mourning dove,

[8] Wildlife sign include tracks, vocalization, scat, white-wash, feathers, fur, shed skin, nests, burrows, prey remains, and dead individuals.

northern mockingbird, barn owl, barn swallow, Botta's pocket gopher, California ground squirrel, raccoon, striped skunk, Virginia opossum, Norway and black rat, house mouse, and mule deer, coyote and red fox.

Ruderal Habitat

Ruderal habitat is that from which the native vegetation has been completely removed by grading, cultivation, or other surface disturbances. In some cases, recolonization of such sites by non-native and native grasses, forbs, shrubs and even scattered trees may be evident. However, vegetative cover and structural diversity is typically low. Ruderal sites are characterized as vacant lots, roadsides and cleared edges of development. Generally, ruderal sites have a relatively limited value for wildlife species as they are typically open and subject to a high level of human activity. In terms of potential wildlife usage, the small patch of creeping rye grass described above is included here.

Ruderal sites commonly support a variety of passerines (perching birds) that forage on disturbed ground or among the scattered trees and shrubs, and may include mourning dove, European starling, Brewer's blackbird, house finch, house sparrow, northern mockingbird, and western scrub-jay, among others. Fossorial (i.e., burrowing) mammals such as Botta's pocket gopher and California ground squirrel are also expected, along with other rodents such as California vole, deer mouse, brush rabbit, and Norway rat. Mammals that are naturally inured to human habitation and activities include Virginia opossum, raccoon, striped skunk, and mule deer. Reptiles that may also be found include alligator lizard and western fence lizard.

As described above, ruderal habitat is present on the upper banks of Marsh Creek, on both sides of the Marsh Creek Regional Trail and access road, and across the entire upland field. Most of this habitat is regularly disturbed by mowing or disking. Wildlife species or their sign detected in this habitat during the present survey include Swainson's hawk, burrowing owl, mourning dove, Botta's pocket gopher, California ground squirrel, western fence lizard, American crow, and barn swallow.

Freshwater Habitat

Open freshwater habitat may consist of lakes and impoundments (i.e., lacustrine) and rivers and streams (i.e., riverine). These systems generally lack persistent emergent vegetation and flowing or surface water is usually present, at least seasonally.

Within the study area, open freshwater habitat is confined between the banks of Marsh Creek. The longitudinal profile of this straightened, trapezoidal, unlined channel is relatively gentle, resulting in a low flow velocity. The channel bottom consists of silty sediment and deposited rock and debris; some sections are hardened

with mortared riprap. A narrow band of freshwater marsh is present along both shorelines of the creek, made up of low, herbaceous species.

Lower Marsh Creek is a realigned and channelized flood control channel with limited riffle-pool complexes and lacking riparian habitat and in-stream habitat complexity. It is adjacent to suburban residential and commercial development, cropland, and fallow field. Until recently, its use by anadramous fish was restricted to the lower 6.4 km (4 mi) of Marsh Creek from its mouth at Big Break to the Brentwood Wastewater Treatment Plant. At that location, between Delta Road and Sunset Road, a 1.8 m (6 ft) high drop-structure, constructed in 1958, effectively blocked the upstream movement of fish. However, a fish ladder was constructed in December 2010, permitting the upstream movement of anadromous fish through the project site. Upstream of the project site, the movement of fish into upper Marsh Creek, the largest watershed in the East Bay, remains constrained by the dam at Marsh Creek Reservoir, approximately 16 km (10 mi) from the mouth of the creek. Fish species known to occur in Marsh Creek include bluegill, squawfish, three-spined stickleback, and Chinook (see discussion in Section 4.2).

Wildlife species or their sign detected in this habitat during the present survey include American mink, raccoon, black phoebe, red-winged blackbird, yellow-rumped warbler, barn swallow, bullfrog, mosquitofish, mallard and red-eared slider. Other wildlife species expected to occur in or near Marsh Creek include Louisiana red swamp crayfish, Pacific treefrog, western aquatic garter snake, Pacific (western) pond turtle, great egret, snowy egret, great blue heron, green heron, belted kingfisher, raccoon, northern river otter, among many others.

3.3 Wildlife Movement Corridors

Under CEQA, impacts are considered significant if the project would interfere substantially with the movement of 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. Wildlife corridors (i.e. linear habitats that naturally connect and provide passage between two or more large habitats or habitat fragments) are important for persistence of wildlife overtime. Wildlife must have access to adequate resources, and corridors are used to find suitable forage, nesting and resting sites, mates and new home ranges. In addition, corridors for dispersal within breeding populations will decrease the likelihood that subpopulations will go extinct or become locally extirpated. Even where patches of pristine habitat are fragmented, as commonly occurs with riparian vegetation, wildlife movement between populations is facilitated through habitat linkages, migration corridors and movement corridors.

Wildlife movement includes migration (i.e., usually one direction per season), inter-population movement (i.e., long-term genetic exchange) and small travel pathways (i.e., daily movement within an animal's home range). Daily movement patterns define an animal's home range where activities such as foraging, resting and conspecific (individuals of the same species) interactions occur. Generally, longer movements usually by dispersing individuals connect breeding populations, permitting gene flow between these subpopulations. Corridors generally provide adequate habitat for animals to disperse until reaching an area large enough to establish home ranges. Corridors are different depending on what type of organism may use it; a corridor for a butterfly or bird may be a series of "stepping stones" of suitable habitat, while a terrestrial vertebrate may need a continuous band of suitable habitat for successful movement. Habitat loss, fragmentation, and degradation resulting from a change in land use or habitat conversion can alter the use and viability of corridors.

The lower reach of Marsh Creek is not part of an uninterrupted riparian corridor and although it is contiguous with extensive open shoreline lands downstream, it connects to the uppermost part of the watershed only after passing through commercial, industrial and residential development and numerous buried culverts. Much of the lower reach of Marsh Creek lacks significant riffles, pools, irregular bank features, and overhanging vegetation that provide suitable cover or refuge for resident or dispersing wildlife. Furthermore, the adjacent residential neighborhoods and commercial development bring predators such as pets, feral animals, and those attracted to human habitation. Increased human activity, noise, and lighting further inhibit the movements of wildlife species.

For these reasons, the section of Marsh Creek at the Project is not expected to serve as a significant wildlife corridor. The implementation of the proposed habitat restoration and enhancement project would serve to improve the quality of available habitat for wildlife use.

4.0 SPECIAL-STATUS BIOLOGICAL RESOURCES

Existing and potentially occurring biological resources within the study area that would be potentially affected by the proposed action are defined and discussed below.

4.1 Special-Status Habitats

Special-status biological resources include habitats and plant and animal species for which impacts may be regarded as significant pursuant to the guidelines of CEQA or are regulated under federal, State or local laws or ordinances. They are defined and discussed below.

4.1.1 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 under the CWA[9], Lake and Streambed Alteration Program (LSAP)[10], and/or the Porter-Cologne Water Quality Control Act (Porter-Cologne).[11] A number of communities have been designated as rare and these communities are given the highest inventory priority (CNDDB, 2017; CDFG, 2010). Vegetation alliances given a rarity ranking of G1/S1, G2/S2 or G3/S3 are considered to be of high inventory priority; alliances ranked as G4/S4 or G5/S5 are generally considered common enough to not be of concern (Sawyer et al., 2009; CDFG, 2010; for a definition of rarity rankings, see Appendix C).

Riparian habitats are considered by federal and state regulatory agencies to represent a sensitive and declining resource. Wetlands and riparian areas can serve significant biological functions by providing nesting, breeding, foraging, and spawning habitat for a wide variety of resident and migratory wildlife species. Impacts to stream channels with a defined bed and bank are addressed specifically by the CFGC[12] and may be regulated under the CWA. The U.S. Army Corps of Engineers (USACE) regulates dredging and placement of fill into waters of the U.S., including wetlands, with oversight of permitting decisions by the U.S. Environmental Protection Agency (USEPA). The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) has input on permitting decisions by the USACE when an activity could affect wetland-dependent federally listed species.

Special-status natural communities recorded from the project region include alkali meadow, alkali seep, cismontane alkali marsh, coastal and valley freshwater marsh, coastal brackish marsh, northern claypan vernal pool, stabilized interior dunes, valley needlegrass grassland, and valley sink scrub (CNDDB, 2017).

4.1.2 Waters of the U.S. and Waters of the State

There are seven categories of waters of the U.S.[13] These include:

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
(2) All interstate waters including interstate wetlands;
(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows,

[9] CWA § 401 and § 404
[10] CFGC Division 2, Chapter 6, §§ 1600-1607
[11] Cal. Water Code §§ 13000-14920
[12] CFGC § 1600 et seq.
[13] 33 CFR 328.3(a); 40 CFR 230.3(s)

playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

a) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
b) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
c) Which are used or could be used for industrial purposes by industries in interstate commerce;

4) All impoundments of waters otherwise defined as waters of the U.S. under the definition;
5) Tributaries of waters identified in paragraphs (1) through (4) of this section;
6) The territorial seas; and
7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6) of this section. Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the Clean Water Act (other than cooling ponds[14], which also meet the criteria of this definition) are not waters of the U.S.

As summarized in USEPA/USACE (2008), both agencies assert jurisdiction over "non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)" and "wetlands that abut such tributaries". The extent of USACE jurisdiction over tributaries normally corresponds to the OHWM. The OHWM is the line on the shores established by the fluctuations of water and indicated by physical characteristics such as:[15]

- a clear natural line impressed on the bank;
- shelving;
- changes in the character of the soil;
- destruction of terrestrial vegetation;
- the presence of litter and debris;
- or other appropriate means that consider the characteristics of the surrounding areas.

Wetlands are defined 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 support a prevalence of vegetation typically adapted for life in saturated soil conditions."[16] Indicators of all three wetland parameters (e.g., hydric

[14] as defined in 40 CFR 123.11(m)
[15] USACE, 2006
[16] CWA § 404

soils, hydrophytic vegetation, and wetland hydrology) must be present for a site to be classified as a wetland (Environmental Laboratory, 1987; USACE, 2006).

As defined under California Water Code[17], waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state". These include nearly every surface or ground water in California, or tributaries thereto, and include drainage features outside USACE jurisdiction (e.g., dry and ephemeral/seasonal stream beds and channels, etc.), isolated wetlands (e.g., vernal pools, seeps, springs and other groundwater-supplied wetlands, etc.), and storm drains and flood control channels.

At the project location, Marsh Creek is a perennial, 4th order stream.[18] The watershed originates in the Morgan Territory on the north side of Mt. Diablo and covers some 332 km^2 (128 mi^2). Marsh Creek flows for 48 km (30 mi) and empties into the tidally influenced Dutch Slough, and then Big Break and the lower San Joaquin River.

Marsh Creek Dam, located near Briones Valley and approximately 6.2 km (3.9 mi) upstream of the Project, was constructed in 1963 and contains runoff from approximately 38 percent of the watershed in the Marsh Creek (PWA, 2006). The four major tributaries draining into Marsh Creek are Briones Creek, Dry Creek, Deer Creek and Sand Creek. The confluence of Briones and Marsh Creeks is at the Marsh Creek Reservoir; Dry Creek flows into Marsh Creek approximately 0.8 km (0.5 mi) upstream of the project site; and Deer and Sand Creeks flow into Marsh Creek within the project site. Historically, much of the lower reaches of Marsh Creek were dry in the summer (Stanford et al., 2011). Currently, flowing surface water is present from lower Marsh Creek to its mouth; these flows are made up primarily of nuisance water resulting from an elevated water table caused by runoff from agricultural and landscape irrigation and urban discharges (NHI/DSC, 2007).

At the study area, the Marsh Creek channel is an average of 18 m (60 ft) wide at the tops of bank and 3 m (10 ft) wide at the OHWM. The channel is on average approximately 2.75 m (9 ft) below grade, with 1:2.3 horizontal:vertical earthen side slopes. The stream channel in the study area is approximately 1235 m (4050 ft) in length. The total area below the OHWM[19] is approximately 0.38 ha (0.93 ac); the total area below top of bank is approximately 2.26 ha (5.58 ac). A map illustrating the preliminary limits of jurisdiction within the study area is presented in Figures 6a, 6b and 6c.

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[17] § 13050(e)

[18] See http://en.wikipedia.org/wiki/Strahler_Stream_Order for descriptions of stream orders.

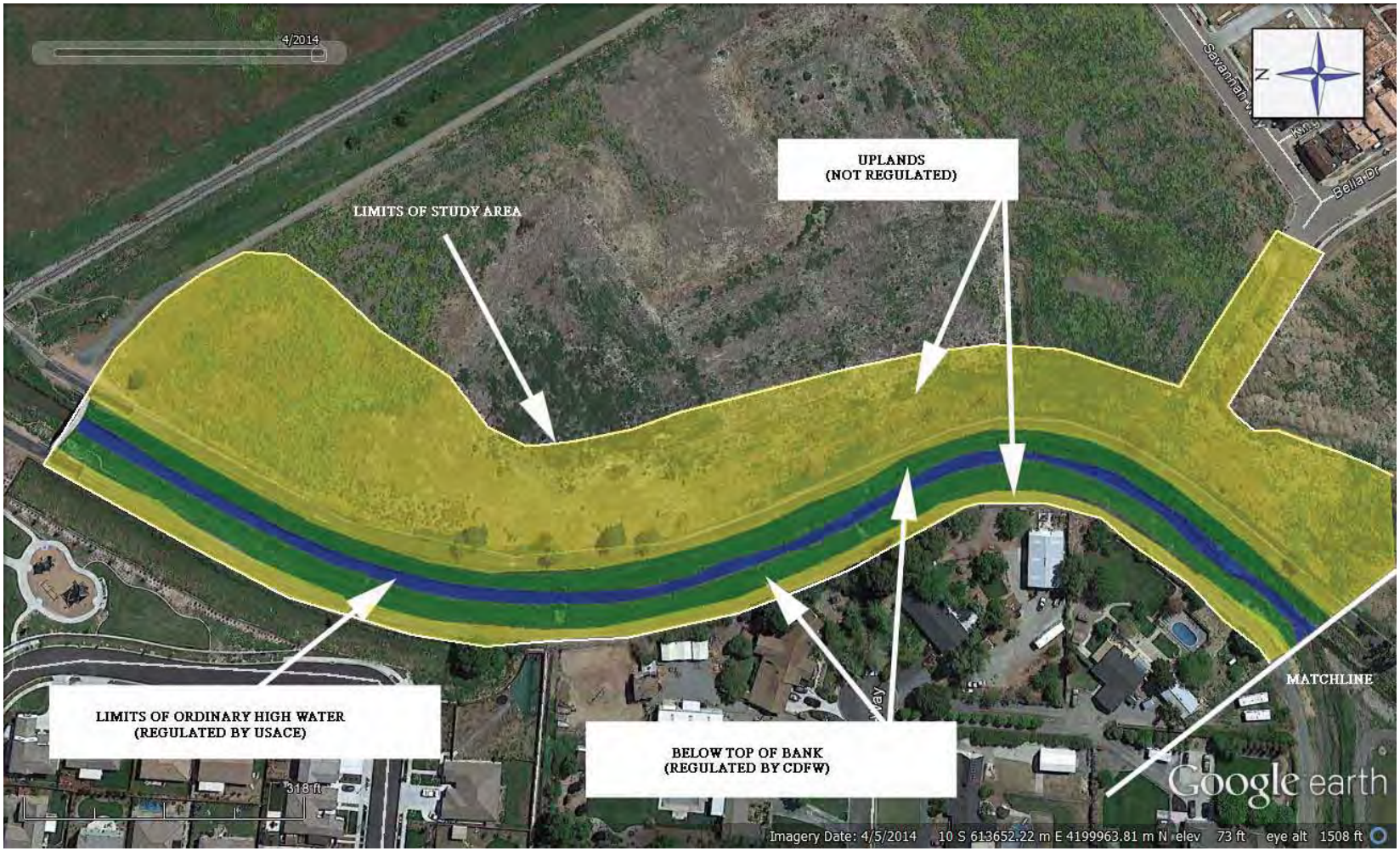
[19] Excluding that portion of the study area upstream of the Dainty Avenue Bridge, which would not be affected by the proposed project.

Upper Reach of Project

Figure 6a. Preliminary Limits of Jurisdiction (Upper Reach)

Middle Reach of Project

Figure 6b. Preliminary Limits of Jurisdiction (Middle Reach)



Lower Reach of Project

Figure 5c. Preliminary Limits of Jurisdiction (Lower Reach)

As currently proposed, the Project would result in impacts to waters of the U.S./waters of the State. These impacts would be considered significant pursuant to the guidelines of CEQA and are regulated by the USACE, CDFW, and RWQCB. Impact minimization and mitigation measures are warranted, as outlined in Section 5.1, below.

Special-Status Plant Species

Special-status plant species include all plant species that meet one or more of the following criteria:[20]

- Listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (FESA) or candidates for possible future listing as threatened or endangered under the FESA.[21]
- Listed[22] or candidates for listing by the State of California as threatened or endangered under the California Endangered Species Act (CESA).[23] A species, subspecies, or variety of plant is **endangered** when the prospects of its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, disease, or other factors.[24] A plant is **threatened** when it is likely to become endangered in the foreseeable future in the absence of special protection and management measures.[25]
- Listed as rare under the California Native Plant Protection Act (CNPPA).[26] A plant is **rare** when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens.[27]
- Meet the definition of rare or endangered under CEQA.[28] Species that may meet the definition of rare or endangered include the following:
    - Species considered by the CNPS to be "rare, threatened or endangered in California" (California Rare Plant Rank 1A, 1B and 2);

[20] This definition is provided in CDFG (2009).
[21] 50 CFR § 17.12
[22] Refer to current online published lists available at: http://www.dfg.ca.gov/biogeodata.
[23] CFGC § 2050 et seq.
[24] CFGC § 2062
[25] CFGC § 2067
[26] CFGC § 1900, et seq.
[27] CFGC § 1901
[28] CEQA § 15380[b] and [d]

- Species that may warrant consideration on the basis of local significance or recent biological information;
- Some species included on the California Natural Diversity Database's (CNDDB) *Special Plants, Bryophytes, and Lichens List*.

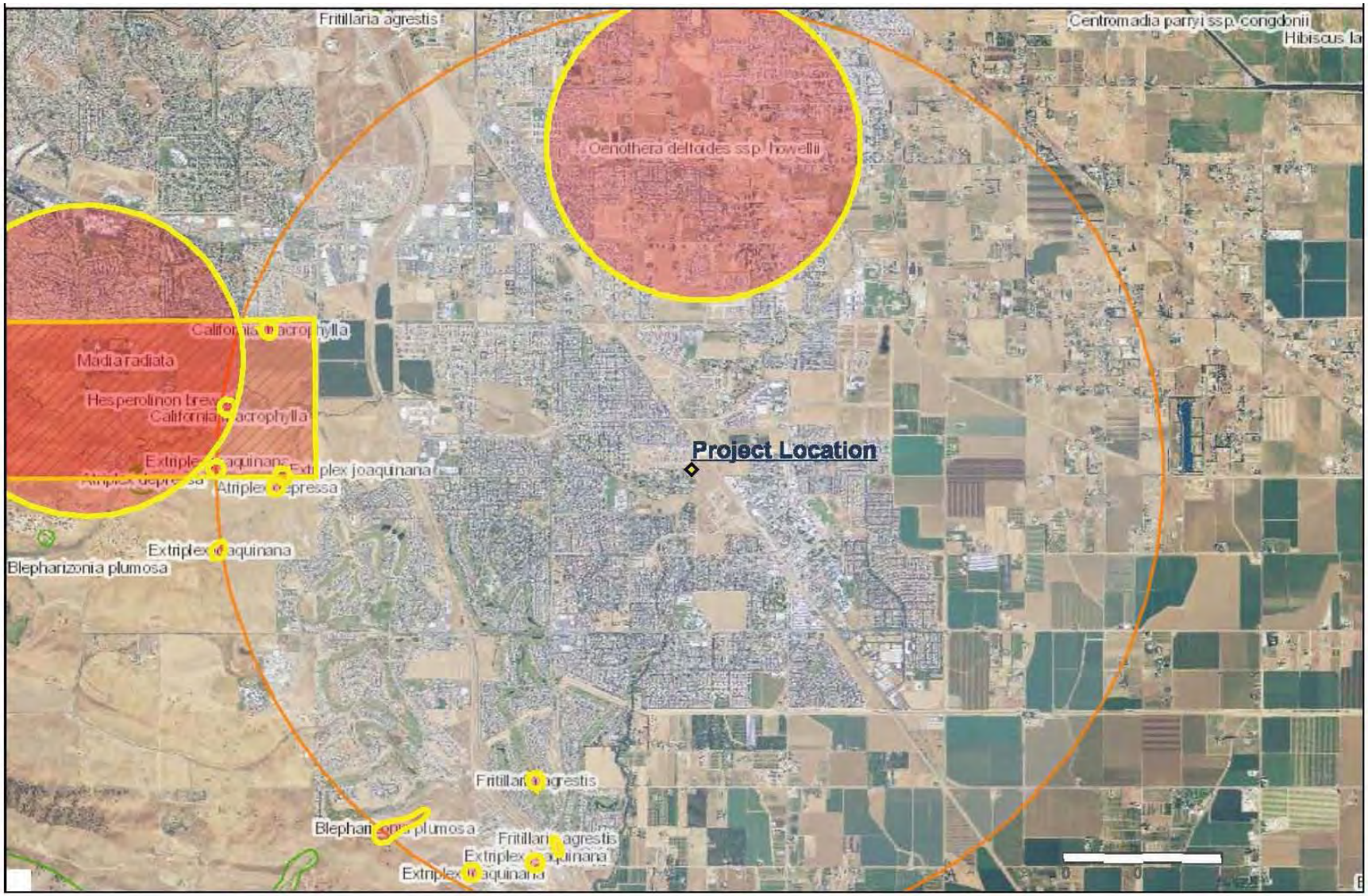
- **Locally significant species,** that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region[29] or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines[30]). Examples include a species at the outer limits of its known range or a species occurring on an uncommon soil type.

In addition, plant species have been assigned global and State rarity rankings (for a definition of these rankings, see Appendix C). Species ranked as S1, S2, or S3 are considered to be critically imperiled, imperiled or vulnerable to extinction within the boundaries of the state (CDFW, 2017a). As such, these species may be considered to meet the criteria for listing as endangered, threatened or rare under CESA.[31] Species ranked as S4 or S5 are generally considered common enough to be secure and not at risk of extinction. Impacts on special-status plants species, as thusly defined, would be regarded as significant pursuant to CEQA[32] and should be addressed in environmental review documents.[33]

A total of 64 special-status plant species have been recorded in the nine USGS quadrangles surrounding the project site (CNDDB, 2017; USFWS, 2017; CNPS, 2017). Copies of the database printouts are included as Appendix B; an explanation of all rarity status codes is provided in Appendix C. Eight special-status plant species are mapped by the CNDDB (2017) as having been recorded from within 4.8 km (3 mi) of the project site (Figure 7).

Based on the level of disturbance, soils, existing habitats and geographic location of the Project, the presence of all 64 of the target special-status plants can be ruled out due to a lack of suitable habitat or substrate, geographic isolation from known populations, or the fact that they would have been detectable during the surveys performed. A summary of those species known from the project vicinity or for which suitable or marginally suitable habitat is present on site is provided in Table 1.

[29] CEQA § 15125 (c)
[30] Appendix G
[31] CEQA § 15380(d)
[32] CEQA § 15065
[33] CEQA § 15125



Source: CNDDB (2015) 3-mile radius

Figure 7. Special-Status Plant Records

Table 1. Special-Status Plants Recorded from the Project Vicinity*

Scientific Name	Common Name	Status**	Potential for Occurrence/ Rationale
Federally and/or State Listed Species			
Eryngium racemosum	Delta button-celery	--/SE/1B.1	None: no suitable habitat present.
Erysimum capitatum var. *angustatum*	Contra Costa wallflower	FT/SE/1B.1	None: would have been detectable.
Lasthenia conjugens	Contra Costa goldfields	FE/--/1B.1	None: would have been detectable.
Lilaeopsis masonii	Mason's lilaeopsis	--/SR/1B.1	None: no suitable habitat present.
Neostapfia colusana	Colusa grass	FT/SE/1B.1	None: no suitable habitat present.
Oenothera deltoides ssp. *howellii*	Antioch Dunes evening primrose	FT/SE/1B.1	None: would have been detectable.
Other Special-Status Species			
Atriplex cordulata var. *cordulata*	heartscale	--/--/1B.2	None: would have been detectable.
Atriplex coronata var. *coronata*	crownscale	--/--/4.2	None: would have been detectable.
Atriplex depressa	brittlescale	--/--/1B.2	None: would have been detectable.
Blepharizonia plumosa	big tarplant	--/--/1B.1	None: no suitable habitat present.
California macrophylla	round-leaved filaree	--/--/1B.1	None: would have been detectable.
Centromadia parryi ssp. *congdonii*	Congdon's tarplant	--/--/1B.1	Not expected: site too highly altered.
Cicuta maculata var. *bolanderi*	Bolander's water-hemlock	--/--/2B.1	Not expected: site too highly altered.
Eriogonum nudum var. *psychicola*	Antioch Dunes buckwheat	--/--/1B.2	None: would have been detectable.
Eriogonum truncatum	Mt. Diablo buckwheat	--/--/1B.1	None: would have been detectable.
Eryngium spinosepalum	spiny-sepaled button-celery	--/--/1B.2	None: would have been detectable.
Eschscholzia rhombipetala	diamond-petaled California poppy	--/--/1B.1	None: would have been detectable.
Extriplex joaquinana	San Joaquin spearscale	--/--/1B.2	None: would have been detectable.
Fritillaria agrestis	stinkbells	--/--/4.2	None: would have been detectable.
Hesperolinon breweri	Brewer's western flax	--/--/1B.2	None: no suitable habitat present.
Hesperevax caulescens	Hogwallow starfish	--/--/4.2	None: would have been detectable.
Hibiscus lasiocarpus var. *occidentalis*	woolly rose-mallow	--/--/1B.2	None: would have been detectable.
Isocoma arguta	Carquinez goldenbush	--/--/1B.1	None: would have been detectable.

Scientific Name	Common Name	Status**	Potential for Occurrence/ Rationale
Lathyrus jepsonii var. *jepsonii*	Delta tule pea	--/--/1B.2	None: would have been detectable.
Limosella australis	Delta mudwort	--/--/2B.1	None: no suitable habitat present.
Madia radiata	showy golden madia	--/--/1B.1	None: would have been detectable.
Myosurus minimus ssp. *apus*	little mousetail	--/--/3.1	None: no suitable habitat present.
Navarretia heterandra	Tehama navarretia	--/--/4.3	None: no suitable habitat present.
Navarretia nigelliformis ssp. *radians*	shining navarretia	--/--/1B.2	None: no suitable habitat present.
Potamogeton zosteriformis	eel-grass pondweed	--/--/2B.2	None: no suitable habitat present.
Puccinellia simplex	California alkali grass	--/--/1B.2	None: no suitable habitat present.
Scutellaria galericulata	marsh skullcap	--/--/2B.2	None: no suitable habitat present.
Scutellaria lateriflora	side-flowering skullcap	--/--/2B.2	None: no suitable habitat present.
Senecio aphanactis	chaparral ragwort	--/--/2B.2	None: would have been detectable.
Senecio hydrophiloides	sweet marsh ragwort	--/--/4.2	None: no suitable habitat present.
Symphyotrichum lentum	Suisun Marsh aster	--/--/1B.2	None: would have been detectable.

* Taxa recorded within 8 km (5 mi) of the project site, for which suitable habitat is present, or which are of particular concern locally; for a complete list of all target species evaluated as part of this analysis, see Appendix B

** Fed/State/CDFW - For an explanation of rarity codes, see Appendix C

4.2 Special-Status Animal Species

Special Animals is a broad term used to refer to all the animal taxa tracked by the CNDDB, regardless of their legal or protection status. This list is also referred to as the list of "species at risk" or "special-status species". The CDFW considers the taxa on this list to be those of greatest conservation need. Special Animals include those species, subspecies, or Evolutionarily Significant Units (ESU) where at least one of the following conditions applies (CDFW, 2017c):

- Taxa listed or proposed for listing under the FESA or CESA;
- Taxa considered by the CDFW to be a Species of Special Concern (SSC);
- Taxa which meet the criteria for listing, even if not currently included on any list, as described under CEQA Section 15380;
- Taxa that are biologically rare, very restricted in distribution, or declining throughout their range but not currently threatened with extirpation;

- Population(s) in California that may be peripheral to the major portion of a taxon's range but are threatened with extirpation in California;
- Taxa closely associated with a habitat that is declining in California at a significant rate (e.g. wetlands, riparian, vernal pools, old growth forests, desert aquatic systems, native grasslands, valley shrubland habitats, etc.);
- Taxa designated as a special status, sensitive, or declining species by other state or federal agencies, or a non-governmental organization (NGO) and determined by the CNDDB to be rare, restricted, declining, or threatened across their range in California.

Many animal species receive protection under the Bald and Golden Eagle Protection Act (BGEPA)[34], the Migratory Bird Treaty Act (MBTA)[35] and the Migratory Bird Treaty Reform Act (MBTRA).[36] The CFGC provides specific language protecting birds and raptors[37], "fully protected birds"[38], "fully protected mammals"[39], "fully protected reptiles and amphibians"[40] and "fully protected fish".[41] The California Code of Regulations (CCR) prohibits the take of fully protected fish[42], certain fur-bearing mammals,[43] and restricts the taking of amphibians[44] and reptiles[45].

In addition, animal species have been assigned global and State rarity rankings (for a definition of these rankings, see Appendix C). Species with a ranking of G1/S1, G2/S2, or G3/S3 are considered to be critically imperiled, imperiled or vulnerable to extinction within the boundaries of the state (CDFW, 2017c). As such, these species may be considered to meet the criteria for listing as endangered, threatened or rare under CESA.[46] Species ranked as G4/S4 or G5/S5 are generally considered common enough to be secure and not at risk of extinction. Impacts on special-status animal species, as thusly defined, would be regarded as significant pursuant to CEQA[47] and should be addressed in environmental review documents.[48]

[34] 16 USC 668, et seq.
[35] 16 U.S.C. 703-712
[36] 70 FR 12710
[37] §§ 3503 and 3503.5
[38] CFGC § 3511
[39] CFGC § 4700
[40] CFGC § 5050
[41] CFGC § 5515
[42] 14 CCR § 5.93
[43] 14 CCR § 460
[44] 14 CCR § 5.05
[45] 14 CCR § 5.60
[46] CEQA Guidelines § 15380(d)
[47] CEQA Guidelines § 15065(a)
[48] CEQA Guidelines § 15065(b), (c)

A total of 87 special-status animal species have been recorded in the nine USGS quadrangles surrounding the project site (CNDDB, 2017; USFWS, 2017). Copies of the database printouts are included as Appendix B; an explanation of all rarity status codes is provided in Appendix C. Ten special-status animal species are mapped by the CNDDB (2017) as having been recorded from within 4.8 km (3 mi) of the project site (Figure 8).

An occupied nesting burrow of burrowing owl was observed in the study area in 2015; the species was not detected within the study area during subsequent surveys conducted in 2016 and 2017. A foraging Swainson's hawk was also observed on the ground, perching and directly overhead during the 2015 survey. These species are discussed in more detail, below.

Based on site conditions and geographic location, the presence of 78 of the target special-status animals can be ruled out due to a lack of suitable habitat or substrate, or geographic isolation from known populations. Although not detected during the present survey, the potential exists for nine special-status species to occur on site; these are discussed below.

A summary of those species known from the project vicinity, detected on site, or for which suitable or marginally suitable habitat is present on site is provided in Table 2.

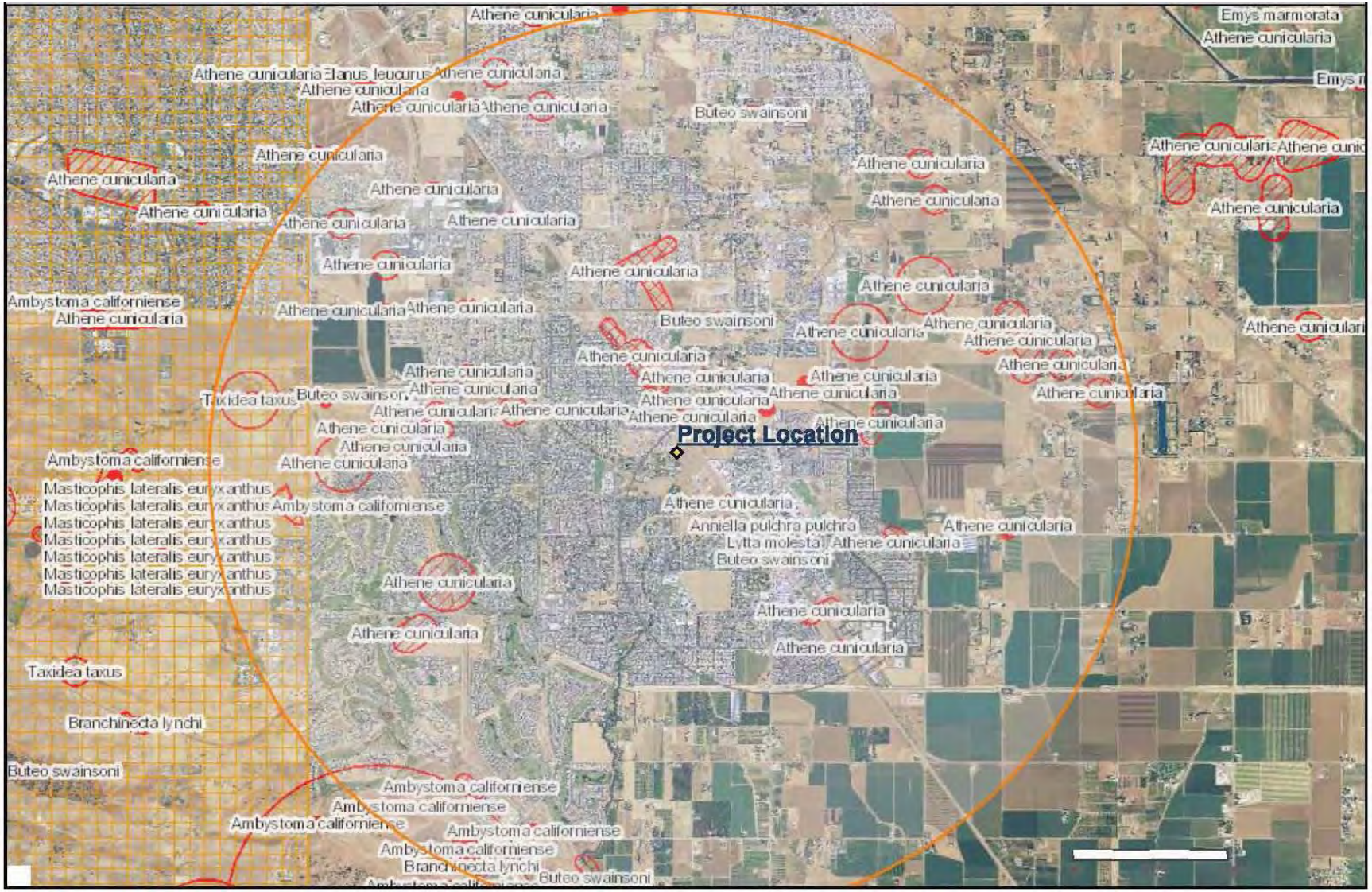
Federal/State-Listed, Proposed, Candidate, or Fully Protected Species

California Red-Legged Frog

The California red-legged frog (*Rana draytonii*; hereafter CRF) was listed as a threatened species under FESA on May 23, 1996[49] and is designated a California Species of Special Concern (CDFW, 2017c). A recovery plan was published for the CRF on September 12, 2002 (USFWS, 2002). It has been assigned a global and state ranking of G2G3/S2S3 (CNDDB, 2017); species assigned a ranking of S2 are considered imperiled in the state due to its very restricted range, very few populations, or other factors making it very vulnerable to extirpation. The CRF is a covered species under the East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan (HCP/NCCP) (Jones & Stokes, 2006).

The CRF is distributed throughout 26 counties in California, but is most abundant in the San Francisco Bay Area. Populations have become isolated in the Sierra Nevada, North Coast, northern and southern Transverse and Peninsular Ranges (Jennings and Hayes, 1994; Stebbins, 2003). The CRF inhabits predominately permanent water sources such as streams, lakes, marshes, natural and man-made ponds, and ephemeral

[49] 61 FR 25813



Source: CNDDB (2015) 3-mile radius

Figure 8. Special-Status Animal Records

Table 2. Potentially Occurring Special-Status Animal Species

Scientific Name	Common Name	Status**	Potential for Occurrence/ Rationale
Federally and/or State Listed Species			
Agelaius tricolor	tricolored blackbird	--/SE/SSC	None: no suitable habitat present.
Ambystoma californiense	California tiger salamander	FT/ST/SSC	None: no suitable habitat present.
Buteo swainsonii	Swainson's hawk	--/ST/SA	Detected: see discussion below.
Branchinecta longiantenna	longhorn fairy shrimp	FE/--/SA	None: no suitable habitat present.
Branchinecta lynchi	vernal pool fairy shrimp	FT/--/SA	None: no suitable habitat present.
Elanus leucurus	white-tailed kite	--/--/FP	Possible: marginally suitable nesting habitat present nearby. See discussion below.
Laterallus jamaicensis coturniculus	California black rail	--/ST/FP	None: no suitable habitat present.
Masticophis lateralis euryxanthus	Alameda whipsnake	FT/ST/SA	None: no suitable habitat present.
Oncorhynchus mykiss irideus	Steelhead – Central Valley DPS	FT/--/SA	Possible: marginally suitable habitat present. See discussion below.
Rana draytonii	California red-legged frog	FT/--/SSC	Possible: not recorded from a 3-mile radius of project site. Marginally suitable habitat present. See discussion below.
Thamnophis gigas	giant garter snake	FT/ST/SA	None: outside of known range.
Vulpes macrotis mutica	San Joaquin kit fox	FE/ST/--	None: no suitable habitat present.
Other Special-Status Species			
Anniella pulchra pulchra	silvery legless lizard	--/--/SSC	Possible: marginally suitable habitat present. See discussion below.
Arizona elegans occidentalis	California glossy snake	--/--/SSC	Not expected: marginally suitable habitat present.
Athene cunicularia	burrowing owl	--/--SSC	Detected: See discussion below.
Bombus crotchii	Crotch bumble bee	--/--SA	None: no suitable habitat present.
Bombus occidentalis	western bumble bee	--/--SA	None: no suitable habitat present.
Branchinecta mesovallensis	midvalley fairy shrimp	--/--SA	None: no suitable habitat present.
Emys marmorata	Pacific pond turtle	--/--/SSC	Possible: not observed, but known from project vicinity. Marginally suitable habitat present. See discussion below.

Scientific Name	Common Name	Status**	Potential for Occurrence/ Rationale
Hygrotus curvipes	curved-foot hygrotus diving beetle	--/--SA	None: no suitable habitat present.
Lanius ludovicianus	loggerhead shrike	--/--SA	Possible: marginally suitable habitat present. See discussion below.
Linderiella occidentalis	California linderiella	--/--SA	None: no suitable habitat present.
Lytta molesta	molestan blister beetle	--/--SA	None: no suitable habitat present.
Oncorhynchus tshawytscha	Chinook salmon – Central Valley fall/late-fall run ESU	--/--/SSC	Possible: marginally suitable habitat present. See discussion below.
Perdita scitula antiochenis	Antioch andrenid bee	--/--SA	None: no suitable habitat present on site.
Perognathus inornatus	San Joaquin Pocket Mouse	--/--SA	None: no suitable habitat present on site.
Taxidea taxus	American badger	--/--/SSC	None: no suitable habitat present on site.

* Taxa recorded within 8 km (5 mi) of the project site, for which suitable habitat is present, or which are of particular concern locally; for a complete list of all target species evaluated as part of this analysis, see Appendix B

** Fed/State/CDFW - For an explanation of rarity codes, see Appendix C

drainages in valley bottoms and foothills up to 1500 m (4920 ft) in elevation (Jennings and Hayes, 1994; Bulger et al., 2003; Stebbins, 2003). The species breeds between November and April in standing or slow moving water with emergent vegetation, such as cattails, tules or overhanging willows (Hayes and Jennings, 1988). Egg masses containing 2000 to 5000 eggs are attached to vegetation below the surface and hatch after 6 to 14 days (Jennings and Hayes, 1994). Larvae undergo metamorphosis 3½ to 7 months following hatching and reach sexual maturity two to three years of age (Jennings and Hayes, 1984; 1994).

Tatarian (2008) noted that a majority (57%) of CRF fitted with radio transmitters in her Round Valley study area in eastern Contra Costa County stayed at their breeding pools, whereas 43% moved into adjacent upland habitat or to other aquatic sites. This study reported a peak of seasonal terrestrial movement in the fall months corresponding to 0.5 cm (0.2 in) of precipitation that tapered off into spring. Upland movement activities ranged from 1-71 m (3-233 ft), averaging 24 m (80 ft), and were associated with a variety of refugia including ground squirrel burrows at the bases of trees or rocks, logs, grass thatch, crevices, cow hoof prints, and a downed barn door; others were associated with upland sites lacking refugia (Tatarian, 2008). The majority

of terrestrial movements lasted from one to four days; however, one female was reported to remain in upland habitat for 50 days (Tatarian, 2008). Uplands closer to aquatic sites were more often used and were more commonly associated with areas exhibiting higher object cover, e.g., small woody debris, rocks, and vegetative cover.

Most CRFs move away from breeding ponds to non-breeding areas. The distance moved is site dependent, though one recent study shows that only a few individuals move farther than the nearest suitable non-breeding habitat (Fellers and Kleeman, 2007). In this Marin County study, the furthest distance traveled was 1.4 km (0.87 mi) and most dispersing frogs moved through grazed pastures to reach the nearest riparian habitat (Fellers and Kleeman, 2007). Bulger et al. (2003) did not observe habitat preferences among frogs moving between ponds. They did note that when breeding ponds dry, CRF uses moist microhabitats of dense shrubs and herbaceous vegetation within 100 m (328 ft) of ponds.

Critical Habitat: Critical habitat was designated for CRF on April 13, 2006[50] and revisions to the critical habitat designation were proposed on September 16, 2008.[51] The project site is not located within designated or proposed critical habitat. The project would not result in impacts to critical habitat.

Habitat Suitability and Occurrence Data: The section of Marsh Creek at the project site is not mapped as potential CRF breeding habitat but is mapped as potential migration and aestivation habitat, as modelled in the HCP/NCCP (Jones & Stokes, 2006). No suitable breeding habitat for CRF is present on site or in the project vicinity. The project site is not located within a core area identified in the CRF recovery plan (USFWS, 2002).

There are 16 records for CRF within 4.8-8 km (3-5 mi) of the project site, but none closer than 4.8 km (3 mi). While dispersing CRF could move through the Marsh Creek channel on site, its occurrence is not expected.

Potential Project-Related Effects: Due to the presence of aquatic habitat on site and a lack of significant barriers to movement between the project site and potential source populations, the potential occurrence of CRF cannot be ruled out. If present at the time of construction, take of the species could occur. Impact avoidance measures are warranted, as outlined in Section 5.3, below.

[50] 71 FR 19244
[51] 73 FR 53492

Steelhead (Central Valley DPS)

The Central Valley Distinct Population Segment (DPS[52]) of steelhead (*Oncorhyncus mykiss*) was listed as threatened under FESA in 2006[53]; a five-year review of this DPS was completed in 2011 (NMFS, 2011a). It is a considered a special animal in California and is regarded as threatened by the American Fisheries Society (CDFW, 2017c). It has been assigned a global and state ranking of G5T2/S2; species assigned a ranking of S2 are considered imperiled in the state due to their very restricted range, very few populations, or other factors making them very vulnerable to extirpation (CDFW, 2017c). The Central Valley steelhead DPS is not a covered species under the HCP/NCCP (Jones & Stokes, 2006).

The Central Valley steelhead DPS includes all naturally spawned populations of steelhead below natural and manmade impassable barriers in the Sacramento and San Joaquin Rivers and their tributaries, excluding steelhead from San Francisco and San Pablo Bays and their tributaries. The Sacramento and San Joaquin rivers offer the only migration route to the drainages of the Sierra Nevada and southern Cascade mountain ranges for anadromous fish. The distance from the Pacific Ocean to spawning streams can exceed 300 km (186 mi), providing unique potential for reproductive isolation among steelhead. Critical habitat for the Central Valley DPS encompasses 67 watersheds within its freshwater and estuarine range. Critical habitat includes the entire watersheds of the Northern Diablo Range, Sutter Creek, Omo Ranch, Consumnes, Big Canyon Creek, Herald, Ono, Nevada City, Mildred Lake, Elmira and Paynes, along with a portion of the Lower Mokelumne watershed and the deep water shipping channel of the Sacramento Delta.

Critical Habitat: Critical habitat has been designated for the Central Valley DPS of steelhead by the NMFS (2005). The project site is not located within designated critical habitat for the species.

Habitat Suitability and Occurrence Data: In their assessment of steelhead in the San Francisco Estuary, Leidy, et al. (2005) found no historical evidence of the occurrence of steelhead in the headwaters of Marsh Creek. Construction of the Marsh Creek Reservoir in the 1960s and the presence of a drop structure near the City of Brentwood created barriers to fish passage into upper Marsh Creek, the largest watershed in the East Bay. Even with the opening of the Brentwood fish ladder in December 2010, the movement of fish is restricted to the lower 16 km (10 mi) of the creek downstream of the dam at Marsh Creek Reservoir.

[52] The NMFS has relied on the Evolutionarily Significant Unit (ESU) concept and considers DPSs to represent ESUs if the population is reproductively isolated and represents an important component in the evolutionary legacy of the species.

[53] 71 FR 834

Nonetheless, the potential remains for the movement of steelhead past the project site, entering Marsh Creek at its mouth at Big Break. In fact, an unconfirmed sighting of steelhead was reported in 2007 (NHI/DSC, 2007).

Potential Project-Related Effects: Suitable habitat for the Central Valley DPS of steelhead is present in the study area. Construction activities in the San Joaquin River could result in significant adverse effects pursuant to CEQA. Impact avoidance measures are warranted, as outlined in Section 5.3, below.

Swainson's Hawk

Swainson's hawk (*Buteo swainsoni*) is listed as a threatened species under CESA (CDFW, 2017d), which prohibits the "take"[54], possession, purchase or sale of the species or any part thereof.[55] It is also included on California's list of special animals and is considered a bird species of conservation concern by the USFWS (CDFW, 2017c). The Swainson's hawk is a covered species under the HCP/NCCP (Jones & Stokes, 2006). As a protected raptor, any impacts to the species or nesting sites would be regarded as significant pursuant to CEQA[56] and should be addressed in environmental review documents.[57]

Swainson's hawk is a highly mobile migratory raptor (bird-of-prey) with a large home range. They breed in desert, shrub-steppe, grassland, and agricultural habitats throughout the western U.S. and Canada, and in northern Mexico (England, et al. 1997). Historically, Swainson's hawks were once found throughout the lowland basin of California, but is now restricted to portions of the Central Valley where suitable nesting and foraging habitat are still available. The greatest concentration of breeding Swainson's hawks is between the northern San Joaquin Valley and the Sacramento/Modesto area.

In California's Central Valley, Swainson's hawks prefer to nest in riparian forests and remnant riparian trees, foraging in agricultural lands (Estep, 1989; Babcock, 1995), but they can also be found nesting in lone trees or small groves in agricultural fields. Valley oak, Fremont cottonwood, California sycamore, black walnut and large willows are the most commonly used nesting tree species, but they may also utilize eucalyptus stands and a variety of large trees near old farm houses. Swainson's hawks require large open grasslands with abundant prey, such as small mammals and insects. Over 85 percent of Swainson's hawk territories in the Central Valley are in

[54] Under CFGC § 86, "take" means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill.
[55] CFGC § 2080
[56] CEQA § 15065
[57] CEQA § 15125

riparian systems adjacent to suitable foraging habitats. The Swainson's hawk is a confirmed breeder in Contra Costa County (Glover, 2009; CNDDB, 2017).

Swainson's hawks arrive on the breeding grounds in late February and early March in the Central Valley and in mid-April in the Great Basin. In September, most Swainson's hawks migrate to the Pampas of southern South America. However, the Central Valley population winters in Central Mexico and to a lesser extent throughout Central and South America.

Critical Habitat: Critical habitat has not been designated for the Swainson's hawk.

Habitat Suitability and Occurrence Data: There is no suitable nesting habitat within the study area. However, suitable nesting habitat in the form of tall eucalyptus trees is present in the project vicinity. A single Swainson's hawk was observed foraging and perching on site over the course of the present survey.

There are 11 records for Swainson's hawk within an 8 km (5 mi) radius of the project site (CNDDB, 2017). The nearest record (Occ. #1712) is a 2006 report of an active nest in a eucalyptus tree 1.3 km (0.8 mi) to the north. Another nearby record (Occ. #1681) is a 2007 report of a likely nest in a valley oak 3.8 km (2.4 mi) to the west. Located along Marsh Creek, approximately 4.7 km (2.9 mi) south of the project, is another record (Occ. #1684) of nesting by Swainson's hawk. The project site is within potential foraging habitat for the species, as designated in the HCP/NCCP (Jones & Stokes, 2006).

Potential Project-Related Effects: Project implementation would reduce the area of open fields utilized by Swainson's hawk for foraging. This is not expected to represent a significant adverse effect. Construction activities could also disrupt breeding behavior of any birds nesting in the project vicinity. Impact avoidance measures are warranted, as outlined in Section 5.3, below.

White-tailed Kite

White-tailed kite (*Elanus leucurus*) is listed by the CDFW (2017c) as a fully protected bird species[58]; it is also protected under the MBTA and CFGC[59] and is considered a migratory nongame bird of management concern by the USFWS (CDFW, 2017c,d). It has been assigned a global and state ranking of G5/S3S4. Species assigned a ranking of S3 are considered vulnerable in California due to their restricted range and relatively few populations, whereas species assigned a ranking of S4 or higher are generally considered not to be vulnerable in the state (CDFW, 2017c). White-tailed kite is a no-

[58] Division E, Title I, § 143 of the Consolidated Appropriations Act, 2005, PL 108–447
[59] CFGC § 3511

take species under the HCP (Jones & Stokes, 2006). Any impacts to white-tailed kite or nesting sites would be regarded as significant pursuant to CEQA[60] and should be addressed in environmental review documents.[61]

In the U.S., this species occurs in California, Texas and a disjunct group in Florida and has expanded its range into Washington and Oregon (Dunk, 1995). Generally, white-tailed kites are observed in low elevation grasslands, agricultural, wetland, oak-woodland or savannah habitats. The majority of their diet is made up of small mammals. This species nests in a wide variety of trees up to 50 m (164 ft) high, and, in some cases, shrubs as little as 3 m (9.8 ft) above the ground. Nests usually consist of platforms of small sticks, leaves, weed stalks, and similar materials lined with grass, hay or leaves. This species nests from February through August, with a peak in breeding occurring from late March through July. It is a confirmed breeder in Contra Costa County (Glover, 2009).

Critical Habitat: Critical habitat has not been designated for the white-tailed kite.

Habitat Suitability and Occurrence Data: Marginally suitable nesting habitat for white-tailed kite is present on site and in the project vicinity. It is not uncommon to see the species foraging over grasslands in the area. For this reason, the potential exists for the white-tailed kite to inhabit the project site or to be adversely affected by project construction. There are three records (Occ. #76, 87, and 113) for nesting white-tailed kite from 4.8-5 km (3-5 mi) from the project site, but none closer than 4.8 km (3 mi).

Potential Project-Related Effects: Project implementation would reduce the area of open fields utilized by white-tailed kite for foraging. This is not expected to represent a significant adverse effect. Construction activities could also disrupt breeding behavior of any birds nesting in the project vicinity. Such impacts would be regarded as significant pursuant to CEQA. Impact avoidance measures are warranted, as outlined in Section 5.3, below.

Other Special-Status Species

Burrowing Owl

The burrowing owl[62] (*Athene cunicularia*) is a California Species of Special Concern (CDFW 2017c), is listed as a bird species of conservation concern (BCC) by the USFWS (USFWS, 2008), and is considered a sensitive species by the BLM (CDFW, 2017c). Like other raptors, it is also protected under the MBTA and CFGC[63], both of which prohibit

[60] CEQA § 15065
[61] CEQA § 15125
[62] Also known as the western burrowing owl.
[63] CFGC §§ 3503, 3503.5, and 3800

the taking or destroying of any egg, bird or nest of any species of migratory bird. It has been assigned a global and state ranking of G4/S3; species assigned a ranking of S3 are considered vulnerable in the state due to their restricted range, relatively few populations, or other factors making them very vulnerable to extirpation (CDFW, 2017c). Impacts to burrowing owls or their nests would be regarded as significant pursuant to CEQA[64] and should be addressed in environmental review documents.[65] The burrowing owl is a covered species under the HCP/NCCP (Jones & Stokes, 2006).

Burrowing owls range throughout the Central Valley, the inner and outer Coastal regions, portions of the San Francisco Bay Area, the southern California Coast from southern California to the Mexican Border, the Imperial Valley, and in portions of the desert and high desert habitats in southeastern and northeastern California. They require habitat with three basic attributes: open, well drained terrain; short, sparse vegetation; and underground burrows or burrow facsimiles. Throughout their range burrowing owls occupy grasslands, deserts, sagebrush scrub, agricultural areas (including pastures and untilled margins of cropland), earthen levees and berms, coastal uplands, urban vacant lots, and the margins of airports, golf courses, and roads (Haug et al., 1993).

Burrowing owls rely on burrows excavated by fossorial mammals, including ground squirrels, badgers, skunks, foxes, and coyotes (Karalus and Eckert, 1987). Where the number and availability of natural burrows is limited (for example, where burrows have been destroyed or ground squirrels eradicated), owls will occupy drainage culverts, cavities under piles of rubble, discarded pipe, and other tunnel like structures (Haug et al., 1993). Like other owls, burrowing owls breed once each year in an extended reproductive period, during which most adults mate monogamously. Both sexes reach sexual maturity at one year of age. Clutch sizes vary, and the number of eggs laid is proportionate to prey abundance. The breeding season occurs from February 1 to August 31, but peaks between late April and July in most years. It is a confirmed breeder in Contra Costa County (Glover, 2009; CNDDB, 2017).

Critical Habitat: Critical habitat has not been designated for the burrowing owl.

Habitat Suitability and Occurrence Data: Suitable nesting habitat is present along the banks of Marsh Creek and the adjacent uplands. Two adult burrowing owls and one juvenile were observed along the eastern boundary of the proposed area of impact during the May 2015 reconnaissance survey. At that time, the owls were showing strong site fidelity to a suspected nesting burrow, three satellite burrows and two escape burrows nearby. Abundant owl sign[66] was detected near the suspected nesting

[64] CEQA § 15065
[65] CEQA § 15125
[66] Burrowing owl signs include pellets, whitewash, feathers, burrows, and prey remains.

burrow. No burrowing owls were observed during the subsequent survey conducted in November 2015. A native species field survey form has been completed and submitted to the CNDDB; a copy is included as Appendix D. The project site is mapped as supporting suitable low use habitat as modelled in the HCP/NCCP (Jones & Stokes, 2006). The species was not detected on site during subsequent surveys conducted in 2016 and 2017.

A total of 53 sightings of burrowing owl have been reported within an 8 km (5 mi) radius of the project site (CNDDB, 2017). The species is widely distributed in the project region and likely to occur on almost any vacant parcel.

Potential Project-Related Effects: Construction activities could result in direct mortalities of burrowing owl or significant indirect impacts by causing a disruption of breeding behavior or abandonment of an active nest site. Such impacts would be regarded as significant pursuant to CEQA. Impact avoidance measures are warranted, as outlined in Section 5.3, below.

Chinook Salmon (Central Valley Fall / Late Fall-Run ESU)

The Central Valley fall/late fall Evolutionarily Significant Unit (ESU) of Chinook salmon (*Oncorhynchus tshawytscha*, hereafter Chinook) is listed as a Species of Special Concern by CDFW (2017c) and a Species of Concern by the NMFS.[67] It is also considered a vulnerable species by the AFS and a sensitive species by the USFS (CDFW, 2017c). It has been assigned a global and state ranking of G5/S2?; species assigned a ranking of S2 are considered imperiled due to their very restricted range, very few populations, steep declines, or other factors making them very vulnerable to extirpation in the state (CNDDB, 2017). As such, the species may be considered to meet the criteria for listing as endangered, rare or threatened pursuant to the CEQA.[68] Impacts to species with such a ranking may be regarded as significant pursuant to CEQA[69] and should be addressed in environmental review documents.[70] The Chinook is not a covered species under the HCP/NCCP (Jones & Stokes, 2006).

Chinook are anadromous fish, with adults migrating from the ocean into the freshwater streams and rivers of their birth in order to mate. They spawn only once and then die (called semelparity). They are the largest of the salmon species, with adults often exceeding 18 kg (40 lbs). They feed on terrestrial and aquatic insects, amphipods, and other crustaceans while young, and primarily on other fishes when older. Juvenile Chinook may spend from 3 months to 2 years in freshwater before

[67] A complete list of Species of Concern is available online at http://www.fisheries.noaa.gov/pr/species/concern/#list
[68] CEQA § 15380(d)
[69] CEQA § 15065
[70] CEQA § 15125

migrating to estuarine areas as smolts and then into the ocean to feed and mature. Chinook remain at sea for 1 to 6 years (more commonly 2 to 4 years), with the exception of a small proportion of yearling males (called jack salmon) which mature in freshwater or return after 2 or 3 months in salt water. They prefer streams that are deeper and larger than those used by other Pacific salmon species.

Adult female Chinook will prepare a redd (i.e., nest) in a stream area with suitable gravel type composition, water depth and velocity. Spawning sites have larger gravel and more water flow up through the gravel than the sites used by other Pacific salmon. After laying eggs, adult Chinook will guard redds from just a few days to nearly a month before dying. Chinook eggs hatch 3 to 5 months after deposition. Eggs are deposited at a time to ensure that young salmon fry emerge during the following spring when the river or estuary productivity is sufficient for juvenile survival and growth.

There are different seasonal "runs" (e.g., spring, summer, fall, or winter) in the migration of Chinook from the ocean to freshwater, even within a single river system. These runs have been identified on the basis of when adult Chinook enter freshwater to begin their spawning migration. However, distinct runs also differ in the degree of maturation at the time of river entry, the temperature and flow characteristics of their spawning site, and their actual time of spawning. Freshwater entry and spawning timing are believed to be related to local temperature and water flow regimes.

The Central Valley fall and late fall-run populations of Chinook were determined to not warrant listing by the federal government on September 16, 1999[71]; it was subsequently listed as a federal species of concern on June 28, 2004.[72] The Central Valley fall and late fall-run Chinook ESU includes all naturally spawned populations of fall-run Chinook in the Sacramento and San Joaquin River Basins and their tributaries, east of Carquinez Strait, California.

Critical Habitat: Critical habitat has not been designated for the Chinook.

Habitat Suitability and Occurrence Data: The lower reaches of Marsh Creek are considered to provide habitat for Central Valley fall-run chinook, possibly supporting adult migration, spawning, incubation, and rearing (Jones & Stokes, 2003).

In November 2001 and the fall and winter of 2002, adult Chinook were observed in lower Marsh Creek, near the City of Oakley (Jones & Stokes 2006). Juvenile fish, believed to be fall-run progeny, were documented in March 2002 by the CDFG (Jones & Stokes 2003). Construction of the Marsh Creek Reservoir in the 1960s and the

[71] 50 CFR Part 223, Federal Register Vol. 64, No. 179
[72] Federal Register Vol. 69, No. 73

presence of a drop structure near the City of Brentwood created barriers to fish passage into upper Marsh Creek, the largest watershed in the East Bay. Even with the opening of the Brentwood fish ladder in December 2010, the movement of fish is restricted to the lower 16 km (10 mi) of the creek downstream of the dam at Marsh Creek Reservoir. There are no records for Chinook from within 8 km (5 mi) of the project site (CNDDB, 2017).

Potential Project-Related Effects: Project implementation would not impede the movement of any fish species. However, construction activities could have a temporary effect on Chinook, if present at the time of work. Such impacts would be regarded as significant pursuant to CEQA. Impact avoidance measures are warranted, as outlined in Section 5.3, below.

Loggerhead Shrike

Loggerhead shrike (*Lanius ludovicianus*) is listed as a Species of Special Concern by CDFW (2017c), is considered a bird species of conservation concern by the USFWS (2008), and is protected under the MBTA. Like other migratory birds, loggerhead shrikes are protected under the CFGC[73], which prohibits the taking or destroying of any egg, bird or nest. It has been assigned a global and state ranking of G4/S4; species assigned a ranking of S4 are uncommon but not rare in the state, although there is some cause for long-term concern due to declines or other factors (CDFW, 2017c). Species so designated are not considered to meet the criteria for listing as a threatened species in the state. Nonetheless, impacts would be regarded as significant pursuant to CEQA[74] and must be addressed in environmental review documents. Loggerhead shrike is not a covered species under the HCP/NCCP (Jones & Stokes 2006).

The loggerhead shrike occurs throughout California in the lowlands and the foothills in open habitats, such as grasslands or, occasionally, agricultural fields, perching on shrubs, trees, posts, fences, and utility lines. Loggerhead shrikes feed on a variety of small prey including arthropods, mammals, amphibians, reptiles and birds (Yosef, 1996). Since it lacks talons, it often impales prey on thorns or barbed wire. This species nests on stable branches in densely foliated tree or shrubs. It is a confirmed breeder in Contra Costa County and the local nesting season spans from March through August (Glover, 2009).

Critical Habitat: Critical habitat has not been designated for the loggerhead shrike.

Habitat Suitability and Occurrence Data: Shrubs and trees on site provide suitable nesting and foraging habitat for the species. The nearest record (Occ. #3) is a 2003

[73] CFGC § 3503
[74] CEQA § 15065

report from approximately 5.8 km (3.6 mi) to the north of the site. Despite the paucity of records for the loggerhead shrike in the region, it is presumably underreported and likely more common.

Potential Project-Related Effects: Although no loggerhead shrikes were observed during the present survey, due to the availability of suitable nesting habitat on and in the vicinity of the project site, the potential for its occurrence exists. If present at the time of construction, construction activities could have adverse effects on the species, if present, by causing nest abandonment, harassment of individuals, or disruption of breeding activities. Such impacts would be regarded as significant pursuant to CEQA. Impact avoidance measures are warranted, as outlined in Section 5.3, below.

Pacific Pond Turtle

The Pacific pond turtle (*Emys marmorata*; hereafter referred to as PPT[75]), is a California Species of Special Concern (CDFW, 2017a) and is considered sensitive by the BLM and USFS. It has been assigned a global and state ranking of G3G4/S3; species assigned a ranking of S3 are considered vulnerable to extirpation in the state due to their restricted range, relatively few populations, recent and widespread declines, or other factors (CDFW, 2017c). As such, the species may be considered to meet the criteria for listing as endangered, rare or threatened pursuant to the CEQA.[76] Impacts to species with such a ranking may be regarded as significant pursuant to CEQA[77] and should be addressed in environmental review documents.[78] The PPT is a covered species under the HCP/NCCP (Jones & Stokes, 2006).

The PPT is the only fresh-water turtle native to greater California. It is distributed along much of the West Coast from the Puget Sound in Washington south to the Baja Peninsula, Mexico. Overall, the PPT is a habitat generalist and has been observed in slow-moving rivers and streams (e.g. in oxbows), lakes, reservoirs, permanent and ephemeral wetlands, stock ponds, and sewage treatment plants. The species prefers aquatic habitat with refugia such as undercut banks and submerged vegetation (Holland, 1994), and requires emergent basking sites such as mud banks, rocks, logs, and root wads to thermoregulate their body temperature (Holland, 1994; Bash, 1999). The PPT is omnivorous, feeding on a variety of aquatic and terrestrial invertebrates, fish, amphibians and aquatic plants.

The PPT regularly utilizes upland terrestrial habitats, most often during the summer and winter, especially for oviposition (i.e., egg laying), overwintering, seasonal terrestrial habitat use, and overland dispersal (Reese, 1996; Holland, 1994). Females

[75] Formerly classified as *Clemmys marmorata* and *Actinemys marmorata*; also known as western pond turtle.
[76] CEQA § 15380(d)
[77] CEQA § 15065
[78] CEQA § 15125

have been reported to range as far as 500 m (1640 ft) from a watercourse to find suitable nesting habitat (Reese and Welsh, 1997). Nest sites are most often situated on south or west-facing slopes, are sparsely vegetated with short grasses or forbs, and are scraped in sands or hard-packed, dry, silt or clay soils (Holland, 1994; Rathbun et al., 1992; Holte, 1998; Reese and Welsh, 1997). The species exhibits high site fidelity, returning in sequential years to the same terrestrial site to nest or overwinter (Reese, 1996).

Females lay their clutches as early from as early as the end of April in the southern half of the State, although they egg laying occurs predominantly in June and July. In the early morning or late afternoon, gravid females leave the water and move upland to nest (Holland, 1994). Natural incubation times vary, ranging from 80 to 100 days in California. In northern California and Oregon, hatchlings remaining the nest after hatching and overwinter, emerging in the spring. In southern and central California, those PPTs that don't overwinter emerge from the nest in the early fall (Holland, 1994).

Critical Habitat: Critical habitat has not been designated for the Pacific pond turtle.

Habitat Suitability and Occurrence Data: The upper and lower reaches of Marsh Creek provide both suitable breeding habitat and a movement corridor for PPT. While the section of Marsh Creek in which the project is located provides perennial water, vegetative cover and warm, sandy banks, it is also highly visible to trail users and exposed to predation by people, wildlife, and pets. In addition, competition from the non-native turtle red-eared slider is expected; five adults and two juveniles were observed on site during the present survey. The project site is mapped as core PPT habitat as modelled in the HCP/NCCP (Jones & Stokes, 2006).

There are no records of the species occurring within 4.8 km (3 mi) of the project site. The nearest record for PPT (Occ. #279 and 282) are reports from near the mouth of Marsh Creek, 6.5 km (4 mi) north of the project site.

Potential Project-Related Effects: Despite a lack of records for PPT at or near the project site, the potential for occurrence of the species exists. If present, construction activities could result in direct mortalities. In the long-term, however, project implementation would increase suitable habitat for the species. Impact avoidance measures are warranted, as outlined in Section 5.3, below.

Silvery Legless Lizard

The silvery legless lizard (*Anniella pulchra pulchra;* hereafter SLL), is listed as a Species of Special Concern by the CDFW (2017c). It has been assigned a global and state ranking of G3G4/S3; species assigned a ranking of S3 are considered vulnerable to extirpation in the state due to their restricted range, relatively few populations, recent

and widespread declines, or other factors (CDFW, 2017c). As such, the species may be considered to meet the criteria for listing as endangered, rare or threatened pursuant to the CEQA.[79] Impacts to species with such a ranking may be regarded as significant pursuant to CEQA[80] and should be addressed in environmental review documents.[81] The SLL is a covered species under the HCP/NCCP (Jones & Stokes, 2006).

The SLL inhabits sandy or loose loamy soils that support sparse vegetation of beaches, interior dunes, chaparral, or pine-oak woodland, as well as streamside stands of sycamores, cottonwoods and oaks. This species uses burrows it creates in loose soil near the base of slopes, near streams, and in close vicinity of logs, rocks, boards, and debris. As a diurnal species (active during the day), the SLL forages in leaf litter beneath trees and bushes on sunny slopes and under rocks and logs. Bush lupine often grows in areas that are suitable for this lizard. Rocky soils and areas disturbed by agriculture, sand mining, or other human activities are typically not suitable for species.

Critical Habitat: Critical habitat has not been designated for the SLL.

Habitat Suitability and Occurrence Data: The loose loamy soils found in the study area are marginally suitable for the SLL, and the subspecies is well documented in the Oakley and Brentwood region. Although the soils at the project site are marginally suitable for the species, the site has been heavily disturbed by human activities associated with flood control, agriculture, and development. Despite this condition due to the abundance of suitable habitat for the species in the project vicinity, the potential for occurrence of SLL cannot be ruled out.

The nearest record for the SLL (Occ. #58) is a poorly documented sighting near Brentwood. Two other records (Occ. #21 and 41) are sightings from 2004 and 2005 in Oakley approximately 5.3 km (3.3 mi) to the north. The project site is not mapped as supporting suitable habitat for the species as modelled in the HCP/NCCP (Jones & Stokes, 2006).

Potential Project-Related Effects: There is a potential for the occurrence of **SLL** on site; if present at the time of construction, the species could be harmed. However, take of SLL is covered under the HCP/NCCP (Jones & Stokes, 2006) and no survey requirements for the species are specified.

[79] CEQA § 15380(d)
[80] CEQA § 15065
[81] CEQA § 15125

Migratory and Other Special-Status Birds

In addition to the specific target species evaluated above, the study area supports suitable nesting habitat for migratory raptors (i.e., birds of prey) and passerines (i.e., perching birds). Migratory birds are protected under the MBTA and MBTRA. Under the MBTA it is unlawful to pursue, hunt, take, capture or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried or received any migratory bird, part, nest, egg or product, manufactured or not. Bird species covered under the MBTA are summarized by the USFWS (2008). Certain other migratory birds receive protection under the BGEPA and CFGC.

The project site supports suitable nesting habitat for numerous species of migratory birds. Based on the amount of vegetative cover on site, there is a high potential for the utilization of these habitats for breeding by such birds. Site clearing activities could result in a take of migratory birds. In addition, construction-related disturbances during the nesting season could result in nest abandonment and mortality of young, which would be a significant adverse effect pursuant to CEQA.

Potential Project-Related Effects: Construction activities could disrupt breeding behavior of any birds nesting in the project vicinity. Impact avoidance measures are warranted, as outlined in Section 5.3, below.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The proposed Three Creeks Restoration Project at Marsh Creek would require grading back a section of the right bank of Marsh Creek approximately 1,220 m (4,000 ft) long. A total area of approximately 1.6 ha (4 ac) would be graded down to create a widened flood plain and new creek bank. Grading would impact ruderal habitat and several native oaks and non-native trees and vines. Excavated spoils would be disposed of on the Hancock parcel over an area of approximately 3.6 ha (9 ac). The proposed project would also result in the placement of temporary fill into Marsh Creek, Sand Creek, and Deer Creek to permit the movement of earth moving equipment to and from the Hancock parcel.

As summarized in Section 4.1, above, project implementation would result in direct and indirect impacts to waters of the U.S. and waters of the State. These impacts, along with measures to avoid, minimize and/or mitigate significant impacts are discussed in Section 5.3.1, below.

As summarized in Section 4.2, above, no federally or state-listed plant species are considered to have any potential to occur on site. Similarly, none of the target special-status plant species is considered to have any potential to occur on site. Project

implementation is therefore not expected to have any significant effects on special-status plant species. No impact avoidance, minimization or mitigation measures are warranted.

As summarized in Section 4.3, project implementation could affect four federally and/or state listed, candidate or fully protected wildlife species including California red-legged frog, steelhead, Swainson's hawk, and white-tailed kite. Project implementation could also affect five special-status wildlife species including burrowing owl, Chinook, loggerhead shrike, Pacific pond turtle, and silvery legless lizard. If present, project implementation could result in significant adverse effects on special-status animal species. These impacts, along with measures to avoid, minimize and/or mitigate significant impacts are discussed in Section 5.3.3, below.

5.1 Special-status Natural Communities

5.1.1 Waters of the U.S. / Waters of the State

Marsh Creek is expected to qualify as a water of the U.S. and a water of the State. Impacts below the tops of bank of the channel are regulated and fall under the jurisdiction of the USACE, RWQCB, and the CDFW. The expected limits of jurisdiction are illustrated in Figures 6a-c, above.

As outlined in Section 1.1, above, the proposed project calls for the grading back of the right (eastern) bank of Marsh Creek to an elevation just above the OHWM. The total length of channel to be altered is 1,300 m (4,300 ft). These impacts would be regarded as significant under CEQA and are regulated under federal, state, and County laws and policies. With the implementation of the measures outlined below, project impacts would be reduced to a less-than-significant level.

Avoidance/Minimization/Mitigation Measures: In order to avoid, minimize and compensate for unavoidable impacts on waters of the U.S./waters of the State, the measures outlined below should be implemented.

1) The very nature of the proposed restoration project requires grading within the Marsh Creek channel. Impacts on waters of the U.S. will be avoided by restricting grading to an elevation above the OHWM; avoidance of impacts to waters of the State is not feasible. Long-term impacts should be minimized by limiting the use of hardened structures (e.g., mortared riprap) in preference of bio-engineering solutions as much as is practicable. Surface water connections must not be permanently blocked or interrupted and the installation of drop-structures or other features that create barriers to wildlife movement should be avoided.
2) Prior to construction, the project proponent will need to secure authorization from the USACE, CDFW and RWQCB in conformance to the CWA and LSAP.

3) A copy of this report should be submitted to the USACE, CDFW and RWQCB in support of the permit application process. Work may not proceed until authorization has been received from these agencies.

4) Coordination with the Habitat Conservancy is also required. Participation in the HCP/NCCP is expected to satisfy the requirements of the regulatory agencies for compensatory mitigation for unavoidable impacts on stream channels, wetlands and riparian habitat. A Planning Survey Report should be completed and submitted to the Habitat Conservancy. The submittal will need to include detailed drawing illustrating all temporary and permanent impacts.

5) Per the terms of the adopted HCP/NCCP, a wetland mitigation fee may be paid in-lieu of habitat restoration. If accepted by the regulatory agencies, no additional mitigation for wetland impacts is typically required. The payment of in-lieu fees must be made prior to issuance of a grading permit. If a grading permit is not required, fees must be paid prior to issuance of the first construction permit.

6) For all work within and adjacent to the stream channel and riparian habitat, best management practices (BMPs) must be incorporated into the project design to minimize environmental effects. These include the following:

   - Construction in the active channels should be restricted to the dry season (April 15-October 15).
   - Personnel conducting ground-disturbing activities within or adjacent to the buffer zone of wetlands, ponds, streams, or riparian woodland/scrub should be trained by a qualified biologist in these avoidance and minimization measures and the permit obligations.
   - If dewatering is necessary, water released downstream of work areas must be as clean or cleaner than flows entering the work area. Sediment-laden water should be either pumped onto upland sites for infiltration or into Baker tanks for settling, prior to being released back into the channel. Coffer dams should consist of clean, silt-free sand or gravel in sand bags, or a comparable material. All coffer dam materials must be promptly removed when no longer needed.
   - High visibility construction fencing should be erected between the outer edge of the limits of construction and adjacent streams or habitats to be preserved. Temporary construction fencing will be removed upon the completion of work.
   - Grading or construction near channels should be isolated with silt fencing or other BMPs to prevent sedimentation. BMPs should be regularly inspected.
   - Vehicles and equipment should be parked on existing roads or previously disturbed areas.
   - Temporary creek crossings should utilize clean fill, free of silt or other contaminants. Fill should be wrapped in filter fabric or other geotextile, or appropriately protected with erosion-control blankets or similar. Crossing should

include piping to permit the uninterrupted movement of water in the channels. Upon the completion of work, all fill, piping, fabric or other construction materials should be removed and the original contours or channel condition restored.

- Equipment working in channels must be in good working order and free of leaks of fuel, oil, and hydraulic fluids. Drip pans should be placed under vehicles and equipment over waterways and spill clean-up materials should be kept onsite at a convenient location.
- Equipment maintenance and refueling should be performed well away from the top of bank of any channel; storm drain inlets should be protected from an accidental release of contaminants.
- Concrete washings or other contaminants must not be permitted to enter the stream channel or any storm drain inlet.
- Any concrete structures or cured-in-place pipe linings should be allowed to cure before coming in contact with surface flows.
- Construction debris and materials should be stockpiled away from watercourses.
- Appropriate erosion-control measures (e.g., coconut coir matting, tackified hydroseeding, blown straw or other organic mulching material) should be used on site to reduce siltation and runoff of contaminants into wetlands, ponds, streams, or riparian woodland/scrub. Plastic mono-filament netting (e.g., that used with erosion control matting) or similar material should not be used within the action area; wildlife can become entangled or trapped such non-biodegradable materials. Erosion-control measures should be placed between the outer edge of the buffer and the project site.
- Fiber rolls used for erosion control should be certified as free of noxious weed seed.
- Construction staging areas past the channel banks must be located away from any wetlands or other sensitive habitats as identified by a qualified biologist.
- Newly graded earthen channel slopes should be revegetated with a native seed mix developed by a qualified restorationist. Seed mixtures applied for erosion control should not contain invasive nonnative species, and be composed of native species or sterile nonnative species. Straw or mulch should also be applied to all bare surfaces. The seed mix and mulch should be applied prior to the onset of the first winter-season rains.
- Herbicide should not be applied within 30 m (100 ft) of wetlands, ponds, streams, or riparian habitat. However, where appropriate to control serious invasive plants, herbicides that have been approved by the EPA for use in or adjacent to aquatic habitats may be used as long as label instructions are followed and applications avoid or minimize impacts on covered species and their habitats. In

seasonal or intermittent stream or wetland environments, appropriate herbicides may be applied during the dry season to control nonnative invasive species. Herbicide drift should be minimized by applying the herbicide as close to the target area as possible and by avoiding applying during windy days.

- Additional measures may be outlined in the conditions of the permits issued by the USACE, CDFW, RWQCB, and the Habitat Conservancy. All permit conditions must be conformed to.

5.2 Special-Status Plant Species

No federally listed, state-listed, or other special-status plant species were detected and none is expected to occur within the project site. Project implementation would not result in any significant impacts to special-status plant species. No further surveys or impact avoidance, minimization, or mitigation measures are warranted.

5.3 Special-Status Animal Species

Project implementation could result in direct and indirect effects to special-status wildlife species through direct mortality, injury or harassment of individuals and the loss of suitable breeding, non-breeding aquatic, roosting, foraging, and dispersal habitat and/or daily/seasonal movement corridors. To avoid potential impacts associated with the project, the measures outlined below should be implemented.

5.3.1 Implications of the Proposed Project: California Red-Legged Frog, Pacific Pond Turtle, and Silvery Legless Lizard

Populations of CRF, PPT, and SLL have been recorded from the project region. Although the occurrence of these species is considered unlikely, the lack of significant barriers to movement between known source populations and the project site means that the potential exists for these species to move into harm's way during construction. Direct and indirect impacts to the CRF, PPT, and SLL would be considered significant pursuant to CEQA guidelines. With the implementation of the measures outlined below, project impacts would be reduced to a less-than-significant level.

Mitigation/Avoidance/Minimization Measures: Although the occurrence on site of CRF, SLL and PPT is considered unlikely, if present during construction activities, direct mortalities could result. The following measures should be implemented:

1) Participation in the HCP/NCCP. The project proponent should apply for coverage under the HCP/NCCP. Participation in the HCP/NCCP would provide the applicant with incidental take coverage for CRF, PPT, and SLL. Under the HCP/NCCP, preconstruction surveys are not required for CRF, PPT, or SLL.

2) Seasonal Avoidance. Work should be limited to the dry season, from April 15 to October 15.

3) Minimize Nighttime Work. Nighttime construction should be restricted to avoid effects on nocturnally active species such as CRF.

4) Environmental Awareness Program. Prior to the commencement of construction activities, a qualified biologist should present an environmental awareness program to all construction personnel working on site. At a minimum the training should include a description of special-status species that could be encountered, their habitats, regulatory status, protective measures, work boundaries, lines of communication, reporting requirements, and the implications of violations of applicable laws.

5) Wildlife Exclusion Fencing. Prior to the start of construction, wildlife exclusion fencing (WEF)[82] should be installed to isolate the work area from any habitats potentially supporting special-status animals or through which such species may move. The final project plans should indicate where and how the WEF is to be installed. The bid solicitation package special provisions should provide further instructions to the contractor about acceptable fencing material. The fencing should remain throughout the duration of the work activities, be regularly inspected and properly maintained by the contractor. Fencing and stakes shall be completely removed following project completion.

6) Preconstruction Surveys. Under the HCP/NCCP, preconstruction surveys for CRF, PPT, and SLL are not required. However, incidental take of these species would constitute a significant impact pursuant to CEQA guidelines. Therefore, a preconstruction survey for both CRF and PPT should be conducted immediately prior to vegetation clearing and construction activities within the Marsh Creek channel.

7) Best Management Practices (BMPs). Prior to the initiation of work, BMPs should be in place to prevent the release of any pollutants or sediment into the creek, storm drains, or tributaries; all BMPs should be properly maintained. Leaks, drips, and spills of hydraulic fluid, oil, or fuel from construction equipment should be promptly cleaned up to prevent contamination of water ways. All workers should be properly trained regarding the importance of preventing and cleaning up spills of contaminants. Protective measures should include, at a minimum:

    a. No discharge of pollutants from vehicle and equipment cleaning should be allowed into any storm drains or watercourses.

[82] Wildlife Exclusion Fencing should provide a barrier for terrestrial wildlife gaining access to the project work areas. The fencing may vary to meet the needs of a particular species, but should be buried and/or backfilled to prevent animals passing under the fence and should be high enough to deter reptiles, amphibians or small mammals from climbing or jumping over the fence. Acceptable fencing materials include Animex®, ERTEC E-Fence®, silt fencing, plywood, corrugated metal, or other suitable materials approved by the project biologist.

b. Spill containment kits should be maintained onsite at all times during construction operations and/or staging or fueling of equipment.

c. Coir rolls or straw wattles should be installed along or at the base of slopes during construction to capture sediment.

8) Erosion Control. Graded areas should be protected from erosion using a combination of silt fences, fiber rolls along toes of slopes or along edges of designated staging areas, and erosion control netting (such as jute or coir) as appropriate on sloped areas.

9) Construction Site Restrictions. The following site restrictions should be implemented to avoid adversely affecting sensitive habitats and harm or harassment to listed species:

a) Any fill material should be certified to be non-toxic and weed free.

b) All food and food-related trash items should be enclosed in sealed trash containers and removed completely from the site at the end of each day.

c) No pets from project personnel should be allowed anywhere in the project site during construction.

d) No firearms should be allowed on the project site except for those carried by authorized security personnel, or local, State or Federal law enforcement officials.

e) All equipment should be maintained such that there are no leaks of automotive fluids such as gasoline, oils or solvents and a Spill Response Plan should be prepared. Hazardous materials such as fuels, oils, solvents, etc. should be stored in sealable containers in a designated location that is isolated from wetlands and aquatic habitats.

f) Servicing of vehicles and construction equipment including fueling, cleaning, and maintenance should occur only at sites isolated from any aquatic habitat unless separated by topographic or drainage barrier or unless it is an already existing gas station. Staging areas may occur closer to the project activities as required.

10) Proper Use of Erosion Control Devices. Plastic mono-filament netting (e.g., that used with erosion control matting) or similar material should not be used within the action area; wildlife can become entangled or trapped such non-biodegradable materials. Acceptable substitutes include coconut coir matting, tackified hydroseeding, blown straw, or other organic mulching material.

11) Protocol for Species Observation - CRF. If CRF are encountered in the project site, work must cease immediately; observations of CRF require the immediate notification of the USFWS by calling (916) 930-5603. These species may not be handled, relocated, shooed away or otherwise harassed. Based on the professional judgment of the biological monitor and pending authorization from the USFWS,

work may only proceed if project activities can be conducted without harming or harassing the detected species. All project personnel should be notified of the finding and at no time may work occur within 15 m (50 ft) of the individual without a biological monitor present.

12) Protocol for Species Observation – PPT and SLL. If a PPT or SLL is encountered in the project site, work must cease immediately until the animal either moves out of harm's way of its own accord or is safely relocated well upstream or downstream of the project site. Only a qualified biologist with a scientific collection permit issued by the CDFW may handle and relocate PPT or SLL. Any sightings and relocation of PPT and SLL should be reported to the CDFW and the CNDDB.

5.3.2 Implications of the Proposed Project: Steelhead and Chinook

Although there are no records for steelhead or Chinook occurring in Marsh Creek in the CNDDB (2017), recent sightings of fall-run Chinook have been reported (Jones & Stokes, 2003). If present in the creek at the time of construction, the potential exists for these species to be harmed. Direct and indirect impacts to the either steelhead or Chinook would be considered significant under CEQA guidelines. With the implementation of the measures outlined below, project impacts would be reduced to a less-than-significant level.

Mitigation/Avoidance/Minimization Measures: The occurrence on site of steelhead and Chinook is considered unlikely, and the project would not involve construction activities in flowing waters of Marsh Creek. In the event implementation of the project requires either dewatering or excavation in the live channel, take of steelhead or Chinook could occur; neither of these species is covered under the HCP/NCCP. To ensure there is no take of either of these species, the measures outlined below should be implemented if work in the live channel becomes necessary.

1) Seasonal Avoidance. Work should be limited to the dry season, from April 15 to October 15.

2) In-Stream Activities: For any in-stream construction activities or dewatering, the following precautionary measures should be implemented:

    a) A preconstruction survey of the aquatic environment shall be performed by a qualified biologist.

    b) A qualified biologist shall present an environmental awareness program working on site.

    c) A qualified biologist should monitor all in-stream activities.

    d) If dewatering is proposed, a qualified biologist should monitor the installation of coffer dams. During dewatering, a qualified biologist should check for stranded aquatic wildlife. Dewatering pumps must be fitted with intake screens with a mesh no greater than 5 mm (0.2 in).

e) Native species should be relocated upstream or downstream of the cofferdams by a permitted biologist. Non-native species should be euthanized in accordance with the guidance of CDFW. All wildlife encounters should be documented and reported to the CDFW.

5.3.3 Implications of the Proposed Project: Impacts on Special-Status and Migratory Bird Species

Within the project site, trees, shrubs, vines, and grasslands provide suitable nesting habitat for four special-status bird species (Swainson's hawk, white-tailed kite, burrowing owl, and loggerhead shrike) as well as many other migratory bird species. Ground disturbing activities (e.g., grubbing, grading, trenching, and tree removal or pruning) could result in direct or indirect impacts to nesting birds by causing the destruction or abandonment of occupied nests. Direct and indirect impacts to special-status and migratory bird species would be considered significant under CEQA guidelines. With the implementation of the measures outlined below, project impacts would be reduced to a less-than-significant level.

Impact Avoidance/Minimization Measures – Special-Status and Other Migratory Birds: In order to avoid impacts to Swainson's hawk, white-tailed kite, burrowing owl, loggerhead shrike and other migratory bird species during project implementation, the measures outlined below should be followed.

1) Environmental Awareness Program. Prior to the commencement of construction activities, a qualified biologist should present an environmental awareness program to all construction personnel working on site. At a minimum the training should include a description of special-status species that could be encountered, their habitats, regulatory status, protective measures, work boundaries, lines of communication, reporting requirements, and the implications of violations of applicable laws.

2) Swainson's hawk is a federally listed threatened species and is covered under the HCP/NCCP. Nonetheless, every effort should be made to ensure that no take of Swainson's hawk occurs. Therefore, the measures outlined below should be followed.

   a) The project proponent should apply for coverage under the HCP/NCCP. Participation in the HCP/NCCP would provide the applicant with incidental take coverage for Swainson's hawk and satisfy any requirements for mitigation for loss of habitat.

   b) Prior to any ground disturbance during the nesting season (March 15-September 15), a qualified biologist should conduct a preconstruction survey no more than one month prior to construction to determine if there are any active Swainson's hawk nests within 305 m (1,000 ft) of the project site.

   c) If there are no occupied nests within this buffer, no further action is needed.

d) If an active nest is present within this buffer, the measures outlined below should be followed.

- Construction activities are not permitted within 305 m (1,000 ft) of an occupied nest to prevent nest abandonment. However, if site-specific conditions or the nature of the activity warrant a small buffer, a qualified biologist should coordinate with the CDFW and USFWS to determine the appropriate buffer size.
- Construction activities may proceed prior to September 15 if the young Swainson's hawks have fledged, as determined by a qualified biologist.

3) White-tailed kite is a state-listed fully protected species; it is not covered under the HCP/NCCP and incidental take of the species is not allowed. To ensure that no take of white-tailed kite or other migratory raptors occurs, the measures outlined below should be followed.

a) Prior to any ground disturbance during the nesting season (February 1-August 31), a qualified biologist should conduct a preconstruction survey no more than two weeks prior to construction to determine if there are any active nests of white-tailed kite or other migratory raptors within 90 m (300 ft) of the project site.

b) Prior to the removal or significant pruning of any trees, they should be inspected by a qualified biologist for the presence of raptor nests. This is required regardless of season. If a suspected raptor nest is discovered, the CDFW shall be notified. Pursuant to CFGC Section 3503.5, raptor nests, whether or not they are occupied, may not be removed until approval is granted by the CDFW.

c) If there are no occupied nests within this buffer, no further action is needed.

d) If an active nest is present within this buffer, the measures outlined below should be followed.

- Construction activities are not permitted within 76 m (250 ft) of an occupied nest to prevent nest abandonment. However, if site-specific conditions or the nature of the activity warrant a small buffer, a qualified biologist should coordinate with the CDFW and/or USFWS to determine the appropriate buffer size. Nest monitoring may be warranted for activities that would occur within a smaller buffer.
- Construction activities may proceed prior to August 31 if the young white-tailed kites or other raptor species have fledged, as determined by a qualified biologist.

4) Burrowing owl is a State species of special concern and a covered species under the HCP/NCCP. To ensure that no take of burrowing owl occurs, the measures outlined below should be followed.

a) Prior to any ground disturbance during the nesting season (February 1-August 31), a CDFW-approved biologist should conduct a preconstruction survey of all suitable burrowing owl habitat that would be affected by the project. The survey should be performed no more than 30 days prior to construction to determine if thereare any active nests of burrowing owl within 153 m (500 ft) of the project site, access permitting.

b) If there are no occupied nests within this buffer, no further action is needed.

c) If an active nest is present within this buffer, the measures outlined below should be followed.

- If an occupied burrowing owl nest site is present within the limits of work, construction may not proceed. The taking of burrowing owls or occupied nests is prohibited under CFGC.[83] Nest sites must be flagged and protected by a designated disturbance-free buffer zone of at least 76 m (250 ft).
- Construction activities are not permitted within 76 m (250 ft) of an occupied nest to prevent nest abandonment.
- Construction may proceed if a qualified biologist monitors the nest and determines that the adults have not begun egg-laying and incubation or that the juveniles have fledged.
- Burrowing owls may be passively excluded from occupied burrows outside of the breeding season (i.e., September 1-January 31), in consultation with the CDFW. All owls should be passively excluded from burrows within 49 m (160 ft) of the work site. Passive exclusion is achieved by installing one-way doors in the burrow entrances. Doors should be in place for at least 48 hours and the site should be monitored daily for at least one week to confirm that the burrow has been abandoned.

5) Loggerhead shrike is a state species of special concern; it is not covered under the HCP/NCCP and incidental take of the species is not allowed. To ensure that no take of <u>loggerhead shrike or other migratory passerines</u> occurs, the measures outlined below should be followed.

a) If ground-disturbing activities (i.e., site clearing, disking, grading, etc.) can be performed outside of the nesting season (i.e., between September 1 and January 31), no additional surveys are warranted.

b) Prior to any ground disturbance during the nesting season (February 1-August 31), a qualified biologist should conduct a preconstruction survey no more than two weeks prior to construction to determine if there are any active nests of loggerhead shrike or other migratory passerines nests within 30 m (100 ft) of the project site.

[83] CFGC §§3503, 3503.5 and 3800

c) If there are no occupied nests within this buffer, no further action is needed.

d) If an active nest is present within this buffer, the following measures should be followed.

- Construction activities are not permitted within 30 m (100 ft) of an occupied nest to prevent nest abandonment. However, if site-specific conditions or the nature of the activity warrant a smaller buffer, a qualified biologist should coordinate with the CDFW and USFWS to determine the appropriate buffer size. Nest monitoring may be warranted for activities that would occur within a smaller buffer.
- Construction activities may proceed prior to August 31 if the young birds have fledged, as determined by a qualified biologist.

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APPENDIX A. SITE PHOTOGRAPHS

Photographs taken May 13 and November 17, 2015, July 22, 2016, and July 24, 2017

View from footbridge at upstream end of study area, looking upstream.
Photos dated 7/22/2016
View from footbridge at upsteram end of study area, looking downstream.

View of channel at upstream end of study area, looking toward Dainty Ave.
Photos dated 7/22/2016
View from Dainty Ave. bridge, looking upstream.

View from Dainty Ave. Bridge, looking downstream.
Photos dated 11/17/2015
Looking upstream toward Dainty Ave.

View from Central Ave., looking upstream.
Photos dated 11/17/2015
Looking downstream toward Central Ave.

View from Central Ave., looking downstream.
Photos dated 11/17/2015
View of confluence of Deer Creek and Marsh Creek, looking upstream.

View from confluence of Deer Creek and Marsh Creek, looking downstream.
Photos dated 11/17/2015
View from confluence of San Creek and Marsh Creek, looking upstream .

Middle reach, looking downstream toward Sand Creek confluence.
Photos dated 5/12/2015
View at confluence of Sand Creek (L) and Marsh Creek (R), looking downstream.

Lower reach, upstream end, looking upstream at Sand Creek.
Photos dated 5/12/2015
Lower reach, upstream end, looking upstream from confluence with Sand Creek.

Lower reach, near mid-point, looking upstream (south).
Photos dated 5/12/2015
Lower reach, near mid-point, looking downstream (north).

Lower reach, downstream end, looking upstream (south) from footbridge.
Photos dated 5/12/2015
Lower reach, downstream end, looking downstream (north) from footbridge.

View of uplands, upstream end of lower reach, looking north.
Photos dated 5/12/2015
View of uplands, view of upstream end of lower reach, looking southwest.

View of uplands near mid-point of lower reach, looking southwest.
Photos dated 5/12/2015
View of uplands near mid-point of lower reach, looking northeast.

View of uplands at downstream end of lower reach, looking south.
Photos dated 5/12/2015
View of uplands at downstream end of lower reach, looking north.

Typical condition of right channel bank and footpath.
Photos dated 5/12/2015
View of access route, looking southeast from footpath at lower reach.

Burrowing owl, at downstream end of lower reach.
Photos dated 5/12/2015
Burrowing owl at escape burrow on railroad embankment.

Burrowing owl burrows, downstream end of lower reach.
Photos dated 5/12/2015
Burrowing owl nesting site, downstream end of lower reach, looking southwest.

Burrowing owl nesting site, downstream end of lower reach,
looking northeast. 5/12/2015

Same view, 11/17/2015

View of bio-detention basin in lower reach, looking upstream.
Photos dated 7/22/2016
View of upper end of bio-detention basin, looking upstream.

View from NE corner, looking upstream along Marsh Creek
Hancock Parcel. Photos dated 7/24/2017
View from NE corner, looking upstream along Sand Creek

View from NW corner, looking downstream along Sand Creek
Hancock Parcel. Photos dated 7/24/2017
View from NW corner, looking S

View from SW corner, looking downstream along Deer Creek
Hancock Parcel. Photos dated 7/24/2017
View from middle of S side, looking NE across parcel

View from SE corner, looking upstream along Deer Creek
Hancock Parcel. Photos dated 7/24/2017
View from SE corner, looking downstream along Marsh Creek

APPENDIX B. DATABASE PRINTOUTS FOR SPECIAL-STATUS SPECIES

California Natural Diversity Database (2017)
California Native Plant Society (2017)
USFWS Database (2017)

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Brentwood, Jersey Island, Bouldin Island, Antioch South, Tassajara, Antioch North, Woodward Island, Byron Hot Springs, and Clifton Court Forebay 7.5-minute USGS quadrangles

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SSC
Alkali Meadow Alkali Meadow	CTT45310CA	None	None	G3	S2.1	
Alkali Seep Alkali Seep	CTT45320CA	None	None	G3	S2.1	
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Ammodramus savannarum grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
Amsinckia grandiflora large-flowered fiddleneck	PDBOR01050	Endangered	Endangered	G1	S1	1B.1
Andrena blennospermatis Blennosperma vernal pool andrenid bee	IIHYM35030	None	None	G2	S2	
Anniella pulchra northern California legless lizard	ARACC01020	None	None	G3	S3	SSC
Anomobryum julaceum slender silver moss	NBMUS80010	None	None	G5?	S2	4.2
Anthicus antiochensis Antioch Dunes anthicid beetle	IICOL49020	None	None	G1	S1	
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Apodemia mormo langei Lange's metalmark butterfly	IILEPH7012	Endangered	None	G5T1	S1	
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Archoplites interruptus Sacramento perch	AFCQB07010	None	None	G2G3	S1	SSC
Arctostaphylos auriculata Mt. Diablo manzanita	PDERI04040	None	None	G2	S2	1B.3
Arctostaphylos manzanita ssp. laevigata Contra Costa manzanita	PDERI04273	None	None	G5T2	S2	1B.2
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Arizona elegans occidentalis California glossy snake	ARADB01017	None	None	G5T2	S2	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1	None	None	G2T2	S2	1B.2
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Atriplex cordulata var. cordulata heartscale	PDCHE040B0	None	None	G3T2	S2	1B.2
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Blepharizonia plumosa big tarplant	PDAST1C011	None	None	G2	S2	1B.1
Bombus crotchii Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	
Bombus occidentalis western bumble bee	IIHYM24250	None	None	G2G3	S1	
Branchinecta conservatio Conservancy fairy shrimp	ICBRA03010	Endangered	None	G2	S2	
Branchinecta longiantenna longhorn fairy shrimp	ICBRA03020	Endangered	None	G1	S1S2	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Branchinecta mesovallensis midvalley fairy shrimp	ICBRA03150	None	None	G2	S2S3	
Brasenia schreberi watershield	PDCAB01010	None	None	G5	S3	2B.3
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
California macrophylla round-leaved filaree	PDGER01070	None	None	G3?	S3?	1B.2
Calochortus pulchellus Mt. Diablo fairy-lantern	PMLIL0D160	None	None	G2	S2	1B.2
Carex comosa bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
Centromadia parryi ssp. congdonii Congdon's tarplant	PDAST4R0P1	None	None	G3T2	S2	1B.1
Chloropyron molle ssp. molle soft salty bird's-beak	PDSCR0J0D2	Endangered	Rare	G2T1	S1	1B.2
Cicuta maculata var. bolanderi Bolander's water-hemlock	PDAPI0M051	None	None	G5T4	S2	2B.1
Circus cyaneus northern harrier	ABNKC11010	None	None	G5	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Cismontane Alkali Marsh Cismontane Alkali Marsh	CTT52310CA	None	None	G1	S1.1	
Coastal and Valley Freshwater Marsh Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
Coastal Brackish Marsh Coastal Brackish Marsh	CTT52200CA	None	None	G2	S2.1	
Coelus gracilis San Joaquin dune beetle	IICOL4A020	None	None	G1	S1	
Cryptantha hooveri Hoover's cryptantha	PDBOR0A190	None	None	GH	SH	1A
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
Efferia antiochi Antioch efferian robberfly	IIDIP07010	None	None	G1G2	S1S2	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
Eriogonum nudum var. psychicola Antioch Dunes buckwheat	PDPGN0849Q	None	None	G5T1	S1	1B.1
Eriogonum truncatum Mt. Diablo buckwheat	PDPGN085Z0	None	None	G2	S2	1B.1
Eryngium jepsonii Jepson's coyote-thistle	PDAPI0Z130	None	None	G2	S2	1B.2
Eryngium racemosum Delta button-celery	PDAPI0Z0S0	None	Endangered	G1	S1	1B.1
Eryngium spinosepalum spiny-sepaled button-celery	PDAPI0Z0Y0	None	None	G2	S2	1B.2
Erysimum capitatum var. angustatum Contra Costa wallflower	PDBRA16052	Endangered	Endangered	G5T1	S1	1B.1
Eschscholzia rhombipetala diamond-petaled California poppy	PDPAP0A0D0	None	None	G1	S1	1B.1
Eucerceris ruficeps redheaded sphecid wasp	IIHYM18010	None	None	G1G3	S1S2	
Extriplex joaquinana San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
Falco mexicanus prairie falcon	ABNKD06090	None	None	G5	S4	WL

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
Fritillaria agrestis stinkbells	PMLIL0V010	None	None	G3	S3	4.2
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Geothlypis trichas sinuosa saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T3	S3	SSC
Helianthella castanea Diablo helianthella	PDAST4M020	None	None	G2	S2	1B.2
Helminthoglypta nickliniana bridgesi Bridges' coast range shoulderband	IMGASC2362	None	None	G3T1	S1S2	
Hesperolinon breweri Brewer's western flax	PDLIN01030	None	None	G2?	S2?	1B.2
Hibiscus lasiocarpos var. occidentalis woolly rose-mallow	PDMAL0H0R3	None	None	G5T3	S3	1B.2
Hygrotus curvipes curved-foot hygrotus diving beetle	IICOL38030	None	None	G1	S1	
Hypomesus transpacificus Delta smelt	AFCHB01040	Threatened	Endangered	G1	S1	
Idiostatus middlekauffi Middlekauff's shieldback katydid	IIORT31010	None	None	G1G2	S1	
Lanius ludovicianus loggerhead shrike	ABPBR01030	None	None	G4	S4	SSC
Lasiurus blossevillii western red bat	AMACC05060	None	None	G5	S3	SSC
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Lathyrus jepsonii var. jepsonii Delta tule pea	PDFAB250D2	None	None	G5T2	S2	1B.2
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	
Lilaeopsis masonii Mason's lilaeopsis	PDAPI19030	None	Rare	G2	S2	1B.1
Limosella australis Delta mudwort	PDSCR10030	None	None	G4G5	S2	2B.1
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Lytta molesta molestan blister beetle	IICOL4C030	None	None	G2	S2	
Madia radiata showy golden madia	PDAST650E0	None	None	G2	S2	1B.1
Malacothamnus hallii Hall's bush-mallow	PDMAL0Q0F0	None	None	G2	S2	1B.2
Masticophis flagellum ruddocki San Joaquin coachwhip	ARADB21021	None	None	G5T2T3	S2?	SSC
Masticophis lateralis euryxanthus Alameda whipsnake	ARADB21031	Threatened	Threatened	G4T2	S2	
Melospiza melodia song sparrow ("Modesto" population)	ABPBXA3010	None	None	G5	S3?	SSC
Melospiza melodia maxillaris Suisun song sparrow	ABPBXA301K	None	None	G5T3	S3	SSC
Metapogon hurdi Hurd's metapogon robberfly	IIDIP08010	None	None	G1G2	S1S2	
Myrmosula pacifica Antioch multilid wasp	IIHYM15010	None	None	GH	SH	
Navarretia nigelliformis ssp. radians shining navarretia	PDPLM0C0J2	None	None	G4T2	S2	1B.2
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	AMAFF08082	None	None	G5T2T3	S2S3	SSC
Northern Claypan Vernal Pool Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
Oenothera deltoides ssp. howellii Antioch Dunes evening-primrose	PDONA0C0B4	Endangered	Endangered	G5T1	S1	1B.1
Oncorhynchus mykiss irideus steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
Perdita scitula antiochensis Antioch andrenid bee	IIHYM01031	None	None	G1T1	S1	
Perognathus inornatus San Joaquin Pocket Mouse	AMAFD01060	None	None	G2G3	S2S3	
Phalacrocorax auritus double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
Philanthus nasalis Antioch specid wasp	IIHYM20010	None	None	G1	S1	
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Plagiobothrys hystriculus bearded popcornflower	PDBOR0V0H0	None	None	G2	S2	1B.1
Potamogeton zosteriformis eel-grass pondweed	PMPOT03160	None	None	G5	S3	2B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Puccinellia simplex California alkali grass	PMPOA53110	None	None	G3	S2	1B.2
Rana boylii foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Reithrodontomys raviventris salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Scutellaria galericulata marsh skullcap	PDLAM1U0J0	None	None	G5	S2	2B.2
Scutellaria lateriflora side-flowering skullcap	PDLAM1U0Q0	None	None	G5	S2	2B.2
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
Sidalcea keckii Keck's checkerbloom	PDMAL110D0	Endangered	None	G2	S2	1B.1
Sphecodogastra antiochensis Antioch Dunes halcitid bee	IIHYM78010	None	None	G1	S1	
Spirinchus thaleichthys longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	SSC
Stabilized Interior Dunes Stabilized Interior Dunes	CTT23100CA	None	None	G1	S1.1	
Symphyotrichum lentum Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thaleichthys pacificus eulachon	AFCHB04010	Threatened	None	G5	S3	
Thamnophis gigas giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	
Tropidocarpum capparideum caper-fruited tropidocarpum	PDBRA2R010	None	None	G1	S1	1B.1
Valley Needlegrass Grassland Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	
Valley Sink Scrub Valley Sink Scrub	CTT36210CA	None	None	G1	S1.1	
Viburnum ellipticum oval-leaved viburnum	PDCPR07080	None	None	G4G5	S3?	2B.3
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S2	

Record Count: 123

CNPS California Native Plant Society

Plant List

Inventory of Rare and Endangered Plants

63 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3812117, 3812116, 3812115, 3712187, 3712186, 3712185, 3712177 3712176 and 3712175;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Amsinckia grandiflora	large-flowered fiddleneck	Boraginaceae	annual herb	(Mar)Apr-May	1B.1	S1	G1
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	Mar-Jun	4.2	S3S4	G5?T3T4
Arctostaphylos auriculata	Mt. Diablo manzanita	Ericaceae	perennial evergreen shrub	Jan-Mar	1B.3	S2	G2
Arctostaphylos manzanita ssp. laevigata	Contra Costa manzanita	Ericaceae	perennial evergreen shrub	Jan-Mar(Apr)	1B.2	S2	G5T2
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S2	G2T2
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
Atriplex coronata var. coronata	crownscale	Chenopodiaceae	annual herb	Mar-Oct	4.2	S3	G4T3
Atriplex coronata var. vallicola	Lost Hills crownscale	Chenopodiaceae	annual herb	Apr-Sep	1B.2	S2	G4T2
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	Jul-Oct	1B.1	S2	G2
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	Jun-Sep	2B.3	S3	G5
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	(Jan)Mar-Jun	4.2	S4	G4
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	Mar-May	1B.2	S3?	G3?
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	Apr-Jun	1B.2	S2	G2
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	2B.1	S2	G5
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	May-Oct(Nov)	1B.1	S2	G3T2
Chloropyron molle ssp. molle	soft bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Nov	1B.2	S1	G2T1
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Apiaceae	perennial herb	Jul-Sep	2B.1	S2	G5T4

Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	4.2	S4	G4
Cryptantha hooveri	Hoover's cryptantha	Boraginaceae	annual herb	Apr-May	1A	SH	GH
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	1B.2	S2?	G2?
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU
Eriogonum nudum var. psychicola	Antioch Dunes buckwheat	Polygonaceae	perennial herb	Jul-Oct	1B.1	S1	G5T1
Eriogonum truncatum	Mt. Diablo buckwheat	Polygonaceae	annual herb	Apr-Sep(Nov-Dec)	1B.1	S2	G2
Eryngium jepsonii	Jepson's coyote thistle	Apiaceae	perennial herb	Apr-Aug	1B.2	S2?	G2?
Eryngium racemosum	Delta button-celery	Apiaceae	annual / perennial herb	Jun-Oct	1B.1	S1	G1
Eryngium spinosepalum	spiny-sepaled button-celery	Apiaceae	annual / perennial herb	Apr-Jun	1B.2	S2	G2
Erysimum capitatum var. angustatum	Contra Costa wallflower	Brassicaceae	perennial herb	Mar-Jul	1B.1	S1	G5T1
Eschscholzia rhombipetala	diamond-petaled California poppy	Papaveraceae	annual herb	Mar-Apr	1B.1	S1	G1
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	4.2	S3	G3
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	Feb-Apr	1B.2	S2	G2
Galium andrewsii ssp. gatense	phlox-leaf serpentine bedstraw	Rubiaceae	perennial herb	Apr-Jul	4.2	S3	G5T3
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	Mar-Jun	1B.2	S2	G2
Hesperevax caulescens	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	4.2	S3	G3
Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	May-Jul	1B.2	S2?	G2?
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Isocoma arguta	Carquinez goldenbush	Asteraceae	perennial shrub	Aug-Dec	1B.1	S1	G1
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	Mar-Jun	1B.1	S1	G1
Lasthenia ferrisiae	Ferris' goldfields	Asteraceae	annual herb	Feb-May	4.2	S3	G3
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	May-Jul(Aug-Sep)	1B.2	S2	G5T2
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	1B.1	S2	G2
Limosella australis	Delta mudwort	Scrophulariaceae	perennial stoloniferous herb	May-Aug	2B.1	S2	G4G5
Madia radiata	showy golden madia	Asteraceae	annual herb	Mar-May	1B.1	S2	G2
Malacothamnus hallii	Hall's bush-mallow	Malvaceae	perennial evergreen shrub	(Apr)May-Sep(Oct)	1B.2	S2	G2
	San Antonio Hills monardella	Lamiaceae	perennial rhizomatous herb	Jun-Aug	3	S1S3	G4T1T3Q

Monardella antonina ssp. antonina							
Myosurus minimus ssp. apus	little mousetail	Ranunculaceae	annual herb	Mar-Jun	3.1	S2	G5T2Q
Navarretia heterandra	Tehama navarretia	Polemoniaceae	annual herb	Apr-Jun	4.3	S4	G4
Navarretia nigelliformis ssp. nigelliformis	adobe navarretia	Polemoniaceae	annual herb	Apr-Jun	4.2	S3	G4T3
Navarretia nigelliformis ssp. radians	shining navarretia	Polemoniaceae	annual herb	(Mar)Apr-Jul	1B.2	S2	G4T2
Neostapfia colusana	Colusa grass	Poaceae	annual herb	May-Aug	1B.1	S1	G1
Oenothera deltoides ssp. howellii	Antioch Dunes evening-primrose	Onagraceae	perennial herb	Mar-Sep	1B.1	S1	G5T1
Plagiobothrys hystriculus	bearded popcornflower	Boraginaceae	annual herb	Apr-May	1B.1	S2	G2
Potamogeton zosteriformis	eel-grass pondweed	Potamogetonaceae	annual herb (aquatic)	Jun-Jul	2B.2	S3	G5
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	1B.2	S2	G3
Scutellaria galericulata	marsh skullcap	Lamiaceae	perennial rhizomatous herb	Jun-Sep	2B.2	S2	G5
Scutellaria lateriflora	side-flowering skullcap	Lamiaceae	perennial rhizomatous herb	Jul-Sep	2B.2	S2	G5
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3
Senecio hydrophiloides	sweet marsh ragwort	Asteraceae	perennial herb	May-Aug	4.2	S3	G5
Spergularia macrotheca var. longistyla	long styled sand-spurrey	Caryophyllaceae	perennial herb	Feb-May	1B.2	S2	G5T2
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2	S2	G2
Tropidocarpum capparideum	caper-fruited tropidocarpum	Brassicaceae	annual herb	Mar-Apr	1B.1	S1	G1
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	May-Jun	2B.3	S3?	G4G5

Suggested Citation

California Native Plant Society, Rare Plant Program. 2017. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 20 July 2017].

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Project information

NAME

Three Creeks Parkway Restoration at Marsh Creek

LOCATION

Contra Costa County, California

DESCRIPTION

Creek restoration

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species[1] are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2873	Endangered

Reptiles

NAME	STATUS
Alameda Whipsnake (=striped Racer) *Masticophis lateralis euryxanthus* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/5524	Threatened
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is a **final** critical habitat designated for this species. Your location overlaps the designated critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
San Bruno Elfin Butterfly *Callophrys mossii bayensis* No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3394	Endangered
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp Branchinecta conservatio There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp Branchinecta lynchi There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp Lepidurus packardi There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Antioch Dunes Evening-primrose Oenothera deltoides ssp. howellii There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. https://ecos.fws.gov/ecp/species/5970	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

This location overlaps the critical habitat for the following species:

NAME	TYPE
Delta Smelt Hypomesus transpacificus https://ecos.fws.gov/ecp/species/321#crithab	Final designated

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service[3]. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Conservation measures for birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Year-round bird occurrence data http://www.birdscanada.org/birdmon/default/datasummaries.jsp

The migratory birds species listed below are species of particular conservation concern (e.g. Birds of Conservation Concern) that may be potentially affected by activities in this location. It is not a list of every bird species you may find in this location, nor a guarantee that all of the bird species on this list will be found on or near this location. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To view available data on other bird species that may occur in your project area, please visit the AKN Histogram Tools and Other Bird Data Resources. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

NAME	SEASON(S)
Allen's Hummingbird Selasphorus sasin https://ecos.fws.gov/ecp/species/9637	Breeding
Bald Eagle Haliaeetus leucocephalus https://ecos.fws.gov/ecp/species/1626	Year-round
Bell's Sparrow Amphispiza belli https://ecos.fws.gov/ecp/species/9303	Year-round
Black Oystercatcher Haematopus bachmani https://ecos.fws.gov/ecp/species/9591	Year-round
Black Rail Laterallus jamaicensis https://ecos.fws.gov/ecp/species/7717	Breeding
Burrowing Owl Athene cunicularia https://ecos.fws.gov/ecp/species/9737	Year-round
Costa's Hummingbird Calypte costae https://ecos.fws.gov/ecp/species/9470	Year-round
Fox Sparrow Passerella iliaca	Wintering
Lawrence's Goldfinch Carduelis lawrencei https://ecos.fws.gov/ecp/species/9464	Breeding
Least Bittern Ixobrychus exilis https://ecos.fws.gov/ecp/species/6175	Breeding
Lesser Yellowlegs Tringa flavipes https://ecos.fws.gov/ecp/species/9679	Wintering
Lewis's Woodpecker Melanerpes lewis https://ecos.fws.gov/ecp/species/9408	Wintering
Loggerhead Shrike Lanius ludovicianus https://ecos.fws.gov/ecp/species/8833	Year-round
Long-billed Curlew Numenius americanus https://ecos.fws.gov/ecp/species/5511	Wintering
Marbled Godwit Limosa fedoa https://ecos.fws.gov/ecp/species/9481	Wintering
Mountain Plover Charadrius montanus https://ecos.fws.gov/ecp/species/3638	Wintering
Nuttall's Woodpecker Picoides nuttallii https://ecos.fws.gov/ecp/species/9410	Year-round
Oak Titmouse Baeolophus inornatus https://ecos.fws.gov/ecp/species/9656	Year-round
Peregrine Falcon Falco peregrinus https://ecos.fws.gov/ecp/species/8831	Year-round
Rufous Hummingbird selasphorus rufus https://ecos.fws.gov/ecp/species/8002	Migrating

Rufous-crowned Sparrow Aimophila ruficeps https://ecos.fws.gov/ecp/species/9718	Year-round
Short-billed Dowitcher Limnodromus griseus https://ecos.fws.gov/ecp/species/9480	Wintering
Short-eared Owl Asio flammeus https://ecos.fws.gov/ecp/species/9295	Wintering
Snowy Plover Charadrius alexandrinus	Breeding
Swainson's Hawk Buteo swainsoni https://ecos.fws.gov/ecp/species/1098	Breeding
Tricolored Blackbird Agelaius tricolor https://ecos.fws.gov/ecp/species/3910	Year-round
Western Grebe aechmophorus occidentalis https://ecos.fws.gov/ecp/species/6743	Year-round
Yellow-billed Magpie Pica nuttalli https://ecos.fws.gov/ecp/species/9726	Year-round

What does IPaC use to generate the list of migratory bird species potentially occurring in my specified location?

Landbirds:

Migratory birds that are displayed on the IPaC species list are based on ranges in the latest edition of the National Geographic Guide, Birds of North America (6th Edition, 2011 by Jon L. Dunn, and Jonathan Alderfer). Although these ranges are coarse in nature, a number of U.S. Fish and Wildlife Service migratory bird biologists agree that these maps are some of the best range maps to date. These ranges were clipped to a specific Bird Conservation Region (BCR) or USFWS Region/Regions, if it was indicated in the 2008 list of Birds of Conservation Concern (BCC) that a species was a BCC species only in a particular Region/Regions. Additional modifications have been made to some ranges based on more local or refined range information and/or information provided by U.S. Fish and Wildlife Service biologists with species expertise. All migratory birds that show in areas on land in IPaC are those that appear in the 2008 Birds of Conservation Concern report.

Atlantic Seabirds:

Ranges in IPaC for birds off the Atlantic coast are derived from species distribution models developed by the National Oceanic and Atmospheric Association (NOAA) National Centers for Coastal Ocean Science (NCCOS) using the best available seabird survey data for the offshore Atlantic Coastal region to date. NOAANCCOS assisted USFWS in developing seasonal species ranges from their models for specific use in IPaC. Some of these birds are not BCC species but were of interest for inclusion because they may occur in high abundance off the coast at different times throughout the year, which potentially makes them more susceptible to certain types of development and activities taking place in that area. For more refined details about the abundance and richness of bird species within your project area off the Atlantic Coast, see the Northeast Ocean Data Portal. The Portal also offers data and information about other types of taxa that may be helpful in your project review.

About the NOAANCCOS models: the models were developed as part of the NOAANCCOS project: Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf. The models resulting from this project are being used in a number of decision-support/mapping products in order to help guide decision-making on activities off the Atlantic Coast with the goal of reducing impacts to migratory birds. One such product is the Northeast Ocean Data Portal, which can be used to explore details about the relative occurrence and abundance of bird species in a particular area off the Atlantic Coast.

All migratory bird range maps within IPaC are continuously being updated as new and better information becomes available.

Can I get additional information about the levels of occurrence in my project area of specific birds or groups of birds listed in IPaC?

Landbirds:

The Avian Knowledge Network (AKN) provides a tool currently called the "Histogram Tool", which draws from the data within the AKN (latest,survey, point count, citizen science datasets) to create a view of relative abundance of species within a particular location over the course of the year. The results of the tool depict the frequency of detection of a species in survey events, averaged between multiple datasets within AKN in a particular week of the year. You may access the histogram tools through the Migratory Bird Programs AKN Histogram Tools webpage.

The tool is currently available for 4 regions (California, Northeast U.S., Southeast U.S. and Midwest), which encompasses the following 32 states: Alabama, Arkansas, California, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Hampshire, New Jersey, New York, North, Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, Virginia, West Virginia, and Wisconsin.

In the near future, there are plans to expand this tool nationwide within the AKN, and allow the graphs produced to appear with the list of trust resources generated by IPaC, providing you with an additional level of detail about the level of occurrence of the species of particular concern potentially occurring in your project area throughout the course of the year.

Atlantic Seabirds:

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAANCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Facilities

Wildlife refuges

May 15, 2015

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGES AT THIS LOCATION.

Athene cunicularia

burrowing owl

Fish hatcheries

x

Michael Wood

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

3

65 Alta Hill Way

x

Walnut Creek, CA 94595

x

mike@wood-biological.com

Wetlands in the National Wetlands Inventory

(925) 899-1282

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

2 1

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

x

x

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

Contra Costa

The Palmilla Project Owner LLC

Brentwood

73'

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Garmin 60 CSx

x

12'

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

x

N37.94210 W121.70649

Data exclusions

APN 017-170-008

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

2 adults and one juvenile observed demonstrating strong site fidelity to one burrow and three nearby satellite

Data precautions

burrows, and fleeing to 2 escape burrows on a nearby railway embankment.

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

x

recent disking

Residential development and trail construction.

Ruderal field, historically cultivated, currently fallow but disked.

Adjacent to the Marsh Creek Regional Trail

x

x

x

APPENDIX C. EXPLANATION OF RARITY STATUS CODES

EXPLANATION OF RARITY STATUS CODES

ENDANGERED SPECIES ACT (ESA) LISTING CODES

FE = federally listed as Endangered
FT = federally listed as Threatened
FPE = proposed for listing Endangered
FPT = proposed for listing Threatened
FC = federal candidate; former Category 1 candidates
FD/FPD = delisted/proposed for delisting
BCC = Bird Species of Conservation Concern
SC = species of concern; established by NMFS, effective April 15, 2004.

CALIFORNIA ENDANGERED SPECIES ACT (CESA) LISTING CODES

SE = state-listed as Endangered
ST = state-listed as Threatened
SR = state-listed as Rare
SCE = state candidate for listing as Endangered
SCT = state candidate for listing as Threatened
SD/SCD = delisted/State candidate for delisting

GLOBAL (G) AND STATE (S) RANKINGS

G1/S1 = Critically imperiled: at high risk of extinction, extremely rare.
G2/S2 = Imperiled: at high risk of extinction, restricted range, very few populations.
G3/S3 = Vulnerable: moderate risk of extinction, restricted range, few populations.
G4/S4 = Apparently secure: uncommon, not rare, possible long-term declines.
G5/S 5 = Secure: common, widespread, abundant.
T = Rank assigned to a sub-specific taxon.

CALIFORNIA RARE PLANT RANKINGS (CNPS LISTS)

List 1A: Plants presumed extinct in CA, rare or extinct elsewhere.
List 1B: Plants rare, threatened, or endangered in CA and elsewhere.
List 2A: Plants presumed extirpated in CA but common elsewhere.
List 2B: Plants rare, threatened or endangered in CA but common elsewhere.
List 3: Plants for which more information is needed – a review list.
List 4: Plants of limited distribution – a watch list.

CNPS Threat Code Extensions

.1 - Seriously endangered in CA
.2 – Fairly endangered in CA
.3 – Not very endangered in CA

OTHER CODES

ABC: WL - American Bird Conservancy Watch List of Birds of Conservation Concern.

AFS - American Fisheries Society categories of risk for marine, estuarine and diadromous fish stocks. Codes: **E**=endangered; **T**=threatened; **V**=vulnerable

AUD: WL - Audubon: Watch List 2007. Bird species facing population decline and/or threats such as loss of breeding and wintering grounds, or species with limited geographic ranges. **R** – Red List, global conservation concern; **Y** – Yellow List, national conservation concern.

BLM: S - Bureau of Land Mgt: Sensitive. Includes species under review by USFWS or NMFS, species whose numbers are declining so rapidly that federal listing may become necessary, species with small and widely dispersed populations, or species inhabiting refugia or other unique habitats.

CDF: S – CA Dept. of Forestry and Fire Protection: Sensitive. Includes species that warrant special protection during timber operations.

DFW: FP - CDFW: Fully Protected. Species protected under §§3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code.

DFW: SA - CDFW: Special Animal. Species included on the CDFW's lists of special animals.

DFW: SP - CDFW: Special Plant. Species included on the CDFW's lists of special plants.

DFW: SSC - CDFW: California Species of Special Concern.

DFW: WL - CDFW: (Watch List): taxa that don't meet SSC criteria but about which there is concern and additional information is needed to clarify status.

FS: S - USDA Forest Service: Sensitive. Species whose population viability is a concern, as evidenced by significant current or predicted downward trends in numbers or density, or in habitat capability that would reduce a species' existing distribution.

FWS: BCC - U.S. Fish and Wildlife Service: Birds of Conservation Concern. Migratory and non-migratory bird species that represent the USFWS's highest conservation priorities.

FWS: BEPA - U.S. Fish and Wildlife Service: Bald Eagle Protection Act.

FWS: MBTA U.S. Fish and Wildlife Service: International Migratory Bird Treaty Act.

FWS: MNB - U.S. Fish and Wildlife Service: Migratory Nongame Birds of Management Concern. Species of concern in the U.S. due to documented or apparent population declines, small or restricted populations, or dependence on restricted or vulnerable habitats.

MMPA – Marin Mammal Protection Act

NMFS: SC - National Marine Fisheries Service: Species of Concern.

WBWG - Western Bat Working Group. Priority for funding, planning or conservation actions. Codes: **H**=high; **MH**=medium-high; **M**=medium; **LM**=low-medium

Xerces - Xerces Society Red List.
Codes: **C**=critically imperiled; **I**=imperiled; **V**=vulnerable; **D**=data deficient

APPENDIX D. CNDDB FIELD SURVEY FORM

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
1807 13th Street, Suite 202
Sacramento, CA 95811
Fax: (916) 324-0475 email: CNDDB@wildlife.ca.gov

For Office Use Only

Source Code: _____ Quad Code: _____

Elm Code: _____ Occ No.: _____

EO Index: _____ Map Index: _____

Date of Field Work (mm/dd/yyyy): May 15, 2015

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: Athene cunicularia

Common Name: burrowing owl

Species Found? (X) Yes ( ) No _____ If not found, why?

Total No. Individuals: 3 Subsequent Visit? ( ) Yes (X) No

Is this an existing NDDB occurrence? _____ Yes, Occ. # [X] No [ ] Unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Michael Wood
Address: 65 Alta Hill Way
Walnut Creek, CA 94595
E-mail Address: mike@wood-biological.com
Phone: (925) 899-1282

Plant Information

Phenology:

_____ % vegetative _____ % flowering _____ % fruiting

Animal Information

2 # adults 1 # juveniles _____ # larvae _____ # egg masses _____ # unknown

[ ] wintering [ ] breeding [X] nesting [ ] rookery [X] burrow site [ ] lek [ ] other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

County: Contra Costa Landowner / Mgr: The Palmilla Project Owner LLC

Quad Name: Brentwood Elevation: 73'

T____ R____ Sec____, ____1/4 of ____ 1/4, Meridian: H ( ) M ( ) S ( ) Source of Coordinates (GPS, topo. map & type): _____

T____ R____ Sec____, ____1/4 of ____ 1/4, Meridian: H ( ) M ( ) S ( ) GPS Make & Model: Garmin 60 CSx

DATUM: **NAD27** ( ) **NAD83** (X) **WGS84** ( ) Horizontal Accuracy: 12' meters/feet

Coordinate System: UTM Zone 10 ( ) UTM Zone 11 ( ) ***OR*** Geographic (Latitude & Longitude) (X)

Coordinates: N37.94210 W121.70649

APN 017-170-008

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*

Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

2 adults and one juvenile observed demonstrating strong site fidelity to one burrow and three nearby satellite burrows, and fleeing to 2 escape burrows on a nearby railway embankment.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ( ) Excellent ( ) Good (X) Fair ( ) Poor

Immediate AND surrounding land use: _____

Visible disturbances: recent disking

Threats: Residential development and trail construction.

Comments: Ruderal field, historically cultivated, currently fallow but disked.

Adjacent to the Marsh Creek Regional Trail

Determination: *(check one or more, and fill in blanks)*

- [ ] Keyed (cite reference): _____
- [ ] Compared with specimen housed at: _____
- [ ] Compared with photo / drawing in: _____
- [ ] By another person (name): _____
- [ ] Other: _____

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	[ ]	[ ]	[X]
Habitat	[ ]	[ ]	[X]
Diagnostic feature	[ ]	[ ]	[ ]

May we obtain duplicates at our expense? (X) yes ( ) no


Saddle Creek Ct
Lane Oak Ct
Eisenhower Way
Jefferson Dr
Sand Creek Rd
Yardley Pl
Chamomile Ln
Earl Glen
Meyers Ct
Thompsons Dr
Roy Ann Ct
Comice Pkwy
Elberta Pkwy
Anjou Pkwy
Babcock Ct
Muscat Ct
Carmel Pkwy
Sungold Park
Monte Verde Ln
burrowing owl
San Carlos Way
Alta Vista Ct
Via Mar Pl
Marsh Creek
Mission Fields Ln
Laurie Dr
O'Hara Ave
888 ft
© 2015 Google
1939
lat 37.943188° lon -121.707131° elev 70 ft


Carmel Pkwy
Sungold Park
burrowing owl
227 ft
© 2015 Google
1939
lat 37.942335° lon -121.706346° elev 72 ft

Encroachment Permit (EBRPD)

Will be issued to selected contractor – draft included here

East Bay Regional Park District
Encroachment Permit

PERMIT NUMBER: 034E-19-651

PERMIT FEE: Waived

EBRPD FACILITY AFFECTED:	Marsh Creek Regional Trail
PERMITEE NAME: (Company)	Contra Costa County Flood Control and Water Conservation District
ADDRESS:	255 Glacier Drive, Martinez, CA 94553
CONTACT PERSON:	Claudia Gemberling
PHONE:	925.313.2192
EMAIL:	claudia.gemberling@pw.cccounty.us

CONDITIONS:

1. No project work shall commence until all necessary permits and environmental clearances have been obtained. It shall be the sole responsibility of the Permittee to obtain all necessary permits.
2. This permit is valid through 02/01/21.
3. At least one week prior to the commencement of work, the Permittee shall contact: Park Supervisor Carlos Lare-Masters at 510-544-3095 to coordinate access. Work during wet, storm or elevated fire hazard conditions shall be at the discretion of the Park Supervisor.
4. Prior to the commencement of work the Permittee and Permittee's Contractor shall provide and maintain: N Luna 05/15/2019
    a. Commercial General Liability Insurance, occurrence form, with a limit of not less than **$2,000,000 for each occurrence**. If such insurance contains a general aggregate limit, either it shall apply separately to this Encroachment Permit or be no less than **two (2) times the occurrence limit**.
    b. Automobile Liability Insurance, occurrence form, with a limit of not less than **$1,000,000 for each occurrence**. Such occurrence shall include coverage for owned, hired and non-owned automobiles.
    c. Builder's Risk, Special Hazards, or other coverage may be required, as provided in the Supplementary Conditions or other written communication from the East Bay Regional Park District ("Park District").
    d. General Provisions for all insurance:
        i. All insurance shall include the Park District, its elected and appointed officers, employees, and volunteers as additional insureds with respect to this Encroachment Permit and the performance of the Description of Project/Activity on the Encroachment Permit and Permit Application. The coverage shall contain no special limitations on the scope of its protection to the above-designated insureds.
        ii. General liability insurance shall be primary and non-contributory with respect to any insurance or self-insurance programs of the Park District, its boards, commissions, officers, agents, employees, and volunteers.

iii. All insurance shall be evidenced, prior to commencement of services, by properly executed policy endorsements in addition to a certificate of insurance.

iv. In addition to requiring that the Permitee and Permitee's Contractor provide an insurance certificate showing the levels and types of coverage required for the project or contract, the Park District also requires the Permitee and Permitee's Contractor to provide the Park District with a copy of the actual endorsements (a document that modifies the terms of the underlying policy and is issued by the insurance company itself, rather than a broker) to the commercial, general, automobile, and excess liability insurance policies that show the Park District, its boards, commissions, officers, agents, and employees have been named as additional insureds by the insurers.

v. If the Permitee and Permitee's Contractor maintain broader coverage and/or higher limits than the minimums shown above, the District requires and will be entitled to the broader coverage and/or higher limits maintained by the Permittee and Permitee's Contractor.

e. No changes in insurance may be made without the approval of the Park District.

f. Notice of Cancellation. The Park District requires thirty (30) days written notice of cancellation of any insurance required by this Permit. Additionally, the notice statement on the certificate should not include the wording "endeavor to" or "but failure to mail such notice shall impose no obligation or liability upon the company, its agents or representatives" (or similar wording).

5. Permittee and Permittee's Contractor agree to indemnify, hold harmless, defend and protect Park District, its officers, directors, agents, employees, invitees (each of which is an indemnitee) from and against any and all claims, losses, damages, demands, liabilities, suits, costs, expenses (including attorneys' fees), penalties, judgments, or obligations whatsoever for or in connection with injury (including death) or damage to any person or the loss or damage of property to whomsoever belonging or pecuniary or monetary loss resulting from, arising out of, or in any way related to activity conducted by or the omission of Permittee or Permittee's Contractor, including but not limited to Permittee's or Permittee's Contractor's development, construction, occupation, use, operation, maintenance and/or removal of the property, premises, or any facilities or operations thereon, including events occurring on or off the property, premises, or facilities, regardless of how the injury or damage was caused or suffered, unless the injury or damage resulted from the sole negligence or the intentional and willful misconduct of the Park District, its officers, directors, agents or employees.

6. Permittee agrees to restore any park facility disturbed to its pre-construction/project condition. The Park District may elect to make repairs and charge the Permittee the cost thereof. At the Permittee's sole expense, the Permitee shall provide a pre-construction photo and/or video record to document the site conditions before the start of the work.

7. Prior to any grading, trenching, digging, ditching, drilling, augering, tunneling, scraping or any other type of excavation, the Permittee shall provide the Park District with an initial inquiry identification number from Underground Service Alert.

8. Survey monuments shall be protected. Any survey monuments or property corners removed or disturbed shall be replaced at the Permittee's sole expense using survey practices acceptable to the Park District.

9. After both entering and exiting East Bay Regional Park District property, all gates must be closed and locked immediately.

10. All work performed shall be consistent with Encroachment Permit Application dated, 05/14/2019 and all documents submitted to the Park District, attached as Exhibit(s) 1 through 1 and Supplementary Condition(s) S1.1 through S1.5.

11. Permittee and Permittee's Contractor shall implement Best Management Practices (BMPs) consistent with Storm Water Pollution Prevention Plan (SWPPP).

12. Permittee shall implement the following invasive weed BMP's in lieu of submitting an Integrated Pest Management Plan and weed abatement program.
    - ☑ a. Permittee shall use only weed-free straw mulch.
    - ☐ b. Permittee shall wash all project equipment, prior to entering the work area. All vehicles shall be cleaned of dirt and debris per EBRPD Decontamination Protocol 2017 (attached).
    - ☐ c. Permittee shall incorporate top soil salvage into the excavation efforts. The top 2-3 inches of soil will be scraped/excavated and placed in a separate location from all other excavated material. Upon the completion of Construction, the salvaged top soil will be placed back over the excavated area.
13. If hazardous waste is transported, Permittee shall provide the appropriate copy of the Uniform Hazardous Waste Manifest to the Park District.
14. No construction material shall be stored, nor equipment parked on Park District land.
15. No monofilament plastic mesh or line will be used for erosion control.
16. All vehicles traveling on Park District land shall be limited to speeds not to exceed 15 MPH. All vehicles shall yield right of way to park and trail users.
17. Upon completion of the work all debris, scraps, material, etc., shall be removed from the parkland.
18. All work performed within the parkland shall conform to recognized standards of construction.
19. The Permittee shall cease work in the vicinity of any archaeological resources that are revealed and notify the Park District immediately. A qualified archaeologist, retained by the Permittee, will evaluate the situation and make recommendations to the Park District concerning the continuation of the work. All resulting recommendations shall be incorporated in the work at no additional cost to Park District.
20. The Permittee is responsible for meeting all requirements of California Public Resources Code, Sections 4427 and 4431.

SECTION 4427. During any time of the year when burning permits are required in an area pursuant to this article, no person shall use or operate any motor, engine, boiler, stationary equipment, welding equipment, cutting torches, tarpots, or grinding devices from which a spark, fire, or flame may originate, which is located on or near any forest-covered land, brush-covered land, or grass-covered land, without doing both of the following:

(a) First clearing away all flammable material, including snags, from the area around such operation for a distance of 10 feet.

(b) Maintain one serviceable round point shovel with an overall length of not less than forty-six (46) inches and one backpack pump water-type fire extinguisher fully equipped and ready for use at the immediate area during the operation.

This section does not apply to portable power saws and other portable tools powered by a gasoline-fueled internal combustion engine.

SECTION 4431. During any time of the year when burning permits are required in an area pursuant to this article, no person shall use or operate or cause to be operated in the area any portable saw, auger, drill, tamper, or other portable tool powered by a gasoline-fueled internal combustion engine on or near any forest-covered land, brush-covered land, or grass-covered land, within 25 feet of any flammable material, without providing and maintaining at the immediate locations of use or operation of the saw or tool, for firefighting purposes one serviceable round point shovel, with an overall length of not less than 46 inches, or one serviceable fire extinguisher. The Director of Forestry and Fire Protection shall by administrative regulation specify the type and size of fire extinguisher necessary to provide at least minimum

assurance of controlling fire caused by use of portable power tools under various climatic and fuel conditions.

The required fire tools shall at no time be farther from the point of operation of the power saw or tool than 25 feet with unrestricted access for the operator from the point of operation.

21. This Permit allows temporary trail or road closure only where allowed by Park Supervisor.
22. Permittee shall review Conditions of this Permit with all employees and subcontractors prior to any work.
23. The work site shall be enclosed by suitable barricades, fencing, signs and lights, as approved by Park District Representative, to warn and protect public and traffic effectively.
24. Excavations made within the limits of the parklands shall be backfilled or securely covered before leaving the work for the night.
25. Permittee shall provide the Park District with copies of any reports or findings made as a result of this access.
26. Permittee shall provide the Park District with GIS data for any underground or above ground utilities installed or repaired under this Permit. The data shall be provided in the ESRI Shapefile format (.shp) in the following projection:
    a. Projection: CA Stateplane Zone III
    b. Datum: NAD83
    c. Units: Feet
27. Smoking and/or vaping is prohibited on Park District property.
28. This Permit does not authorize tree trimming or tree removal.
29. This Permit can be revoked at any time.
30. Permittee shall notify the Park Supervisor once the project is completed. A site visit may be scheduled to confirm all Conditions of this Encroachment Permit have been completed to Park District Representatives' satisfaction.
31. **A copy of this fully executed Encroachment Permit must be on site and presented to East Bay Regional Park District personnel upon request.**

Subject to the above conditions, A PERMIT IS HEREBY ISSUED FOR:

Access to the Marsh Creek Trail for the Contra Costa County Flood Control and Water Conversation Three Creeks Parkway Restoration Project.

ISSUED BY: _____ **DATE**: _____

Nate Luna, Project Manager

CONDITIONS ACCEPTED BY:_____ **DATE**: _____

Permittee

East Bay Regional Park District Encroachment Permit Supplementary Conditions

PERMIT NUMBER:	034E-19-651

Supplementary Condition(s): S1

Condition(s):

The purpose of the Supplementary Conditions is to amend the Encroachment Permit Conditions to establish certain conditions to the control and execution of the work of this Encroachment Permit.

S1.1 **All work shall be in accordance with the following Documents submitted to the East Bay Regional Park District as part of the Encroachment Permit Application:**

a. Three Creeks Parkway Restoration Project, Civil Set, 100% Set May 8, 2019. Not Attached.

S1.2 **Condition 3. Add the following: Trail Closure Notice:**

a. Permitee shall notify the Park Supervisor thirty (30) days prior to start of the project trail closure. Park Supervisor will notify the Park District Public Affairs department to post the trail closure notice on the Park District website**.**

S1.3 **Condition 23. Add the following:**

a. Permittee shall provide and install CONSTRUCTION NOTICE signs, a minimum size of 30" x 30", ten working days prior to any work on the trail at each intersection of all trail crossings affected by the project. Signs shall state the project name, construction dates and contact phone number for the Contractor. Sign notification wording, size and installation method shall be approved in advance by the Park Supervisor.
b. Detour signage will be clearly displayed.

S1.4 **Add Condition 35: CONSTRUCTION MATERIAL LAYDOWN ("LAYDOWN"):**

a. Permittee may elect to erect temporary fencing around the useable perimeter of Laydown with entrance gates having both Permitee and EBRPD locks installed.
b. Permittee acknowledges that District shall continue to use Laydown for District purposes and District shall require unobstructed access to all District materials stored at laydown.
c. Permittee shall be responsible for protection of all equipment and materials stored at Laydown area. District shall hold no responsibility for loss or damage to Permittee's property from any cause.
d. Any grading and modification to Laydown Area shall be approved in advance by the Park Supervisor.
e. In the event of conflict or inconsistency between Permittee's Contract Documents and Conditions of this Permit, the most stringent shall prevail.
f. Permittee shall comply with all applicable laws and regulations regarding spill prevention and response.
g. If vehicles or equipment need to be serviced onsite, then care shall be taken to prevent spillage onto the ground surface. Vehicles and equipment shall be parked on asphalt over drip pans while being serviced. Care shall be taken to gather and dispose of wastes off-site in a legal manner. Any

spillage onto the ground surface shall be reported and cleaned up. In order to minimize potential pollution from spillage:

i. A stockpile of spill cleanup materials (rags, absorbents, etc.) shall be onsite.
ii. If a spill or leak occurs, contain immediately and be particularly careful to prevent leaks and spills from reaching the gutter, street or storm drain. Do not wash spilled material into gutter, street, storm drain or creek.
iii. Report any hazardous materials spills immediately.

h. Inspect vehicles and equipment for leaks frequently. Use drip pans to catch leaks until repairs are made; repair leaks promptly
i. At the end of Work, Park Supervisor and Permittee shall consult to establish a Contractor's punch list for returning the land to conditions acceptable to the District. Park Supervisor shall have final authority in making determination that land has been returned to an acceptable condition.
j. Upon project completion, if re-vegetation efforts are necessary, the Permittee shall seed the work area and area used for laydown using a seed mix provided by the Park Supervisor.
k. Permittee shall not store bulk hazardous materials in the Laydown. Specifically, flammable liquids, solvents, oils, and other material that typically require secondary containment shall not be permitted to be stored on the ground, in containers, or in tanks located at the Laydown.
l. Permittee shall employ Best Management Practices for all activities at the laydown including, but not limited to, storm water and safety.
m. Permitee may have a vendor install and maintain a portable sanitary facility at Laydown Area and/or Temporary Construction Enclosure ("Laydown" or "TCE") for use by company and subcontractors throughout the duration of construction. Placement of the facility will be at the direction of the Park Supervisor.

S1.5 **Add Condition 36: FOOD SCRAPS AND CONTAINERS:**

All workers will ensure their food scraps, paper wrappers, food containers, cans, bottles, and other trash from the project area are deposited in covered or closed trash containers to avoid attracting predators. The trash containers will be removed from the project area at the end of each workday.

S1.6 EAST BAY REGIONAL PARK DISTRICT FIRE SEASON RESTRICTIONS & PREVENTION

The East Bay Regional Park District restricts activities that can be performed in the Parks during the fire season based on the level of fire danger. EBRPD typically announces the start of the Fire Season in May of each year and usually doesn't end the season until November, depending on weather and fuel conditions. This section applies to work occurring during the declared Fire Season and during any Level I, Level II, or Red Flag conditions. It is the responsibility of the Permitee ("Contractor") to follow these requirements and to contact the District Representative for clarification.

01.1 General Fire Season Requirements

.1 No smoking or vaping: Smoking or vaping is not allowed on the East Bay Regional Park District property.

.2 Emergency Notification: Contractors shall maintain at least one working cell phone, radio, or satellite phone capable of communicating in case of an emergency, such as medical or fire incident. In an emergency, call 911 then notify the EBRPD Communications Center by calling 510-881-1833.

.3 Vehicle use: Contractor must remain on improved roads when driving between work sites. No cross country or off-road driving is permitted. All vehicles must be parked on paved or dirt improved areas near the work site to minimize igniting grass.

.4 Spark Arresters: Spark arresters affixed to the exhaust system of engines or vehicles shall not be mounted in a manner as to allow flames or heat from exhaust system to ignite any flammable material.

.5 Fueling Equipment: When fueling equipment, allow it to cool in an area where there is no flammable vegetation that can be ignited by the hot exhaust, preferably in a dirt or paved area.

.6 Equipment Requirements mobile/on-site: Provide at least one serviceable round-point shovel with an overall length of not less than 46 inches and one five-gallon water fire extinguisher or backpack pump. Unless otherwise noted, The Contractor shall provide and maintain a fire pump with a minimum of 350 gallons of water and a 1-inch hose line in the immediate work area. The hose line must be a minimum of 50 feet in length with an adjustable combination nozzle that can provide a fog pattern and straight stream capability of 50 gallons per minute.

.7 Fire Department monitoring: An EBRPD Fire Department representative may be on-site for initial start of work and may make periodic inspections.

.8 Applicable laws and Regulations: California Public Resource Code Sections 4442 & 4443 Spark arrester & muffler requirements; 4427 Clearance & equipment requirements. California Health and Safety Code Sections 13001 Causing Fire; 13005 Use of Hydrocarbon Engine without Exhaust Spark Arrester; 13007 & 13009 liability.

01.2 The District will determine when weather and wildland fuel conditions increase fire danger to Very High (Level 1) or Extreme (Level 2) in certain Fire Danger Rating Areas (FDRA's) on a daily basis. The District's Fire Danger Rating Areas Map and Park locations can be found on the District's website at: https://www.ebparks.org/about/fire/fire_danger_and_weather_information.htm. The Contractor shall check the District's website or call the recorded phone message at 510-544-3059 to check if there are any Level 1, Level 2 Restrictions or park closures resulting from a Red Flag Warning issued by the National Weather Service (see section 01.18). Information is updated by 6:00 pm for the following day.

.1 EBRPD Fire Season Level 1 Restrictions, Very High Fire Danger

a. Vehicles are restricted to driving only on designated roadways; no cross-country or off-road driving is permitted.

b. No use of combustion powered equipment (e.g. mowers in rough areas, weed eaters, chain saws, welders and generators) outside of irrigated areas, designated campgrounds or developed recreational areas is allowed unless the Extra Protection Fire Safety Measures listed below (Section 01.19) are implemented.

c. Maintenance of irrigated areas and road grading are permitted.

d. Prepare and check all fire equipment for readiness.

.2 EBRPD Fire Season Level 2 Restrictions, Extreme Fire Danger

a. Vehicles are restricted to driving only on designated roadways; no cross-country or off-road driving is permitted.

b. No use of combustion powered equipment (e.g. mowers in rough areas, weed eaters, chain saws, welders and generators) outside of irrigated areas, designated campgrounds or developed recreational areas is allowed unless the Extra Protection Fire Safety Measures listed below (Section 01.19) are implemented.

c. Prepare and check all fire equipment daily for readiness.

01.3 National Weather Service Red Flag Warning: NO work within or adjacent to grass, bush or forest covered areas shall occur within 24 hours of a predicted red flag event as determined by the National Weather Service (https://www.weather.gov).

.1 Red Flag Warning and Reduced Suppression Resources

The Park will be closed, and no Contractor access will be allowed, During Red Flag conditions when the Park District Fire Department has determined that adequate fire suppression resources are not available. Park closures will be noted on the Park District website and recorded message as noted in section B above.

.2 A representative of the East Bay Regional Park District Fire Department or other fire jurisdiction having authority may direct work to stop at any time.

01.4 Extra Protection Fire Safety Measures: The Contractor shall submit an Extra Protection Fire Safety Measures Plan clearly describing how the measures below will be implemented. No **welding, cutting, grading, grinding, and mowing (WCGGM)**, or other activity potentially creating a fire hazard, is allowed until this plan has been approved by the Park District. The following is intended as a guideline for the operational procedures to be used by Contractors when performing **WCGGM,** within or adjacent to grass, bush or forest covered areas at any time during the fire season in the Park District:

.1 Weather Sampling: Prior to commencement of WCGGM, a weather sampling shall be conducted at the work site utilizing a weather device such as "Kestrel," capable of monitoring temperature, wind and relative humidity (RH).

.2 Additional weather samplings: will be conducted every two (2) hours thereafter until completion of the operation.

a. Temperature: If the ambient temperature reaches 80 degrees Fahrenheit at any time during the operation, weather sampling must be taken hourly.

b. In the event that the following readings are noted, **WCGGM OPERATIONS WILL CEASE IMMEDIATELY:**

When the ambient air temperature reaches 80 degrees Fahrenheit or above

AND EITHER

The relative humidity is at or below 30 percent

OR

Sustained wind speeds reach 10 mph or higher

c. Note that adjusting to an earlier scheduled work time may be necessary to avoid the worsening afternoon fire conditions.

d. The Contractor shall record the Relative Humidity (RH), ambient temperature and wind speed into a daily log.

.3 Active fire monitoring during welding, cutting or grinding operations: Contractor is required to provide active fire monitoring, which minimally consists of a non-divertible fire pump with a minimum of 350 gallons of water and a 1-inch hose line in the immediate work area. The hose line must be a minimum of 50 feet in length with an adjustable combination nozzle that can provide a fog pattern and straight stream capability of 50 gallons per minute.

.4 Wetting area during cutting, grinding or welding: Contractor must adequately wet the work area with water utilizing a water truck or equivalent portable water source to eliminate potential fire ignition. Contractor must also monitor the area for drying conditions, apply additional water as necessary and monitor work area for any signs of fire ignition following WCGGM operations.

.5 Fire clearance during cutting, grinding or welding: Contractor must provide a minimum of 20 feet of fire clearance around each welding area with a fire proof barrier and/or clearing down to bare soil.

.6 Active fire watch during mowing or grading operations: Contractor shall provide active fire patrol following behind the mower or ground engaging equipment (grader, dozer, etc.), which minimally consists of a non-divertible pickup truck equipped with a fire pump with a minimum of 350 gallons of water with a 1-inch hose line, staffed with at least one person in the pickup truck. The hose line must be a minimum of 100 feet in length with an

adjustable combination nozzle that can provide a fog pattern and straight stream capability of 50 gallons per minute.

EAST BAY REGIONAL PARK DISTRICT
ENCROACHMENT PERMIT APPLICATION

DATE: 05/14/19

PERMIT NO. EBRPD USE

PERMIT FEE EBRPD USE

EBRPD FACILITY AFFECTED Marsh Creek Regional Trail

DESCRIPTION

Three Creeks Parkway Restoration Project. Restoration and channel widening along 4,000 linear feet of Marsh Creek between Dainty Avenue and the Union Pacific Rail Road. Construction will require the closure and detouring of the Marsh Creek Regional Trail. See attached for more detail.

ATTACHMENTS/ENCLOSURES

Attached project description and construction documents.

INSURANCE CARRIER

Will be provided by the selected construction contractor.

ESTIMATED START DATE 4/15/20

ESTIMATED COMPLETION 2/1/21

OTHER AGENCY PERMITS REQUIRED

CDFW Lake and Streambed Alteration Agreement; RWQCB (Region 5) 401 Certification; US Army Corps 404; East Contra Costa County HCP Planning Survey Report; City of Brentwood Grading/Building

APPLICANT NAME

Contra Costa County Flood Control and Water Conservation District

ADDRESS

255 Glacier Drive, Martinez, CA 94553

CONTACT PERSON Claudia Gemberling

PHONE 925.313.2192

EMAIL claudia.gemberling@pw.cccounty.u

FAX

East Bay Regional Park District

2950 Peralta Oaks Court
PO Box 5381
Oakland, CA 94605
510 544-2562
510 569-1432, fax

Project Description

The Three Creeks Parkway Restoration project is a multi-benefit flood control and creek restoration project. It proposes to improve flood conveyance capacity and restore ecological function along an approximately 4,000 linear feet section of Marsh Creek located in Brentwood, California by widening the channel with a floodplain bench and planting with native vegetation. Modifications to the Marsh Creek Regional Trail include minor re-alignment near the at-grade crossing at Central Boulevard, an underpass beneath the Central Boulevard bridge, and a possible pedestrian bridge to link to future City of Brentwood trails on the west side of Marsh Creek.

Construction is anticipated to begin late spring of 2018. Excavation and grading activities would occur during the dry season (June to October) with plant restoration occurring afterwards (November to December). Construction will require the closure and detouring of the Marsh Creek Regional Trail.

Channel Widening

The main function of expanding the channel is to create enough conveyance capacity to allow for the planting of woody riparian vegetation (trees) while also safely conveying large flood flows. The project would increase the cross-sectional area of the stream channel by excavating 26,000 cubic yards (10,500 for upper, 2,500 for middle, and 13,000 for lower reach,) of earth along approximately 4,000 linear feet of both banks of Marsh Creek to create new floodplain.

Revegetation Activities

Currently, no trees exist within either the low-flow channel or the larger flood control channel. Some trees do currently exist on the non-creek side of the Marsh Creek Regional Trail in the upper reach. Where possible, these will be protected and retained. Following the construction of channel widening activities, depending on location, the project area would be planted with wetland plants, grasses, scrub, and trees. Riparian trees would be planted on the upper banks and along the creek side and would include valley oak, sycamore, live oak, box elder, buckeye, cottonwood, and willow. Slopes and banks would be planted with grassland and scrub species, which would include creeping wild rye, California brome, purple needlegrass, dense-flowered lupine, mugwort, common fiddleneck, elegant clarkia, and California poppy. Areas of the floodplain would be planted with seasonal wetland species that will include, but not be limited to, creek clover, Baltic rush, and deer sedge. Planting would occur in November and December and would be accomplished by hand tools and power augers. Specific ways and means will be determined by the contractor.

Trail Extension below Central Boulevard Bridge

The Marsh Creek Regional Trail currently crosses the busy Central Blvd. at grade. The project will extend the trail beneath the Central Blvd. bridge (Photo 1). This trail extension will consist of concrete below the OHWM (to be closed when flooded) (approximately 170 LF, 0.04 AC, 32 CY of concrete and 42 CY of base course). This section of trail will be maintained by the City of Brentwood. An excavator, steamroller, front-end loader, and road paving machine may be used. Equipment to be used will be determined by the contactor.

Photo 1: Area beneath Central Blvd. Bridge where trail extension will go. Note bridge footings that will require riprap protection.

Pedestrian Bridge

Contingent on available funding, the project may install a pedestrian bridge across Marsh Creek just upstream of the confluence with Sand Creek (Sheet L-3.4). The bridge will be 10 feet wide and approximately 100 feet long. If funding is not available, the project may install the abutments or nothing at all.

Proposed Detour Route

The figure below shows the proposed detour route around the project site while the trail is closed. The project team evaluated several options and this is the City of Brentwood's preferred route.

The detour utilizes an existing Class I trail along the UPRR, a bike lane along Central Boulevard, a bike lane along Griffith Avenue and a residential street with sidewalks along Dainty Avenue. In the event that the upper reach of the project Central Boulevard to Dainty Lane is not under construction while the lower reach (Central Boulevard to UPRR) is, the detour will leave the Marsh Creek Regional Trail at Central Boulevard (show in orange in the figure below).

The project will take several months to complete and this will be the primary route around the construction zone. Actual closure dates will be determined by the selected contractor and their staging and phasing needs.

Figure 1: Proposed detour during trail closures.

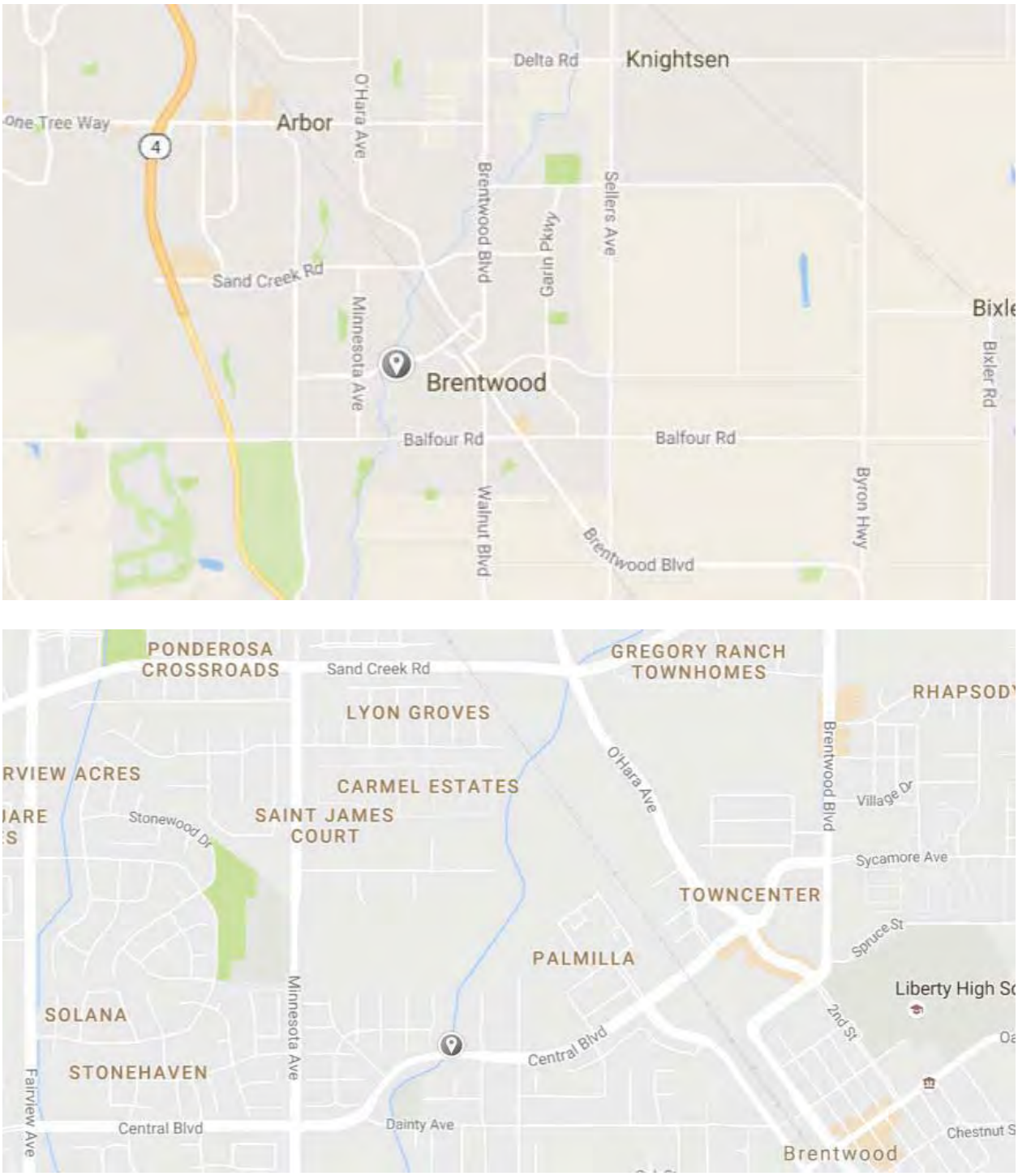

Figure 2. Project Location

Combined Grading/Building Permit (City of Brentwood)

Will be issued to selected contractor

Certificate of Consistency (DSC)

Certification of Consistency

Certification ID: C20201

Step 1 - Agency Profile

A. GOVERNMENT AGENCY: ☐ **State Agency** ☑ **Local Agency**

Government Agency:	Contra Costa County Flood Control and Water Conservation District
Primary Contact:	Tim Jensen
Address:	255 Glacier Drive
City, State, Zip:	Martinez, CA 94553
Telephone/Fax:	(925) 313-2192 /
E-mail Address:	claudia.gemberling@pw.cccounty.us

B. GOVERNMENT AGENCY ROLE IN COVERED ACTION: ☑ **Will Carry Out** ☑ **Will Approve** ☑ **Will Fund**

Step 2 - Covered Action Profile

IT IS RECOMMENDED THAT YOU ENGAGE IN EARLY CONSULTATION WITH DSC STAFF AND/OR COMPLETE THE COVERED ACTION CHECKLIST TO DETERMINE IF THE PLAN, PROGRAM OR PROJECT IS CONSIDERED A COVERED ACTION AND TO IDENTIFY RELEVANT REGULATORY POLICIES

A. COVERED ACTION PROFILE: ☐ **Plan** ☐ **Program** ☑ **Project**

Title: Three Creeks Parkway Restoration Project

B. PROPONENT CARRYING OUT COVERED ACTION (If different than State or Local Agency):

Proponent Name: Tim Jensen, Contra Costa County Flood Control and

Address: 255 Glacier Drive

City, State, Zip: Martinez, CA 94553

C. At least 10 Days Prior to the Submission of a Certification of Consistency to the Delta Stewardship Council, Administrative Procedures Governing Appeals section 3 states: agencies whose actions are **not** subject to open meeting laws (Bagley-Keene Open Meeting Act [Gov. Code sec 11120 et seq.] or the Brown Act [Gov. Code sec 54950 et seq.]) with regard to its certification, must post their draft certification on their website and in their office for public review and comment, and mail to all persons requesting notice. A state or local public agency that is subject to open meeting laws with regard to its certification is encouraged to take those actions.

If applicable, did you comply with this requirement? ☐ YES ☑ NO

CCC BOS Agenda_9-27-16 (CEQA IS-MND).pdf, CCC BOS Agenda_3-27-18 (Addendum 1).pdf, CCC BOS Agenda_11-12-19 (Addendum 2).pdf

D. COVERED ACTION SUMMARY: (Project Description from approved CEQA document may be used here)

The Three Creeks Parkway Restoration project is a multi-benefit flood control and creek restoration project proposed by the Contra Costa County Flood Control District and Water Conservation District ("District" or "CCCFCD") and American Rivers, a non-profit organization that protects wild rivers and restores damaged rivers. The project proposes to improve flood conveyance capacity and restore native vegetation along an approximately 4,000 linear feet section of Marsh Creek located in Brentwood and included the improvement of flood conveyance capacity by widening the channel with a floodplain and floodplain benches and restoration of native vegetation of the creek banks and floodplain. When implementation is complete, the project site will include up to 1.0 acres of frequently inundated floodplain (seasonal wetland), 1.87 acres of woody riparian vegetation, and 1.87 acres of grasslands and native scrub. The project will also enhance habitat and recreation within the watershed.

The CEQA Initial Study/Mitigated Negative Declaration (IS/MND) was adopted by the Contra Costa County Board of Supervisors on September 27, 2016, but was not approved at that time. Subsequent to the adoption of the 2016 IS/MND, American Rivers and the District proposed a few additions that were evaluated in Addendum 1: (1) incorporation of an existing water quality basin adjacent to the lower reach of Marsh Creek and improvements to the adjacent City of Brentwood Sungold Park, (2) use of an adjoining parcel in the middle reach as a staging area and to place excavated materials, (3) construction of a clear-span pedestrian bridge, and (4) use of creek crossings during construction. These proposed additions included a total of approximately 16 acres. The County Board of Supervisors approved Addendum 1 on March 27, 2018. Addendum 2 identified and analyzed potential impacts of project components that were not specifically identified and described in the project description of the IS/MND and Addendum 1 as well as incorporation of additional project features: (1) abutments for the proposed pedestrian bridge identified in Addendum #1 and spur trail from the Marsh Creek Regional Trail to the proposed pedestrian bridge, (2) incorporation of a City of Brentwood-owned parcel for a future pocket park ("Dainty Triangle Park"), and (3) permanent property acquisitions for the project features identified in the IS/MND and Addendums 1 and 2. CEQA IS-MND+Addendums 1 and 2+MMRP.pdf

E. STATUS IN THE CEQA PROCESS: NOD has been filed

F. STATE CLEARINGHOUSE NUMBER: (if applicable) 2016082008

G. COVERED ACTION ESTIMATED TIME LINE:

ANTICIPATED START DATE: (If available) 4/16/2020 ANTICIPATED END DATE: (If available) 2/28/2021

H. COVERED ACTION TOTAL ESTIMATED PROJECT COST: $7,428,371.00

I. IF A CERTIFICATION OF CONSISTENCY FOR THIS COVERED ACTION WAS PREVIOUSLY SUBMITTED, LIST DSC REFERENCE NUMBER ASSIGNED TO THAT CERTIFICATION FORM:

J. SUPPORTING DOCUMENTS:

Step 3 - Consistency with the Delta Plan

DELTA PLAN CHAPTER 2

G P1 / 23 CCR SECTION 5002 – **Detailed Findings to Establish Consistency with the Delta Plan.**

In General: (23 CCR SECTION 5002 (a), (b), (1)) This regulatory policy specifies what must be addressed in a certification of consistency filed by a State or local public agency with regard to any covered action.

This regulatory policy only applies after a "proposed action" has been determined by a State or local public agency to be a covered action because it is covered by one or more of the regulatory policies listed under Delta Plan Chapters 3, 4, 5, and 7 of this form. Inconsistency with this policy may be the basis for an appeal.

Covered actions, in order to be consistent with the Delta Plan, must be consistent with this regulatory policy and with each of the regulatory policies listed under Delta Plan Chapters 3, 4, 5 and 7 of this form implicated by the covered action. The Delta Stewardship Council acknowledges that in some cases, based upon the nature of the covered action, full consistency with all relevant regulatory policies may not be feasible. In those cases, the agency that files the certification of consistency may nevertheless determine that the covered action is consistent with the Delta Plan because, on whole, that action is consistent with the coequal goals. That determination must include a clear identification of areas where consistency with relevant regulatory policies is not feasible, an explanation of the reasons why it is not feasible, and an explanation of how the covered action nevertheless, on whole, is consistent with the coequal goals. That determination is subject to review by the Delta Stewardship Council on appeal;

Specific requirements of this regulatory policy:

a. **Mitigation Measures** (23 CCR SECTION 5002 (b), (2))
G P1(b)(2)/Cal. Code Regs., tit. 23, § 5002, subd. (b)(2) provides that covered actions not exempt from CEQA, must include all applicable feasible mitigation measures adopted and incorporated into the Delta Plan as amended April 26, 2018, (unless the measure(s) are within the exclusive jurisdiction of an agency other than the agency that files the certification of consistency), or substitute mitigation measures that the agency that files the certification of consistency finds are equally or more effective.

Is the covered action consistent with this portion of the regulatory policy?

☑ YES ☐ **NO** ☐ **N/A**

Answer Justification: Mitigation measures for this project is explicitly described in its Final Initial Study/Mitigated Negative Declaration (IS/MND), Mitigation, Monitoring and Reporting Program (MMRP) and attached to this certification application (Section 3b_MM_MMRP). The project has been specifically developed to be consistent with the Delta Plan as it is a multi-benefit project that will reduce flood risk associated with a changing climate, improve Delta water quality, restore denuded stream-side habitat, and enhance the Delta as a place. In addition, the Delta Plan's 2013 MMRP has been reviewed and cross-referenced with the project's MMRP and the two documents are generally consistent across resources areas. Further, this project directly supports the Delta Plan's co-equal goals as well as the following policies: General Policy 1 (G P1): Detailed Findings to Establish Consistency with the Delta Plan - this has been done through review of the MMRP, use of best available science in future restoration and flood management planning, and development of an adaptive management framework. A comparison of the Delta Plan's 2018 MMRP and the this project's MMRP is attached (Section3b_MM_Comparison) and shows the mitigation measures are equal or more effective than the mitigation measures for the Delta Plan's 2018 MMRP.MMRP.pdf, G_P1_MMRP Comparison to Delta Plan.pdf

b. **Best Available Science (**23 CCR SECTION 5002 (b), (3))
The covered action documents use of best available science as relevant to the purpose and nature of the project.

Is the covered action consistent with this portion of the regulatory policy? Appendix 1A is referenced in this regulatory policy.

☑ YES ☐ **NO** ☐ **N/A**

Answer Justification: The project has been specifically developed to be consistent with the Delta Plan as the project will reduce flood associated with a changing climate, improve Delta water quality, restore denuded stream-side habitat, and enhance the Delta as a place. In addition, the Delta Plan's 2013 MMRP has been reviewed and cross-referenced with this project's MMRP and both MMRPs are generally consistent across resource areas. In addition, this project directly supports the Delta Plan's co-equal goals as well as the following policies: General Policy 1 (GP 1): Detailed Findings to Establish Consistency with the Delta Plan - this has been done through review of the MMRP, use of best available science in future restoration and flood management planning, and development of an adaptive management framework. The attached Adaptive Management and Maintenance Plan framework (AMMP) for this project contains best available science and an extensive review of all monitoring data for the Marsh Creek watershed and associated scientific literature. The project has used best available science by incorporating restoration science into the project, including designing a floodplain and restoration project in the functional framework developed for DRERIP (Opperman 2008) and new informaton published since then. Best available science from publishing literature and relevant gray literature was used in developing current project designs and monitoring methods. In addition, the project for water quality is building off of 15 years of water quality monitoring at seven to ten sites, where sampling has been conducted in partnership with the EPA and Central Valley RWQCB as detailed in a Quality Assurance Project Plan (QAPP) that requires EPA and CVRWQCB review technical field sampling and data management methods. Other aspects of the project's AMMP were developed to guide specific monitoring and includes 40 citations of published scientific literature and direct data sources. AMMP.pdf

c. **Adaptive Management** (23 CCR SECTION 5002 (b), (4))
The covered action involves ecosystem restoration or water management, and includes adequate provisions, appropriate to its scope, tc assure continued implementation of adaptive management

Is the covered action consistent with this portion of the regulatory policy? Appendix 1B is referenced in this regulatory policy.

☑ YES ☐ **NO** ☐ **N/A**

Answer Justification: The project has been specifically developed to be consistent with the Delta Plan as the project will reduce flood associated with a changing climate, improve Delta water quality, restore denuded stream-side habitat, and enhance the Delta as a place. In addition, the Delta Plan's 2013 MMRP has been reviewed and cross-referenced with this project's MMRP and both MMRPs are generally consistent across resource areas. In addition, this project directly supports the Delta Plan's co-equal goals as well as the following policies: General Policy 1 (GP 1): Detailed Findings to Establish Consistency with the Delta Plan - this has been done through review of the MMRP, use of best available science in future restoration and flood management planning, and development of an adaptive management framework. The attached Adaptive Management and Maintenance Plan framework (AMMP) for this project provides clear guidance and specific examples. The particular metrics, thresholds and response actions listed in Table 3 of the AMMP will be implemented. AMMP.pdf

DELTA PLAN CHAPTER 3

WR P1 / 23 CCR SECTION 5003 - Reduce Reliance on the Delta through Improved Regional Water Self-Reliance

Is the covered action consistent with this regulatory policy?

☐ YES ☐ **NO** ☑ **N/A**

Answer Justification: This is not applicable because this project will improve fresh water quality entering the Delta at Big Break but is not expected to impact human local water use, transfer, or export in or from the Delta.

WR P2 / 23 CCR SECTION 5004 - Transparency in Water Contracting

Is the covered action consistent with this regulatory policy? Appendix 2A and Appendix 2B are referenced in this regulatory policy.

☐ YES ☐ **NO** ☑ **N/A**

Answer Justification: This is not applicable because the covered action does not involve entering into or amending water supply or water transfer contracts subject to DWR Guideline 03-09 and/or 03-10 (each dated July 3, 2003).

DELTA PLAN CHAPTER 4

Conservation Measure: (23 CCR SECTION 5002 (c))

A conservation measure proposed to be implemented pursuant to a natural community conservation plan or a habitat conservation plan that was:
(1) Developed by a local government in the Delta; and
(2) Approved and permitted by the California Department of Fish and Wildlife prior to May 16, 2013
is deemed to be consistent with the regulatory policies listed under Delta Plan Chapter 4 of this form (i.e. sections 5005 through 5009) if the certification of consistency filed with regard to the conservation measure includes a statement confirming the nature of the conservation measure from the California Department of Fish and Wildlife.

Is a statement confirming the nature of the conservation measure from the California Department of Fish and Wildlife available?

☐ YES ☐ **NO** ☑ **N/A**

Answer Justification: This is not applicable because the project does not include a conservation measure proposed to be implemented pursuant to a natural community conservation plan or a habitat conservation plan.

ER P1 / 23 CCR SECTION 5005 - Delta Flow Objectives

Is the covered action consistent with this regulatory policy?

☐ YES ☐ **NO** ☑ **N/A**

Answer Justification: This is not applicable because this project is not expected to significantly affect flow in the Delta since it involves setting back channel banks and planting native riparian vegetation. Local hydrological impacts specific to Marsh Creek (not the greater Delta) might affect flow timing by accommodating high flows in wider floodplains of this relatively small tributary to the Delta. No significant effects on water flow in the Delta will occur through this project other than local improvements to water quality.

ER P2 / 23 CCR SECTION 5006 - Restore Habitats at Appropriate Elevations

Is the covered action consistent with this regulatory policy? Appendix 3 and Appendix 4 are referenced in this regulatory policy.

☑ YES ☐ **NO** ☐ **N/A**

Answer Justification: The project is located within the Marsh Creek Watershed in eastern Contra Costa County approximately 40 miles northeast of San Francisco, and includes the cities of Brentwood and Oakley, and unincorporated areas. Marsh Creek Watershed is an important link between the Delta and the Diablo Range. According to the Map provided in Appendix 4 linked above, the project area is within the Legal Delta and on land classified as 'City Sphere of Influence' and 'Uplands' (>15 feet) (see attachment Section3_DPChap4C_Elevation_Map). Thus, the project area is not in the lowest priority areas according to the Delta Conservation Strategy, which are those areas that are most subsided and expected to become deep water habitat with sea level rise of approximately 55 inches in the coming 50 to 100 yrs. Rather, the project area is in one of the highest priority areas for restoration, which includes floodplains that can be seasonally inundated. These areas are valued because they can support a diversity of habitats, and therefore wildlife, and important ecological processes, such as contributing organic material to the foodweb (Final ERP Conservation Strategy 2013, p. 40). The project will help forward Strategy 3.2 in the Delta Conservation Strategy: "Establish migratory corridors for fish, birds, and other animals along selected Delta river channels" as it will restore native riparian habitat and create wider floodplains along Lower Marsh Creek, and as such is expected to extend and improve the quality of critical migratory corridors for fish, birds and other wildlife, helping rebuild an important link between the open natural lands of Mount Diablo's west slope and Big Break in the Delta. The goal of the project is to restore aquatic habitats including seasonally inundated floodplain and seasonal wetlands, and terrestrial habitats including riparian areas and perennial grasslands, all of which are appropriate for upland area elevations and will create a mosaic of different upland habitat types. The project will help meet all Stage 2 Actions for Upland Areas including acquiring land and easement interests from willing sellers, and working with willing landowners, to restore seasonal floodplain areas to accommodate future sea level rise (Action 1), and restoring large- scale riparian vegetation along waterways (Action 5). Lower Marsh Creek was historically a floodplain with a braided meandering channel - basically creating a large sediment deposition zone in the alluvial valley. Flood control actions and channel hardening have modified these sections into transport and erosion (bank and bed) zones - a major change to process domain. The project will restore a small bit of this historic function by creating inset floodplain at the proper relative elevations for frequent flooding (0.5 to 2 yr return intervals) and creating low sloping banks to allow for stage resilient restoration - again this is all about re-creating proper relative elevations for habitats to form and be sustained. The Biological Resources section of the attached IS/MND (Final_IS/MND) uses best available science to describe existing conditions within the project area: "existing conditions within the project area primarily consists of anthropomorphic habitats, ruderal, nonnative annual grassland and freshwater marsh habitats. There is little to no woody riparian vegetation along the stream corridors and wetland vegetation in some areas is limited to a narrow 1-3-foot wide fringe along the low flow channel. Though the project area is generally degraded it does provide habitat for several common and special- status species including, but not limited to, western pond turtle, occasional adult Chinook salmon, western burrowing owl and periodic foraging California river otters" and provides a brief description of habitat types within the project area. The elevation of the Project site ranges from approximately 57-80 feet above sea level. Figure 3 - Typical Creek Cross-sections Showing 50' and 75' HCP/NCCP Stream Setbacks from Top of Bank, Existing Conditions (Top) and Example of Widened Channel with Riparian Vegetation (Bottom) is on page 6 of the attached IS/MND (Final_ISMND) and shows the restoration of seasonally inundated floodplain and the elevation of a typical widened channel. Final_ISMND.pdf.
Section3_DPChap4C_Elevation_Map.pdf

ER P3 / 23 CCR SECTION 5007 - Protect Opportunities to Restore Habitat

Is the covered action consistent with this regulatory policy? Appendix 4 and Appendix 5 are referenced in this regulatory policy.

☐ YES ☐ **NO** ☑ **N/A**

Answer Justification: This section is not applicable because the project is not within any of the Priority Habitat Restoration Areas depicted in Appendix 5. Priority Habitat Restoration Areas are large areas within which specific sites may be identified for habitat restoration abased on assessments of land use and other issues addressed through further feasiblity analysis.

ER P4 / 23 CCR SECTION 5008 - Expand Floodplains and Riparian Habitats in Levee Projects

Is the covered action consistent with this regulatory policy? Appendix 8 is referenced in this regulatory policy.

☐ YES ☐ **NO** ☑ **N/A**

Answer Justification: This is not applicable because the project does not include levees or any levee projects.

ER P5 / 23 CCR SECTION 5009 - Avoid Introductions of and Habitat for Invasive Nonnative Species

Is the covered action consistent with this regulatory policy?

☑ YES ☐ **NO** ☐ **N/A**

Answer Justification: The Project will implement BMPs during construction. The AMMP includes methods for monitoring sites for invasive species with trigger thresholds for action remove invasive species (see Table 3 of the AMMP). The Project restoration component was designed to include native species conducive to the Project area. The Project area will be monitored and maintained for six years or until success criteria has been met as provided in the AMMP. AMMP.pdf

DELTA PLAN CHAPTER 5

DP P1 / 23 CCR SECTION 5010 - Locate New Urban Development Wisely

Is the covered action consistent with this regulatory policy? Appendix 6 and Appendix 7 are referenced in this regulatory policy.

☐ YES ☐ **NO** ☑ **N/A**

Answer Justification: This is not applicable because the project does not involve new residential, commercial, or industrial development.

DP P2 / 23 CCR SECTION 5011 - Respect Local Land Use When Siting Water or Flood Facilities or Restoring Habitats

Is the covered action consistent with this regulatory policy?

☑ YES ☐ **NO** ☐ **N/A**

Answer Justification: The Project has been developed in collaboration with the Contra Costa County Flood Control District, owner of the creek within the Project area, and the City of Brentwood. In addition, letters of support were received (attached) and public and agency comments were considered during the CEQA process. DP_P2_LOS_Assemblymember Jim Frazier.pdf, DP_P2_LOS_CCC District III Supervisor Diane Burgis.pdf, DP_P2_LOS_CCC Flood Control District.pdf, DP_P2_LOS_CCRCD.pdf, DP_P2_LOS_City of Brentwood.pdf, DP_P2_LOS_City of Oakley.pdf, DP_P2_LOS_Earth Team.pdf, DP_P2_LOS_EBRPD.pdf, DP_P2_LOS_ECC Habitat Conservancy.pdf, DP_P2_LOS_FOMCW.pdf, DP_P2_LOS_Senator Steven M. Glazer.pdf

DELTA PLAN CHAPTER 7

RR P1 - Prioritization of State Investments in Delta Levees and Risk Reduction

Is the covered action consistent with this regulatory policy?

☐ YES ☐ **NO** ☑ **N/A**

Answer Justification: This is not applicable because this project does not involve discretionary State investments for levees for levee failure. It also does not involve developing emergency response and recovery to flooding other than providing flood accommodation along a regulated floodway. Nothing in this project will negatively effect State investments in Delta levees and Delta Risk Reduction. This project should reduce flooding in the Brentwood area.

RR P2 - Require Flood Protection for Residential Development in Rural Areas.

Is the covered action consistent with this regulatory policy? Appendix 7 is referenced in this regulatory policy.

☐ YES ☐ **NO** ☑ **N/A**

Answer Justification: This is not applicable because the project does not involve new residential, commercial, or industrial development.

RR P3 - Protect Floodways

Is the covered action consistent with this regulatory policy?

☐ YES ☐ **NO** ☑ **N/A**

Answer Justification:	This is not applicable because this policy covers a proposed action that would encroach in a floodway that is not either a designated floodway or regulated stream. Marsh Creek is a designated floodway zone on the FEMA portal (http://msc.fema.gov/portal/home) and on page ##, the IS/MND states "FEMA online floodmaps reviewed in XXXX #### illustrate that the project area is within a Regulatory Floodway designated as Zone AE, an area subject to inundation with a 1.0 percent annual-chance of flood (FEMA ###)." This project will not negatively affect floodways as the project would reduce flooding to the surrounding area and increase cross sectional area of existing floodways.

RR P4 - Floodplain Protection

Is the covered action consistent with this regulatory policy?

☐ YES ☐ **NO** ☑ **N/A**

Answer Justification:	This is not applicable because the project does not encroach onto any of the floodplain areas: (1) the Yolo Bypass within the Delta, (2) the Consumnes River--Mokelumne River Confluence, as defined by the North Delta Flood Control and Ecosystem Restoration Project (McCormack-Williamson), or as modified in the future by the California Department of Water Resources 2010), and (3) the Lower San Joaquin River Floodplain Bypass Area, located on the Lower San Joaquin River upstream of Stockton immediately southwest of Paradise Cut on lands both upstram and downstream of the Interstate 5 crossing. This area is described in the Lower San Joaquin River Floodplain Bypass Proposal, submitted to the California Department of Water Resources by the partnership of the South Delta Water Agency, the River Islands Development Company, Reclamation District 2062, San Joaquin Conservation District, American Rivers, the American Lands Conservancy, and the Natural Resources Defense Council, March 2011.