

**Meeting of the Central Valley Flood Protection Board
August 28, 2015**

Staff Report

**California Department of Transportation
State Route 99 San Joaquin River Vegetation Mitigation, Fresno County**

1.0 – REQUESTED ITEM

Consider Central Valley Flood Protection Board (Board) approval to plant vegetation required for environmental mitigation associated with recently constructed bridges on State Route (SR) 99 (Attachment A) over the San Joaquin River by Draft Permit No. 18714-1 (Attachment B).

2.0 – APPLICANT

California Department of Transportation (Caltrans)

3.0 – PROJECT LOCATION

The project is located near the intersection of Avenue 7 and SR 99 where SR 99 crosses the San Joaquin River, northwest of the city of Fresno (Attachment A).

4.0 – PROJECT DESCRIPTION

Board permit 18714 issued in March of 2012 approved construction of two new bridges over the San Joaquin River. Caltrans now proposes to plant vegetation (trees) required to mitigate for the environmental impacts due to prior bridge construction.

5.0 – AUTHORITY OF THE BOARD

California Water Code § 8534, 8590 – 8610.5, and 8700 – 8710

California Code of Regulations Title 23 (Title 23)

- § 6, Need for a Permit
- § 108, Existing Encroachments
- § 112, Streams Regulated and Nonpermissible Work Periods

- § 131, Vegetation

6.0 – AGENCY COMMENTS AND ENDORSEMENTS

The comments and endorsements associated with the project are as follows:

- The U.S. Army Corps of Engineers (USACE) Sacramento District non-fed letter was received on August 12, 2015, and indicated that the USACE District Engineer has no comments or recommendations regarding flood control because the proposed work does not affect a federally constructed project. The letter has been incorporated into the permit as Exhibit A.
- Caltrans District 06 Maintenance endorsed the project without conditions on April 3, 2015 (Attachment C).

7.0 – PROJECT ANALYSIS

7.1 – Project Summary

The proposed project is for planting riparian trees to meet the mitigation requirements of the parent project Permit 18714 BD. A total of 0.92 acres of riparian habitat containing 118 trees near the river were impacted by the previous bridge construction. In order to mitigate for the loss of riparian habitat, Caltrans now proposes replacement planting with 374 trees consisting of Black Willow, Fremont Cottonwood, Oregon Ash, Western Sycamore, and White Alder. These trees will be planted at five (5) separate areas adjacent to the constructed bridges (Attachment D).

7.2 – Hydraulic Summary

The trees will be planted within the floodway channel adjacent to the bridges and away from bridge abutment and the banks. The applicant previously accounted for the proposed mitigation plantings within the channel in the HEC-RAS model used to analyze the channel during bridge design. The analysis assumed that the channel would be restored to its original state, including vegetation, after construction of the bridge was completed, by using the same composite Manning's roughness coefficient for the channel. A review of the proposed changes to the planting plan, with assumed survival rate of the plantings found no appreciable increase in the overall roughness of the channel at the locations modeled.

Therefore, the proposed mitigation planting changes proposed will not change the hydraulic calculations. Based on Board staff's review of this analysis, the proposed project is expected to result in no significant adverse hydraulic impacts to the San

Joaquin River channel or floodway (Attachment E).

7.3 – Geotechnical Summary

The proposed project is located within the floodway adjacent to the river channel and away from channel banks, and is therefore expected to cause no adverse geotechnical impacts to the San Joaquin River channel or floodway.

Planting will be completed in compliance with Draft Permit No. 18714-1 and all Title 23 technical standards.

8.0 – CEQA ANALYSIS

Board staff has prepared the following California Environmental Quality Act (CEQA) analysis:

The Board, as a responsible agency under CEQA, has reviewed Initial Study/Mitigated Negative Declaration (IS/MND) (SCH Number: 2009061047, April 2010) and Mitigation Measures for the Island Park Six-Lane Project prepared by the lead agency, Caltrans District 6. The Board previously considered and adopted responsible agency findings on March 23, 2012, and filed a Notice of Determination with the State Clearinghouse on April 13, 2012. The Board staff has determined that the Board's prior CEQA findings regarding the project are still valid and that this activity was covered in the original project description. The Board staff have also determined that the proposed riparian habitat is within the scope of the previously certified IS/MND, that no new environmental effects could occur, and that no new mitigation measures are required as a result of this habitat creation. Therefore no new environmental documents are required pursuant to CEQA Guidelines section 15162.

The documents and other materials which constitute the record of the Board's proceedings in this matter are in the custody of Leslie Gallagher, Acting Executive Officer, Central Valley Flood Protection Board, 3310 El Camino Ave., Rm. 151, Sacramento, California 95821.

9.0 – CALIFORNIA WATER CODE § 8610.5 CONSIDERATIONS

- Evidence that the Board admits into its record from any party, federal, State or local public agency, or nongovernmental organization with expertise in flood or flood plain management:

The Board has considered all the evidence presented in this matter, including the application for Permit No. 18714-1, and all supporting hydraulic, geotechnical, and other technical documentation provided by Caltrans.

- The best available science that related to the scientific issues presented by the Executive Officer, legal counsel, the Department of Water Resources or other parties that raise credible scientific issues.

In making its findings, the Board has used the best available science relating to the issues presented by all parties.

- Effects of the decision on the facilities of the State Plan of Flood Control, and consistency of the proposed project with the Central Valley Flood Protection Plan as adopted by Board Resolution 2012-25 on June 29, 2012:

This project is expected to result in no adverse impacts on facilities of the State Plan of Flood Control, and is consistent with the adopted 2012 Central Valley Flood Protection Plan and current Title 23 standards because the proposed project is predicted to result in no increase in water surface elevation, substantial increase in channel velocities, or adverse geotechnical impacts to the system.

- Effects of reasonable projected future events, including, but not limited to, changes in hydrology, climate, and development within the applicable watershed:

Caltrans has determined that they do not anticipate any future projects that would impact the bridge structure and channel based on research of plans and other projects in the area.

10.0 – STAFF RECOMMENDATION

Board staff recommends that the Board:

- approve Encroachment Permit No. 18714-1 (in substantially the form provided); and,
- direct the Executive Officer to take the necessary actions to execute the permit and file a Notice of Determination pursuant to CEQA with the State Clearinghouse.

11.0 – LIST OF ATTACHMENTS

A – Project Vicinity and Location Maps

B – Draft Permit No. 18714-1

Exhibit A – USACE 408 Decision Letter

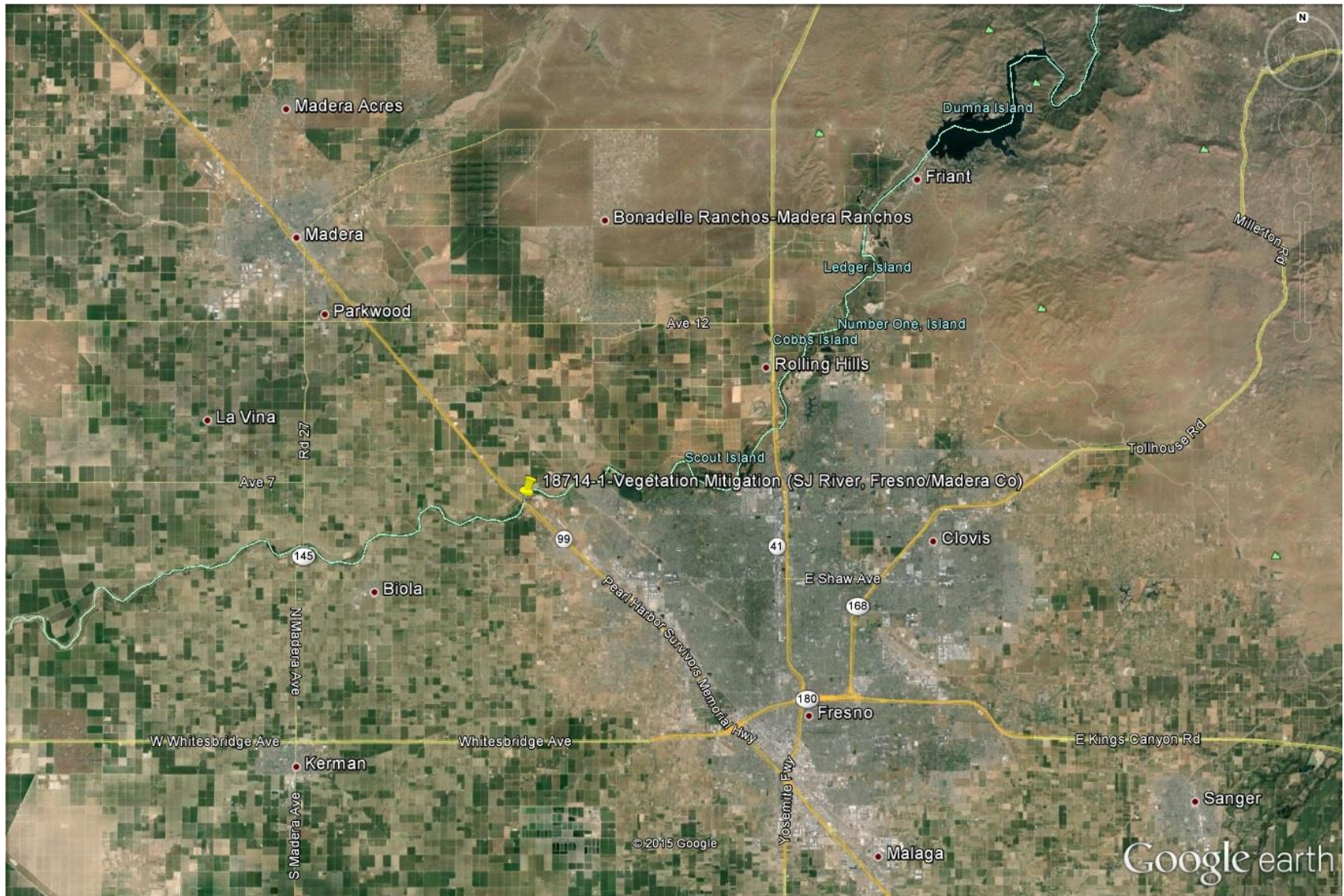
C – Caltrans District 06 Maintenance Endorsement

D – Planting Plan Drawings

E – Caltrans April 9, 2015 Letter

Prepared by:	Sungho Lee, Engineer, Water Resources, Projects Section
Document Review:	Ilene Wellman-Barbree, Senior Engineer, Projects Section
	James Herota, Senior Environmental Scientist (Specialist)
	Eric Butler, PE, Projects and Environmental Branch Chief
	Len Marino, PE, Chief Engineer
Legal Review	Nicole Rinke, Deputy Attorney General

ATTACHMENT A – VICINITY AND LOCATION MAPS



ATTACHMENT A – VICINITY AND LOCATION MAPS



DRAFT

STATE OF CALIFORNIA
THE RESOURCES AGENCY
THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 18714-1 BD**This Permit is issued to:**

California Department of Transportation (Caltrans)
2015 East Shields Avenue, Suite 100
Fresno, California 93726

Planting vegetation required for environmental mitigation due to the construction of two bridges on State Route 99 over the San Joaquin River previously constructed under Board Permit 18714-BD.

The project is located near the intersection of Avenue 7 and SR 99 where SR 99 crosses the San Joaquin River, northwest of the city of Fresno.

(Section 31, T12S, R19E, MDB&M, San Joaquin River, Fresno/Madera County).

NOTE: Special Conditions have been incorporated herein which may place limitations on and/or require modification of your proposed project as described above.

(SEAL)

Dated: _____

Executive Officer**GENERAL CONDITIONS:**

ONE: This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

TWO: Only work described in the subject application is authorized hereby.

THREE: This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

FOUR: The approved work shall be accomplished under the direction and supervision of the State Department of Water Resources, and the permittee shall conform to all requirements of the Department and The Central Valley Flood Protection Board.

FIVE: Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to

Page 1 of 6

change any conditions in this permit as may be consistent with current flood control standards and policies of The Central Valley Flood Protection Board.

SIX: This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15 days' notice.

SEVEN: It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

EIGHT: This permit does not establish any precedent with respect to any other application received by The Central Valley Flood Protection Board.

NINE: The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

TEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

ELEVEN: The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interfere with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

TWELVE: Should any of the work not conform to the conditions of this permit, the permittee, upon order of The Central Valley Flood Protection Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

SPECIAL CONDITIONS FOR PERMIT NO. 18714-1 BD

THIRTEEN: All work completed under this permit, as directed by the general and special conditions herein, shall be accomplished to ensure that the work is not injurious to adopted plans of flood control, regulated streams, and designated floodways under Central Valley Flood Protection Board (Board) jurisdiction, as defined in California Code of Regulations, Title 23. This permit only applies to the completion of work in the project description located within, or adjacent to and having bearing on Board jurisdiction, and which directly or indirectly affects the Board's jurisdiction. This special condition shall apply to all subsequent conditions herein.

LIABILITY AND INDEMNIFICATION

FOURTEEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the Board, the Department of Water Resources (DWR), the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, arising out of failure on the permittee's part to perform the obligations under this permit, the permittee shall defend and shall hold each of them harmless from each claim. This condition shall supersede condition TEN.

FIFTEEN: The permittee shall defend, indemnify, and hold the Board and the State of California, including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages related to the Board's approval of this permit, including but not limited to claims filed pursuant to the California Environmental Quality Act. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

SIXTEEN: The permittee is responsible for all liability associated with construction, operation, and maintenance of the permitted facilities and shall defend, indemnify, and hold the Board and the State of California; including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages arising from the project undertaken pursuant to this permit, all to the extent allowed by law. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

SEVENTEEN: The Board, and the DWR shall not be held liable for damages to the permitted encroachment(s) resulting from releases of water from reservoirs, flood fight, operation, maintenance, inspection, or emergency repair.

EIGHTEEN: If the permittee does not comply with the conditions of the permit and enforcement by the Board is required, the permittee shall be responsible for bearing all costs associated with the enforcement action, including reasonable attorney's fees. Permittee acknowledges that State law allows the imposition of fines in enforcement matters.

AGENCY CONDITIONS

NINETEEN: A letter from the U.S. Army Corps of Engineers (USACE) District Engineer dated August 12, 2015, is attached to this permit as Exhibit A in reference to the project.

TWENTY: The permittee agrees to incur all costs for compliance with local, State, and Federal permitting. If any conditions issued by other agencies conflict with any of the conditions of this permit, then the permittee shall resolve conflicts between any of the terms and conditions that agencies might impose under the laws and regulations it administers and enforces.

PRE-CONSTRUCTION

TWENTY-ONE: The permittee shall contact the Board by telephone at (916) 574-0609, and submit the enclosed postcard to schedule a preconstruction conference. Failure to do so at least 20 working days prior to start of work may result in delay of the project.

TWENTY-TWO: The permittee shall provide construction supervision and inspection services acceptable to the Board.

TWENTY-THREE: Prior to commencement of work, the permittee shall create a photo record, including associated descriptions of project conditions. The photo record shall be submitted to the Board within thirty (30) calendar days of beginning the project.

TWENTY-FOUR: Thirty (30) calendar days prior to the start of any construction activities within the floodway or within the existing levee prism, the permittee shall submit two sets of detailed plans and specifications and supporting geotechnical and / or hydraulic impact analyses to the Board's Chief Engineer, for any and all temporary, in channel, or levee prism work that may have an impact during the flood season from November 1 through July 15. The Board may request additional information as

needed and will seek comment from the USACE and / or the local maintaining agency when necessary. The Board will provide written notification to the permittee if the review period is likely to exceed thirty (30) working days.

CONSTRUCTION

TWENTY-FIVE: All work approved by this permit shall be in accordance with the submitted drawings and specifications except as modified by special permit conditions herein. No work, other than that approved by this permit, shall be done in the project area without prior approval of the Board.

TWENTY-SIX: All addenda and contract change orders made to the approved plans and / or specifications by the permittee after the Board approval of this permit shall be submitted to the Board's Chief Engineer for review and approval prior to incorporation into the permitted project. The submittal shall include all supplemental plans, specifications, and necessary supporting geotechnical, hydrology and hydraulics, or other technical analyses. The Board shall acknowledge receipt of the addendum or change submittal in writing within ten (10) working days of receipt, and shall work with the permittee to review and respond to the request as quickly as possible. Time is of the essence. The Board may request additional information as needed and seek comment from the USACE and / or local maintaining agencies when necessary. The Board will provide written notification to the permittee if the review period is likely to exceed forty five (45) calendar days. Upon approval of submitted documents the permit shall be revised, if needed, prior to construction related to the proposed changes.

TWENTY-SEVEN: No construction work of any kind shall be done during the flood season from November 1st to July 15th without prior approval of the Board.

TWENTY-EIGHT: All debris generated by this project shall be disposed outside of the San Joaquin River floodway.

TWENTY-NINE: No material stockpiles, temporary buildings, or equipment shall remain in the floodway during the flood season from November 1 to July 15.

THIRTY: Except with respect to the activities expressly allowed under this permit, the work area shall be restored to the condition that existed prior to start of work.

VEGETATION / ENVIRONMENTAL MITIGATION

THIRTY-ONE: The permittee will be responsible for securing any necessary permits incidental to habitat manipulation and restoration work completed in the flood control project, and will provide any biological surveying, monitoring, and reporting needed to satisfy those permits.

THIRTY-TWO: Areas where plantings are lost to erosion may be replanted to the level of plantings in the approved project plans and specifications.

THIRTY-THREE: Any temporary irrigation systems shall be removed from the floodway upon completion of the establishment period.

THIRTY-FOUR: Cleared trees and brush (or pruning therefrom) shall be completely burned or removed from the floodway, and downed trees or brush shall not remain in the floodway during the flood season from November 1st to July 15th.

THIRTY-FIVE: After each period of high water, debris that accumulates at the site shall be removed from the floodway when reasonably determined as necessary by the Board.

THIRTY-SIX: In the event that scour of channel bed injurious to the San Joaquin River floodway occurs as a result of the project, the permittee shall repair the eroded area and propose measures, to be approved by the Board, to prevent further erosion.

THIRTY-SEVEN: If any feature of the project adversely impacts the successful execution, functioning, maintenance, or operation of the San Joaquin River Floodway or facilities of the San Joaquin River Flood Control Project, the permittee must either remove the feature, or mitigate for the adverse impact of the feature at the permittee's expense after approval of the proposed mitigations by the Board. If the permittee does not comply, the Board may modify or remove the feature at the permittee's expense.

THIRTY-EIGHT: Upon completion of the project, the permittee shall submit a final signed and stamped planting plan to the Board's Chief Engineer.

POST-CONSTRUCTION

THIRTY-NINE: The permittee shall be responsible for repair of any damages to the San Joaquin River floodway due to construction, operation, or maintenance of the proposed project.

FORTY: Within 120 days of completion of the project, the permittee shall submit to the Board as-built drawings and a certification report, stamped and signed by a professional engineer registered in the State of California, certifying the work was performed and inspected in accordance with Board permit conditions and submitted drawings and specifications.

OPERATIONS AND MAINTENANCE

FORTY-ONE: The permittee shall be responsible for repair of any damages to the levee, channel, banks, floodway, or any other flood control facilities due to construction, operation, or maintenance of the proposed project.

FORTY-TWO: The permittee shall maintain the permitted encroachment(s) within the utilized area in the manner required and as requested by the authorized representative of the Board, DWR, or any other agency responsible for maintenance.

FORTY-THREE: If the planted trees are damaged to the extent that it may impair the channel or floodway capacity, they shall be removed prior to the next flood season.

FORTY-FOUR: If the permitted planting results in any adverse hydraulic impact or scouring the

permittee shall provide appropriate mitigation measures subject to review and approval of the Board.

FORTY-FIVE: All debris that may accumulate around the planted trees within San Joaquin River shall be completely removed from the floodway following each flood season.

FORTY-SIX: The permitted encroachment(s) shall not interfere with the flood conveyance capability of the San Joaquin River. If the permitted encroachment(s) are determined by any agency responsible for operation or maintenance of the San Joaquin River floodway and upstream or downstream facilities of the State Plan of Flood Control to interfere, the permittee shall be required, at the permittee's cost and expense, to modify or remove the permitted encroachment(s) under direction of the Board. If the permittee does not comply, the Board may modify or remove the encroachment(s) at the permittee's expense.

FORTY-SEVEN: At the request of either the permittee or the Board the permittee and the Board shall conduct joint inspections of the project and the San Joaquin River floodway after significant flood events or flood seasons to assess the integrity and operation of the project, and to assess and respond to any adverse impacts on the floodway or adjacent properties.

PROJECT ABANDONMENT, CHANGE IN PLAN OF FLOOD CONTROL

FORTY-EIGHT: If the project works, or any portion thereof, is to be abandoned in the future, the permittee shall abandon the project under direction of the Board at the permittee's cost and expense.

FORTY-NINE: The permittee may be required, at the permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted project works if removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with implementation of the Central Valley Flood Protection Plan or other future flood control plan or project, or if damaged by any cause. If the permittee does not comply, the Board may perform this work at the permittee's expense.

END OF CONDITIONS



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

REPLY TO
ATTENTION OF

Flood Protection and Navigation Section (18714-1)

AUG 11 2015

Ms. Leslie M. Gallagher, Acting Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

We have reviewed permit application number 18714-1 submitted by Caltrans. This project includes planting vegetation required for environmental mitigation due to the construction of two new bridges over the San Joaquin River. The project is located near the intersection of Avenue 7 and Highway 99 in Fresno, at 36.848611°N 119.932500°W NAD83, San Joaquin County, CA.

The District Engineer has no comments or recommendations regarding flood control because the proposed work does not affect a federally constructed project.

A Section 10 and/or Section 404 permit (SPK-2011-1172) has been issued for this work.

A copy of this letter is being furnished to Mr. Don Rasmussen, Chief, Flood Project Integrity and Inspection Branch, 3310 El Camino Avenue, Suite 200, Sacramento, CA 95821.

Sincerely,

A handwritten signature in blue ink, reading "Ryan Larson", is positioned below the word "Sincerely,".

Ryan Larson, P.E.
Chief, Flood Protection and Navigation Section

State of California

DEPARTMENT OF WATER RESOURCES
CENTRAL VALLEY FLOOD PROTECTION BOARD

California Natural Resources Agency

APPLICATION FOR A CENTRAL VALLEY FLOOD PROTECTION BOARD
ENCROACHMENT PERMITApplication No. 18714-1
(For Office Use Only)

1. Description of proposed work being specific to include all items that will be covered under the issued permit.

This permit application is for the planting of vegetation required for the environmental mitigation due to the construction of two new bridges over the San Joaquin River on Route 99 in Fresno and Madera Counties. The parent project permit 18714 BD was approved March 26, 2012.

2. Project

Location: Fresno /Madera County line County, in Section N/A
 Township: _____ (N) _____ (E)
 (S), Range: _____ (W), M. D. B. & M.
 Latitude: 36 50' 55" Longitude: 119 55' 57"
 Stream: San Joaquin River, Levee: _____ Designated Floodway: Yes
 APN: _____

3. Caltrans-Tom Fisher of 2015 E. Shields Ave, Suite 100 Attn: Tom Fisher
 Name of Applicant / Land Owner Address
Fresno CA 93726 559-243-3498
 City State Zip Code Telephone Number
Tom_Fisher@dot.ca.gov
 E-mail

4. Tom Fisher of Caltrans
 Name of Applicant's Representative Company
Fresno CA 93619 559-392-5680
 City State Zip Code Telephone Number
Tom_Fisher@dot.ca.gov
 E-mail

5. Endorsement of the proposed project from the Local Maintaining Agency (LMA):

We, the Trustees of Caltrans District 06 Maintenance approve this plan, subject to the following conditions:
 Name of LMA

☐ Conditions listed on back of this form ☐ Conditions Attached ☒ No Conditions

In D. Fisher 4/3/15
 Trustee Date Trustee Date

Trustee Date Trustee Date

NOTE:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. YOU MUST NOT PLANT NEW PLANTS FURTHER THAN 10' FROM THE ORDINARY HIGH WATER MARK.






Michael W. Mills
LICENSED LANDSCAPE ARCHITECT

CCO



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Fre, Mad	99	26.7/R31.6, R0.0/R1.6		
Michael W. Mills LICENSED LANDSCAPE ARCHITECT					
01/06/12 PLANS APPROVAL DATE					
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SHOWN COPIES OF THIS PLAN SHEET.					

PLANT LIST AND PLANTING SPECIFICATIONS

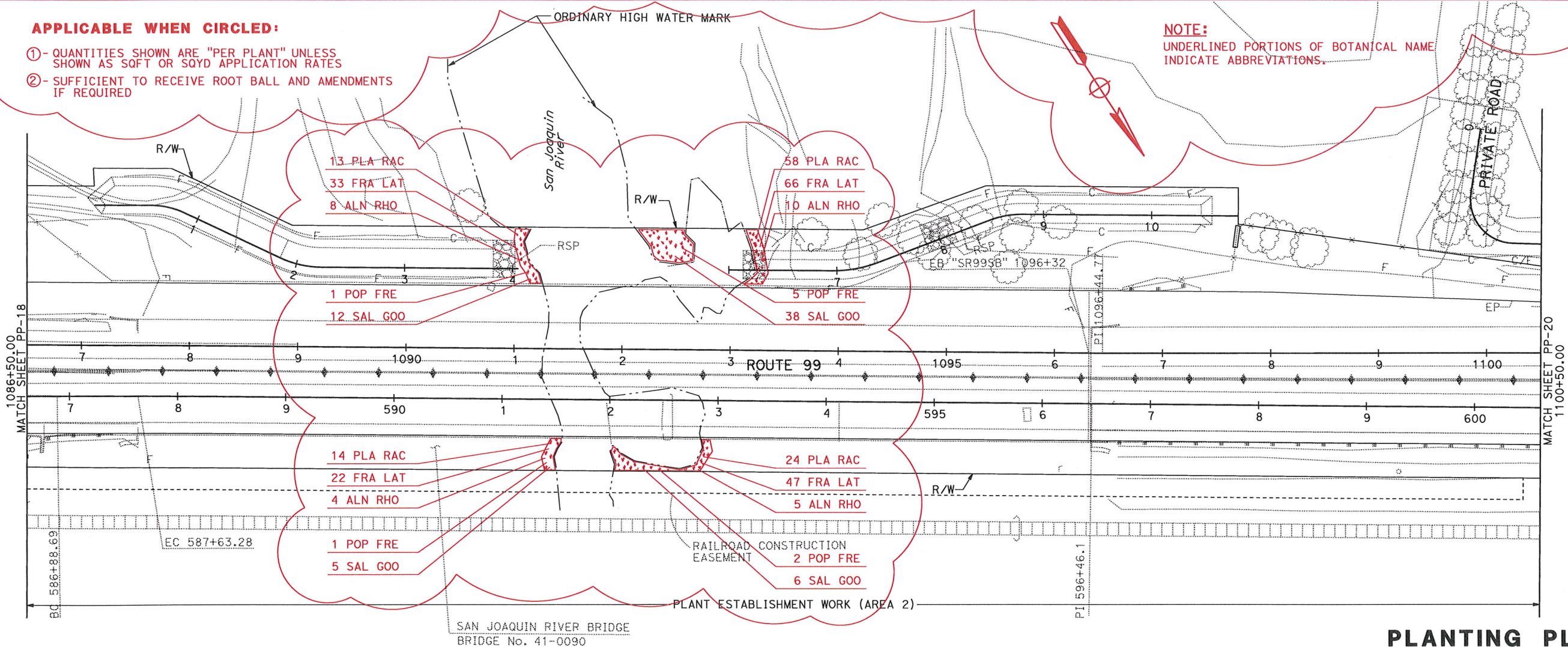
PLANT GROUP	PLANT No.	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY EACH	HOLE SIZE (INCH)		BASIN TYPE	IRON SULFATE	SOIL AMEND	COMMERCIAL FERTILIZER ①		BASIN MULCH (CF) ①	STAKING	PLANTING LIMITS						REMARKS
							Dia	DEPTH				ETW	Pvmt			FENCE	WALL	PAVED DITCH	EARTH DITCH	ON CENTER (ft)		
																					PLANTING	
I	1		ALNUS RHOMBIFOLIA	WHITE ALDER	14" DEEP POT	27	②	②	I	-	-	1 Pk+	-	0.5	-	-	-	-	-	-	-	MAY BE SPACED AS CLOSE AS 2' ON CENTER
	2		FRAXINUS LATIFOLIA	OREGON ASH	14" DEEP POT	168	②	②	I	-	-	1 Pk+	-	0.5	-	-	-	-	-	-	-	MAY BE SPACED AS CLOSE AS 2' ON CENTER
	3		PLATANUS RACEMOSA	WESTERN SYCAMORE	14" DEEP POT	109	②	②	I	-	-	1 Pk+	-	0.5	-	-	-	-	-	-	-	MAY BE SPACED AS CLOSE AS 2' ON CENTER
	4		POPULUS FREMONTII	FREMONT'S COTTONWOOD	14" DEEP POT	9	②	②	I	-	-	1 Pk+	-	0.5	-	-	-	-	-	-	-	MAY BE SPACED AS CLOSE AS 2' ON CENTER
	5		SALIX GOODINGII	GOODING'S BLACK WILLOW	14" DEEP POT	61	②	②	I	-	-	1 Pk+	-	0.5	-	-	-	-	-	-	-	MAY BE SPACED AS CLOSE AS 2' ON CENTER

APPLICABLE WHEN CIRCLED:

- ①- QUANTITIES SHOWN ARE "PER PLANT" UNLESS SHOWN AS SQFT OR SQYD APPLICATION RATES
- ②- SUFFICIENT TO RECEIVE ROOT BALL AND AMENDMENTS IF REQUIRED

NOTE:

UNDERLINED PORTIONS OF BOTANICAL NAME INDICATE ABBREVIATIONS.



PLANTING PLAN

SCALE: 1"=50' PP-19

APPROVED FOR PLANTING WORK ONLY

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

Rugger A. Pagan
LICENSED LANDSCAPE ARCHITECT

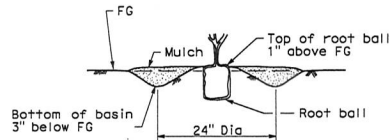
May 1, 2006
PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

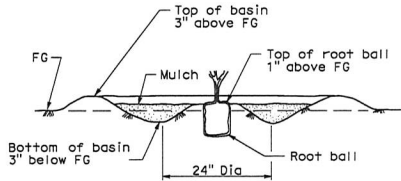
To get to the Caltrans web site, go to: <http://www.dts.ca.gov>

02-28-2007
10-11-2005
DATE OF CALIFORNIA

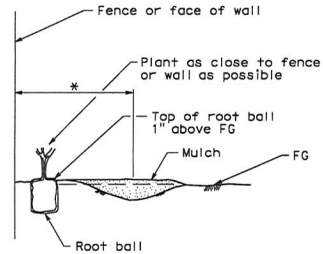
2006 STANDARD PLAN H3



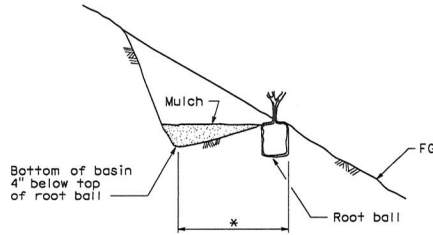
SECTION
(Flat Area)



SECTION
(Flat Area)

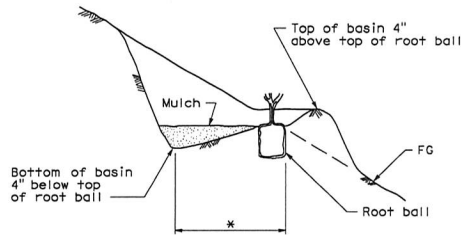


SECTION
(Flat Area)



SECTION
(Slope Area)

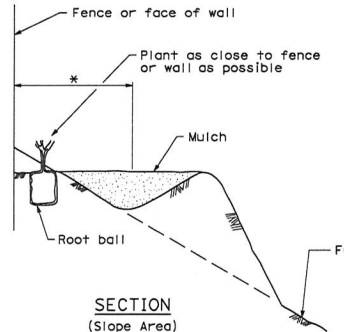
BASIN TYPE I



SECTION
(Slope Area)

BASIN TYPE II

* Basin area equivalent to 24" Dia



SECTION
(Slope Area)

BASIN TYPE III

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**PLANTING AND IRRIGATION
DETAILS**
NO SCALE

H3

April 9, 2015

Central Valley Flood Protection Board:

Re: Permit Application #18714, San Joaquin River

In regards to the State Route 99 bridge over the San Joaquin River in Madera County (Bridge No. 41 0090), the proposed mitigation planting within the channel has previously been accounted for in the HEC-RAS model used for the analysis of the channel. The analysis assumed that the channel would be restored to its original state, including vegetation, after construction of the bridge was completed, by using the same composite Manning's roughness coefficient for the channel. A review of the proposed changes to the planting plan, with assumed survival rate of the plantings found no appreciable increase in the overall roughness of the channel at the locations modeled. Therefore, the proposed mitigation planting changes proposed will not change the hydraulic calculations.

Anthony Nedwick, P.E.
Structure Hydraulics & Hydrology
Department of Transportation
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