Meeting of the Central Valley Flood Protection Board
January 25, 2018

Permit Staff Report

County of Merced
Burchell Avenue Bridge Replacement Project, Merced County

1.0 – ITEM

Consider approval of Permit No. 19217 (Attachment A).

2.0 – APPLICANT

County of Merced (County).

3.0 – PROJECT LOCATION

The project is located approximately 0.35 miles south from the intersection of Santa Fe Avenue and South Burchell Avenue, between the towns of Planada and Le Grand. (Mariposa Creek, Merced County, Attachment B)

4.0 – PROJECT DESCRIPTION

The County proposes to:

- Remove the existing Burchell Avenue Bridge that crosses Mariposa Creek (also known as Duck Slough) and construct a new five span cast-in-place prestressed concrete slab bridge;
- To widen and raise the bridge approach roads;
- To reconstruct driveway and channel access roads to match the new roadway profile;
- To place rock slope protection at the bridge abutments;
- To relocate an existing underground telephone utility line, two existing utility poles, and associated overhead utilities, and;
- To remove and replace existing steel gate posts, a drainage culvert, and barbed wire fences.

5.0 – AUTHORITY OF THE BOARD

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

California Code of Regulations, Title 23, Division 1 (Title 23):

- § 6, Need for a Permit
- § 13.3, Consent Calendar
- § 108, Existing Encroachments
- § 112, Streams Regulated and Nonpermissible Work Periods
- § 126, Fences and Gates
- § 128, Bridges
- § 130, Patrol Roads and Access Ramps

6.0 – PROJECT ANALYSIS

Mariposa Creek is listed as a regulated stream in Title 23, Section 112, Table 8.1. There are no project levees at the bridge location, but there are project levees just upstream from the bridge at the confluence of Owens Creek Diverting Canal with Mariposa Creek. A permit for the existing Burchell Avenue Bridge was not found; however, the bridge is shown on the Location Map that is part of the Operations and Maintenance Manual for Channels and Levees of the Merced County Stream Group, which is a part of the State Plan of Flood Control (SPFC).

The proposed work consists of:

1. The existing bridge will be removed, and a new five span cast-in-place prestressed concrete slab bridge will be constructed at the same location (Attachment C). Temporary dams and culverts will be constructed to divert water during construction. During construction, the anticipated summer flow for May 1st through October 31st is approximately 160 cubic feet per second (cfs). The temporary culverts will be functioning at 60% capacity at this flow.

2. Bridge approach roads will be widened and raised. Access roads to adjacent farm property and a levee maintenance road will be reconstructed to match the new roadway profile. Plans show the access roads will be surfaced with 6 inches of class 2 aggregate base and will be sloped at a minimum of two-percent.

3. Rock slope protection will be placed along the north and south sloping abutments. Plans show the rock will be placed at a thickness of 24 inches, six inches more than required by Title 23.

4. An existing underground telephone utility line and two existing power poles and lines will be relocated. The underground utility belongs to AT&T and the poles belong to PG&E. Contacts for the utilities are provided on the plans.

5. A drainage culvert, barbed wire fencing and steel gate posts for an adjacent access road will be removed and replaced. The replacement drainage culvert outlet to the channel will have a concrete outfall section and rock slope protection.

The proposed project meets all applicable Title 23 standards.

6.1 – Hydraulic Analysis

The U.S. Army Corps of Engineers (USACE) Hydrologic Engineering Center-River Analysis System (HEC-RAS) program was used to perform a one-dimensional hydraulic analysis to evaluate the hydraulic impacts due to the proposed project. The bridge is located just below the confluence of the Owens Creek Diverting Canal which has a design flow of 400 cubic feet per second (cfs) and Mariposa Creek which has a design flow of 1,000 cfs. The design flow for the section of Mariposa Creek where the project is located is 1,250 cfs. These design flows are dictated by releases from Owens Reservoir and Mariposa Reservoir. Water surface elevations and water velocities for pre- and post-project conditions were determined using the HEC-RAS model. The hydraulic analysis indicates there will be a slight decrease in water surface elevation and reduced channel velocity near the bridge due to a reduction of piers in the channel. Hydraulic profile information is included with this report as Attachment D. The proposed project will increase the clearance of the bridge over Mariposa Creek by 0.6 feet. The existing clearance is more than 3 feet above the design water surface elevation; therefore, there will be no negative hydraulic impacts to the Mariposa Creek channel due to the proposed project.

6.2 – Geotechnical Analysis

As provided in the project analysis, the proposed project is located along Mariposa Creek directly downstream from the Owens Creek Diverting Canal. The south abutment of the project does not involve project levees while the north abutment of the project will be in the vicinity of the project levee for the Owens Creek Diverting Canal. Proposed

work also includes reconstructing access roads; one of which will affect the project levee for the Owens Creek Diverting Canal.

The piers will be supported by 48-inch diameter cast-in-drilled-hole concrete piles. Replacing existing abutments will require excavation of the channel near the project levee. Fill material will be placed in 4-to 6-inch layers and compacted to a relative compaction of not less than 90 percent per ASTM D 1557, with moistures between -2 and +3 percent of optimum moisture content. Fill material within four feet of the bridge will be compacted by appropriate hand-operated compaction equipment. Density tests by a certified soils laboratory will be completed to verify compaction of levee fill. All disturbed areas along the levee and work area will be returned to existing grades and pre-project conditions. There are no anticipated negative impacts to the levee or channel as a result of this project.

7.0 – AGENCY COMMENTS AND ENDORSEMENTS

The comments and endorsements associated with this project, from all pertinent agencies, are shown below:

- Merced County is the local maintaining agency for this project area. As Merced County is the applicant for this project, the project is considered as endorsed.

- The USACE 33 U.S.C. 408 permission letter has been received for this application. The USACE Sacramento District Engineer approves the request to alter the Federal flood risk reduction project, subject to conditions. The letter is incorporated into the permit as Exhibit A.

8.0 – CEQA ANALYSIS

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

The Board, as a responsible agency under CEQA, has reviewed the Burchell Avenue Bridge Replacement Project, Draft and Final Initial Study/Mitigated Negative Declaration (IS/MND) (SCH No.: 2017091074, September 2017; December 2017) and Mitigation Monitoring and Reporting Program prepared by the lead agency, the County of Merced (County). These documents, including project design, may be viewed or downloaded from the Central Valley Flood Protection Board website at: http://cvfpb.ca.gov/event/January-2019-regular-business-meeting/ under the link for this agenda item. These documents are also available for review in hard copy at the Board and County offices.

The County determined that the project will not have a significant effect on the environment, and on December 29, 2017 filed a Notice of Determination with the County Clerk. Board staff finds that although the proposed project could have a potentially significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. The project proponent has incorporated mandatory mitigation measures into the project plans to avoid identified impacts or to mitigate such impacts to a point where no significant impacts will occur. These mitigation measures are included in the project proponent's IS/MND and address impacts to water, noise, biological and cultural resources. The descriptions of the mitigation measures are further described in the County's adopted IS/MND.

In accordance with CEQA Guidelines Section 15096(e), Board staff independently reviewed the County's IS/MND, and finds these environmental documents prepared by the lead agency adequately address hydrology impacts, including potential flood risk, within the Board's jurisdiction. The Board, as a responsible agency, is responsible for mitigating and avoiding only the direct and indirect environmental effects of those parts of the project which it decides to carry out, finance, or approve (CEQA Guidelines § 15096(g); Public Resources Code § 21002.1(d)). In accordance with CEQA Guidelines Section 15096(f) and (g), staff recommends the Board make responsible agency findings that approval of Permit No. 19217 would not have a significant adverse impact and no additional mitigation measures within the Board's jurisdiction are required.

The documents and other materials which constitute the record of the Board's proceedings in this matter are in the custody of the Executive Officer, Central Valley Flood Protection Board, 3310 El Camino Avenue, Suite 170, Sacramento, California 95821.

9.0 – CALIFORNIA WATER CODE SECTION 8610.5 CONSIDERATIONS

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

   The Board will make its decision based on the evidence in the permit application and attachments, this staff report, and any other evidence presented by any individual or group.

2. The best available science that relate to the scientific issues presented by the executive officer, legal counsel, the Department of Water Resources or other parties that raise credible scientific issues.

The accepted industry standards for the work proposed under this permit as regulated by Title 23 have been applied to the review of this permit.

3. Effects of the decision on facilities of the State Plan of Flood Control (SPFC).

   The proposed project will replace an existing bridge within the SPFC that will improve channel capacity and reduce water velocity. Therefore, the new bridge is expected to have no adverse effects on any SPFC facilities. The proposed project is consistent with the adopted 2017 Central Valley Flood Protection Plan Update as it improves flood risk management by increasing capacity within the channel through replacement of the existing bridge with a new bridge built to current standards.

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

   The project will raise the existing clearance of the bridge by 0.6 feet. The clearance is already more than 3 feet above the design water surface elevation. Therefore, there are no expected adverse effects to the proposed project from reasonable projected future events.

10.0 – STAFF RECOMMENDATION

Staff recommends that the Board:

Adopt:

- CEQA finding: The Board, acting as a responsible agency under CEQA, has independently reviewed and considered the environmental documents prepared for the project. Approving the Permit 19217 would not result in any significant adverse impacts related to flood risk and no additional mitigation measures within the Board's jurisdiction are required; and,

Approve:

- Encroachment Permit No. 19217 in substantially the form provided in Attachment A; and

Direct:

- The Executive Officer to take the necessary actions to execute the permit and file a CEQA Notice of Determination with the State Clearinghouse.

11.0 – LIST OF ATTACHMENTS

A. Draft Permit No. 19217
B. Location Maps and Photos
C. Project Drawings
D. Hydraulic Profile Information

Reviewers:

Design Review:	Justin Logan, Engineer, Water Resources, Permitting Section
Environmental Review:	James Herota, Senior Environmental Scientist
Document Review:	Gary W. Lemon, P.E., Permitting Section Chief
	Kelly Soule, P.E., Operations Branch Chief
	Itzia Rivera, Environmental Services Section, Acting Chief
	Michael C. Wright, P.E., Acting Chief Engineer
Legal Review:	Jit Dua, Board Counsel

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DRAFT

STATE OF CALIFORNIA
THE RESOURCES AGENCY

THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 19217 BD

This Permit is issued to:

County of Merced
345 West 7th Street
Merced, California 95341

To remove the Burchell Avenue Bridge that crosses Mariposa Creek (also known as Duck Slough) and construct a five span cast-in-place prestressed concrete slab bridge; To widen and raise the bridge approach roads; To reconstruct driveway and channel access roads to conform with the new roadway profile; To place rock slope protection to protect the bridge abutments; To relocate an existing underground utility, two existing poles and associated overhead utilities; To remove and replace existing steel gate posts, a drainage culvert, and barbed wire fences.

The project is located approximately 0.35 miles south from the intersection of Santa Fe Avenue and South Burchell Avenue in Merced County between the towns of Planada and Le Grand, at 37.25731˚N 120.28869˚W, Mariposa Creek, Merced 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 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. 19217 BD

LIABILITY AND INDEMNIFICATION

THIRTEEN: The permittee shall defend, indemnify, and hold harmless the Central Valley Flood Protection Board (Board) and the State of California, including its agencies or departments thereof, including but not limited to, any and all boards, commissions, officers, agents, employees, and representatives (Indemnities), against any and all claims, liabilities, charges, losses, expenses, and costs including the State's attorneys' fees (Liabilities), that may arise from, or by reason of: (1) any action or inaction by the Indemnities in connection with the issuance or denial of any permit, lease, permit, or other entitlement; (2) as a result of approvals or authorizations given by the Board to the permittee pursuant to, or as a result of, permittee's permit application; (3) provisions of the issued permit or lease, provisions of CEQA, an environmental document certified or adopted by the Board related to the permit application, or any other regulations, requirements, or programs by the State, except for any such Liabilities caused solely by the gross negligence or intentional acts or the State or its officers, agents, and employees.

FOURTEEN: Permittee shall reimburse the Board in full for all reasonable costs and attorneys' fees, including, but not limited to, those charged to it by the California Office of Attorney General, that the Board incurs in connection with the defense of any action brought against the Board challenging this permit or any other matter related to this permit or the work performed by the State in its issuance of

this permit. In addition, the permittee shall reimburse the Board for any court costs and reasonable attorneys' fees that the Board/Indemnities may be required by a court to pay as a result of such action. The permittee may participate in the defense of the action, but its participation shall not relieve it of its obligations under the conditions of this permit.

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

AGENCY CONDITIONS

SIXTEEN: All work approved by this permit shall be in accordance with the submitted drawings and specifications dated September 23, 2015, except as modified by special permit conditions herein. No further work, other than that approved by this permit, shall be done in the area without prior approval of the Central Valley Flood Protection Board.

SEVENTEEN: Permittee shall pay to the Board, an inspection fee(s) to cover inspection cost(s), including staff and/or consultant time and expenses, for any inspections before, during, post-construction, and regularly thereafter as deemed necessary by the Board.

EIGHTEEN: In the event that levee or bank erosion injurious to the adopted plan of flood control occurs at or adjacent to the permitted encroachment(s), the permittee shall repair the eroded area and propose measures, to be approved by the Board, to prevent further erosion.

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

TWENTY: The permittee shall comply with all conditions set forth in the letter from the Department of the Army (U.S. Army Corps of Engineers, Sacramento District) dated November 28, 2018, which is attached to this permit as Exhibit A and is incorporated by reference.

TWENTY-ONE: The permittee agrees to notify new property/encroachment owner(s) that they are required to submit a permit Name Change request form to the Board upon completion of the sale. The new owner(s) will be required to comply with all permit conditions. Name Change forms are available at http://cvfpb.ca.gov/

TWENTY-TWO: The Board reserves the right to add additional, or modify existing, conditions when there is a change in ownership and/or maintenance responsibility of the work authorized under this permit.

PRE-CONSTRUCTION

TWENTY-THREE: Upon receipt of a signed copy of the issued permit the permittee shall contact the Board by telephone at (916) 574-0609, and submit the enclosed postcard, to schedule a preconstruction conference with the inspector that is assigned to your project. Failure to do so at

least 10 working days prior to start of work may result in a delay of the project.

CONSTRUCTION

TWENTY-FOUR: No construction work of any kind shall be done during the flood season from November 1 to April 15 without prior approval of the Board. Failure to submit a Time Variance Request to the Board at least 10 working days prior to November 1 may result in a delay of the project.

TWENTY-FIVE: Temporary staging, formwork, stockpiled material, equipment, and temporary buildings shall not remain in the floodway during the flood season from November 1 to April 15.

TWENTY-SIX: All cleared trees and brush shall be completely removed from the floodway, and downed trees or brush shall not remain in the floodway during the flood season from November 1 to April 15.

TWENTY-SEVEN: The abandoned or dismantled bridge shall be completely removed and disposed of outside the limits of the levee section and floodway.

TWENTY-EIGHT: Piers, bents, and abutments being dismantled shall be removed to at least 1 foot below the natural ground line and at least 3 feet below the bottom of the low-water channel.

TWENTY-NINE: The relocated poles shall be located a minimum of 15 feet from the levee toe.

THIRTY: Bridge piers and bents placed within the floodway shall be constructed in line with the existing bents and piers.

THIRTY-ONE: Backfill material for excavations within the levee section and within 10 feet of bridge supports within the floodway shall be placed in 4- to 6-inch layers and compacted to a minimum of 90 percent relative compaction as measured by the current ASTM D1557 standard and above optimum moisture content.

THIRTY-TWO: Density tests by a certified soils laboratory will be required to verify compaction of levee fill and trench backfill.

POST-CONSTRUCTION

THIRTY-THREE: All debris generated by this project shall be properly disposed of outside the Mariposa Creek Channel and project right-of-way.

THIRTY-FOUR: The work area shall be restored to the condition that existed prior to start of work.

THIRTY-FIVE: Upon completion of the project, the permittee shall submit as-constructed drawings to the Board and to: Department of Water Resources, Flood Project Inspection Section, 3310 El Camino Avenue, Suite 256, Sacramento, California 95821.

OPERATIONS AND MAINTENANCE

THIRTY-SIX: After each period of high water, debris that accumulates at the site shall be completely removed from the floodway.

THIRTY-SEVEN: The permittee shall maintain the permitted encroachment(s) and the project works within the utilized area in the manner required and as requested by the authorized representative of the Central Valley Flood Protection Board, the Department of Water Resources, or any other agency responsible for maintenance and shall, at all times, allow officials from these agencies to access the levee, levee slope, and any adjacent areas as necessary for flood control.

THIRTY-EIGHT: If the replaced bridge is damaged to the extent that it may impair the channel or floodway capacity, it shall be repaired or removed prior to the next flood season.

THIRTY-NINE: Trees, brush, sediment, and other debris shall be kept cleared from the bridge site and disposed of outside the floodway to maintain the design flow capacity and flowage area.

FORTY: If erosion occurs adjacent to the permitted encroachment(s), the permittee shall repair the eroded areas and place adequate revetment on the affected areas to prevent further erosion as approved by the Board.

FORTY-ONE: The permitted encroachment(s) shall not interfere with the operation and maintenance of the flood control project. If the permitted encroachment(s) are determined by any agency responsible for operation or maintenance of the flood control project to interfere, the permittee shall be required, at permittee's cost and expense, to modify or remove the permitted encroachment(s) within 30-days of being notified in writing by the Board. In the event of an emergency a shorter timeframe may be required. If the permittee does not comply, the Board, or a designated agency or company authorized by the Board, may modify or remove the encroachment(s) at the permittee's expense.

PROJECT ABANDONMENT / CHANGE IN PLAN OF FLOOD CONTROL

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

FORTY-THREE: The permittee may be required, at permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted encroachment(s) if in the discretion of the Board the removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with any present or future flood control plan or project or if the project is not maintained or is damaged by any cause. The permittee shall remove the encroachment(s) within 30-days of being notified in writing by the Board. In the event of an emergency a shorter timeframe may be required. If the permittee does not comply the Board will remove the encroachment(s) 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

408 Permission Section (19217)

NOV 28 2018

Ms. Leslie M. Gallagher
Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 170
Sacramento, CA 95821

Dear Ms. Gallagher:

We have reviewed permit application number 19217 submitted by the County of Merced to alter the Merced County Stream Group authorized by the Flood Control Act of 1944. This project includes removing the Burchell Avenue Bridge that crosses Mariposa Creek (also known as Duck Slough) and constructing a five span cast-in-place prestressed concrete slab bridge; widening and raising the bridge approach roads; reconstructing driveway and channel access roads to conform with the new roadway profile; placing rock slope protection to protect the bridge abutments; relocating an existing underground utility, two existing poles and associated overhead utilities; and removing and replacing existing steel gate posts, a drainage culvert, and barbed wire fences. The project is located approximately 0.35 miles south from the intersection of Santa Fe Avenue and South Burchell Avenue between the towns of Planada and Le Grand at 37.257308°N, -120.288694°W, NAD83, Merced County, CA.

The Sacramento District (Corps) has reviewed this application and determined that the alteration will not be injurious to the public interest and will not impair the usefulness of the project works. Pursuant to Section 14 of the Rivers and Harbors Act of 1899, 33 U.S.C. § 408 (Section 408), the District Engineering Division Chief approves the request to alter the Federal flood risk reduction project subject to the following conditions:

a. That the proposed work shall not be performed during the flood season of November 1 to April 30, unless otherwise approved in writing by your Board.

b. That in the event trees, brush, or debris are cleared, they shall be properly disposed of outside the limits of the project right-of-way.

c. That the proposed work shall not interfere with the integrity or hydraulic capacity of the flood risk reduction project; easement access; or maintenance, inspection, and flood fighting procedures.

d. That in areas of levee excavation, fill used to restore the levee embankment shall be placed in a maximum loose lift thickness of six inches and compacted to not less than 90% of the maximum density at moistures between -2 and +3 percent of optimum moisture content obtained from ASTM D1557 or 95% of the maximum density at moistures between -2 and +3 percent of optimum moisture content obtained from ASTM D698. Fill materials placed within 4 feet of any structure shall be compacted using appropriate hand operated compaction equipment in 4 inch loose lifts.

e. That in areas where construction of the maintenance access road requires cutting into the existing levee, the levee slope shall be restored to meet USACE requirements.

f. That all excavations shall meet Federal, State, local, and OSHA criteria. Temporary excavations shall be no steeper than 2 (horizontal): 1 (vertical).

g. That relocated power poles shall not be installed within the embankment or within 15 feet of the levee toe.

h. That in the event erosion occurs at the site, the erosion shall be repaired and adequate bank protection shall be placed to prevent future erosion.

i. That appropriate property rights shall be acquired as needed for construction, operation, and maintenance of the alteration. An approval under Section 408 does not grant property rights or exclusive privileges.

j. To ensure your project complies with the Federal Endangered Species Act, you shall implement all of the avoidance, minimization, and conservation measures identified in the enclosed U.S. Fish and Wildlife Service letter of concurrence (08ESMF00-2016-I-1652, dated August 15, 2016) and National Marine Fisheries Service letter of concurrence (WCR-2016-5373, dated August 12, 2016). If you are unable to implement any of the proposed measures, you must immediately notify the Corps, prior to initiating the work, so the Corps may reinitiate consultation as appropriate, in accordance with the Federal Endangered Species Act.

k. That if you discover any previously unknown historic properties (36 CFR § 800.13) while accomplishing the activity authorized by this Section, you shall immediately notify the Corps of what you have found. The Corps will initiate any necessary Federal and State coordination to ensure continued compliance with the National Historic Preservation Act.

This Section 408 letter of permission does not serve as authorization for any work that affects the navigable capacity of waters of the United States or that involves the discharge of dredge or fill material into waters of the United States. A Section 10 and/or

Section 404 permit application SPK-2018-00075 is in process for this work. The Section 10 and/or Section 404 permit must be issued prior to commencement of work affecting waters of the United States.

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. For any questions regarding this permission, please contact Kimberlee Leonard at 916-557-7183.

Sincerely,

Rick L. Poeppelman, P.E.
Chief, Engineering Division
Levee Safety Officer

Enclosures

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846

In Reply Refer to:
08ESMF00-
2016-I-1652

AUG 15 2016

Ms. Julie Myrah
Office Chief
Caltrans District 10 Environmental
P.O. Box 2048
Stockton, California 95205

Subject: Informal Consultation on the Burchell Avenue Bridge Replacement Project – BRLO 5939(077)

Dear Ms. Myrah:

This letter acknowledges the U.S. Fish and Wildlife Service's (Service) July 11, 2016 receipt of your July 11, 2016 request for concurrence with the determination that the proposed Burchell Avenue Bridge Replacement Project – BRLO 5939(077) in Merced County, California may affect, but is not likely to adversely affect (NLAA) the federally-listed as endangered San Joaquin kit fox (*Vulpes macrotis mutica*).

The Project will remove the existing bridge structure and reconstruct with a bridge that will improve public safety.

Caltrans has requested initiation of informal consultation under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act). Our response is based on the following information: (1) an initial biological assessment (BA) dated May 2016, (2) a consultation request letter dated July 11, 2016, (3) email exchanges in July 2016, (4) and other information available to the Service.

Project Description

The replacement Burchell Avenue Bridge crossing Duck Slough will consist of a five-span, flat-slab bridge and will measure 35.5 feet wide and 240 feet long. The replacement bridge will include north and south abutments, approximately 10-feet deep at both abutments, supported by a spread footing and four pile piers, each supported by four bridge piles with column extensions. Rock slope protection will be placed on each bank to protect the new bridge abutments. The Burchell Avenue Bridge approaches will be widened from 20 feet to 32 feet for a length of approximately 450 feet to the south and 400 feet to the north. On both sides of the bridge, the road surface (asphalt concrete pavement) will be tapered to match the existing road cross section.

The installation of the required roadway approach railing and roadway widening will necessitate the realignment of three adjacent levee bank roadways. On the north side of the bridge, the existing configuration of the maintenance road and a Merced Irrigation District (MID) outlet structure will be altered to accommodate widening of the roadway and the extension of the roadway approach railing. As such, a new

ENCLOSURE (1)

access to the maintenance road will be constructed at the present location of the MID outlet structure and a new outlet structure will be constructed further to the west. Approximately four feet of fill will be required to accommodate the raised profile grade of the maintenance road. The existing outlet structure will be removed and the three existing pipelines to the existing outlet structure will be extended beneath the realigned maintenance road access, approximately 80 feet northwest of the new outlet structure. A new 26 feet wide, 9.7 feet tall concrete headwall structure will be constructed at the junction of the canal gate and Burchell Lateral (irrigation canal). Along the southeast approach, a new roadside ditch and culvert will be constructed to replace the existing culvert and ditch that is in conflict with the approach fills.

Electrical poles located on the west side of the road and located nearest to the bridge will need to be moved further to the west to allow room for construction equipment. It is anticipated that four poles will need to be moved.

Construction of the bridge will occur in a three to four month window during summer months when the water in Duck Slough is lowest, and storm flows are extremely unlikely. To provide for in-channel work, dewatering (if necessary) will be conducted through the placement of culverts in the channels to accommodate flower with temporary earth berms built at the ends to limit water from the work area. All dewatering structures would be removed at the conclusion of the project.

It is anticipated that excavators, dozers, cranes, pavers, dump trucks, concrete pumps, pile driving hammers, and pile driving/drilling equipment may be required to construct the new bridge. Construction is anticipated to be completed within one construction season. The project is anticipated to permanently disturb 0.27 acres of annual grassland habitat and the total anticipated permanent and temporary impacts is 6.30 acres. The potential kit fox burrow locations may be indirectly impacted through noise during construction, but no permanent impacts to the burrows are anticipated. Temporarily impacted habitats will be restored following construction and it is anticipated the habitat quantity and quality within Duck Slough will not be altered significantly.

ESA biologists visited the Project Impact Area (PIA) on April 1, 2015 to conduct focused biological and botanical surveys and fieldwork for the wetland delineation. During the focused survey, biologists walked transects through the entire BSA (Biological Study Area) obtaining 100 percent visual coverage of the habitat present. The BSA comprises a 250 foot radius around the PIA (the area in which all the permanent and temporary project impacts will occur). The BSA is located on the San Joaquin Valley floor. The topography in the BSA and surrounding areas is nearly flat with a gentle slope from east to west. Duck Slough is the primary landform dominating the BSA. Upland habitat types and vegetation communities in the BSA include annual grassland, disturbed, agricultural and residential development and urban. Aquatic habitat occurs in Duck Slough and an irrigation canal. Developed agriculture is the dominant land use surrounding the PIA. Annual grassland is largely restricted to the margins of Duck Slough and the irrigation canal. Both Duck Slough and the irrigation canal could provide movement corridors through the BSA.

No federally-listed species were observed during biological surveys in April 2015. However, biologists noted two potential San Joaquin kit fox dens to the south of the BSA. The closest potential den was approximately 422 feet south of the BSA. No activity was noted at either location. Habitats within the BSA, particularly the annual grassland along Duck Slough, could provide suitable foraging and denning habitat. There are two records of San Joaquin kit fox in the California Natural Diversity Database within 5 miles of the project area.

Environmental Commitments

As part of the Proposed Action, Caltrans staff and its contractors will implement Avoidance and Minimization Measures (AMM) prior to and during construction activities. In addition Best Management Practices will be implemented by Caltrans and contractors working on the Project to further minimize and avoid effects to sensitive species and air quality during construction activities using the following:

1. Project-related vehicles will observe a 20-mph speed limit in all project areas, except on County roads and State and Federal highways. Off-road traffic outside of designated project areas shall be prohibited.

2. To prevent inadvertent entrapment of kit fox or other animals during construction, all excavated steep-walled holes or trenches more than two feet deep will be covered at the close of each work day by plywood or similar materials or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the procedures listed in item 13 must be followed.

3. San Joaquin kit fox are attracted to den-like structures such as pipes and may enter stored pipes becoming trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods will be thoroughly inspected for kit fox before the pipe is buried, capped or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, the section of pipe will not be moved or used until the Service is consulted. If necessary, and under direct supervision of a Service biologist or designated representative, the pipe may be moved once to move if from the path of construction activity until the fox has escaped.

4. Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities. Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped. Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities. If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization.

5. All food-related trash items such as wrappers, cans, bottled, and food scraps will be disposed of in closed containers and removed at least once a week from the construction or project site.

6. No firearms will be allowed on the project site.

7. To prevent harassment, mortality, or the destruction of dens, no pets will be permitted on the project site.

8. A representative will be appointed by the County who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or trapped individual. The representative will be identified during the employee education program. The representative's name and phone number will be provided to the Service.

9. Prior to the start of construction, the applicant will retain a qualified biologist who is knowledgeable in kit fox biology and legislative protection to conduct an employee education program for all contractors, their employees, and agency personnel involved in the project. The program will include the following: a description of the kit fox and its habitat needs, a report of the occurrence of kit fox in the project area, and explanation of the status of the species and its protection under the ESA, and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information will be prepared for distribution to the above-mentioned people and anyone else who may enter the project site.

10. Upon completion of the project, all areas subject to temporary ground disturbances, including staging and storage areas, temporary roads, pipeline corridors, etc. will be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but that after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate areas will be determined on a site-specific basis in consultation with the Service, California Department of Fish and Wildlife (CDFW), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures will be installed immediately to allow the animal(s) to escape, or the Service will be contacted for advice

12. If any accidental entrapment, death, or injury to a kit fox occurs during project related activities, the Service and CDFW will be notified immediately and the particular activity that caused the take should cease until the agencies provide guidance. In addition, Caltrans will initiate formal consultation on the project. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and other pertinent information. The Service contact is Thomas Leeman, Chief, San Joaquin Valley Division, 2800 Cottage Way Suite W-2605, Sacramento, California, 95825-1846 and (916) 414-6544. The CDFW contact is Mr. Ron Schlorff at 1416 9th Street, Sacramento, California 65814, and (916) 654-4262. The CDFW contact for immediate assistance is the State Dispatch at (916) 445-0045.

13. Night-time construction will be prohibited.

14. In order to avoid impacts, avoidance of dens (potential, atypical, known, or natal) would follow the exclusion zone demarcation and fencing described in the USFWS Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS, 2011).

Conclusion

The Service concurs with your determination that the project may affect, but is not likely to adversely affect the San Joaquin kit fox. Our concurrence with NLAA for this Project is based on the small area of permanent impacts, limited area of suitable habitats within the PIA, and environmental commitments in Caltrans July 2016 consultation request letter and May 2016 survey report. Environmental commitments for the Project include: environmental awareness training, on-site monitoring during Project activities, and the restriction of work to daylight hours only. This concludes the Service's review of the proposed project. No further coordination with the Service under the Act is necessary at this time. Please note, however, this letter does not authorize take of listed species. As provided in 50 CFR §402.14, initiation of formal consultation is required where there is discretionary Federal involvement or control over the action (or is authorized by law)

and if: 1) new information reveals the effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this review; 2) 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 review; or 3) a new species is listed or critical habitat designated that may be affected by the action.

Sincerely,

Thomas Leeman
Chief, San Joaquin Valley Division

cc:
Julie Vance, California Department of Fish and Wildlife, Fresno, CA

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
650 Capitol Mall, Suite 5-100
Sacramento, California 95814-4700

Refer to NMFS No: WCR-2016-5373

Ms. Julie Myrah
Office Chief
Caltrans District 10 Environmental
P.O. Box 2048
Stockton, CA 95205

Re: Endangered Species Act Section 7(a)(2) Concurrence Letter and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response and Fish and Wildlife Coordination Act Recommendations for the Burchell Avenue Bridge over Duck Slough.

Dear Ms. Myrah:

On June 14, NOAA's National Marine Fisheries Service (NMFS) received your request for a written concurrence that the California Department of Transportation (Caltrans) proposal to replace Burchell Avenue Bridge over Duck Slough, under National Environmental Policy Act (NEPA) Assignment Memorandum of Understanding (MOU) (23 USC 326), is not likely to adversely affect (NLAA) species listed as threatened or endangered or critical habitats designated under the Endangered Species Act (ESA). This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA, implementing regulations at 50 CFR 402, and agency guidance for preparation of letters of concurrence.

NMFS also reviewed the proposed action for potential effects on Pacific Coast Salmon essential fish habitat (EFH) designated under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), including conservation measures and any determination you made regarding the potential effects of the action. This review was pursuant to section 305(b) of the MSA, implementing regulations at 50 CFR 600.920, and agency guidance for use of the ESA consultation process to complete EFH consultations. Fall-run/Late Fall-run Chinook salmon have the potential to be present in the Action Area and are managed under the Pacific Coast Salmon Fisheries Management Program (FMP). The following habitat areas of particular concern (HAPCs), as designated under this FMP, are present in the Action Area: complex channels and floodplain habitat. In this case, NMFS concluded that the action would not adversely affect EFH. Thus, consultation under MSA is not required for this action. This is largely due to the timing of construction, which will take place during the time of year when the Action Area is unsuitable habitat for Pacific Salmon, as well as avoidance and minimization measures employed by the Action Agency, which make it highly unlikely that EFH will be affected.

ENCLOSURE (2)

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The concurrence letter will be available through NMFS' Public Consultation Tracking System https://pcts.nmfs.noaa.gov. A complete record of this consultation is on file at the California Central Valley Office (CCVO) of NMFS.

Proposed Action and Action Area

The proposed project is located on Burchell Avenue, approximately 11 miles southeast of the City of Merced in Merced County, California. Merced County is proposing to replace the existing Burchell Avenue Bridge over Duck Slough. The Burchell Avenue Bridge, constructed in 1945, is a timber structure approximately 230 feet long, and has a 10-span timber girder with reinforced concrete deck structure. The purpose of the proposed project is to remove the existing structure, which has been determined to be structurally deficient, and reconstruct a bridge that will improve public safety.

Construction of the bridge will occur in a three to four month window during summer months when the water in Duck Slough is lowest, and storm flows are highly unlikely. Permanent structures for the replacement bridge include four pile piers and the rock slope protection layer for the bank areas below the bridge abutments. During bridge construction, the action agency will maintain access to the creek in order to remove the existing bridge timber superstructure and piers, allow for construction of pile piers for the replacement bridge, and to provide temporary support for bridge falsework. To provide for in-channel work, dewatering may be necessary. If so, dewatering will be conducted through the placement of culverts in the channel to accommodate flows with temporary earth berms built at the ends to limit water from the work area. All dewatering structures would be removed at the conclusion of the project.

Temporary impacts within the slough may include minimal clearing or vegetation removal, but no trees or large woody vegetation will be removed from the streambed. It is anticipated that several trees from the orchards adjacent to the south approach will need to be removed to accommodate for the new roadway approach fills.

The Action Agency anticipates that excavators, dozers, cranes, pavers, dump trucks, concrete trucks, concrete pumps, pile driving hammers, and pile driving/drilling equipment may be required to construct the new bridge. Construction is anticipated to be completed within one construction season. During construction, traffic will be detoured around the project site to existing County roadways.

The Action Area encompasses all areas that will be directly or indirectly affected by construction. This includes the area impacted by the demolition of the existing bridge, construction of the new bridge, approximately 450 feet of roadway conform located on the south and 400 feet of roadway conform located on the north side of the bridge, realignment of adjacent levee bank roadways, modification of the Merced Irrigation District (MID) outlet structure, construction staging areas, and a 250 foot buffer surrounding all of the aforementioned areas. Riverine habitat within the Action Area includes Duck Slough, which is typically dry during the construction window.

There are no interrelated or interdependent activities present that would affect listed fish species.

Action Agency's Effects Determination

Caltrans has concluded that the action is not likely to adversely affect listed species or critical habitat for the following reasons:

- In-water construction activities are anticipated to take place while Duck Slough is typically dry (July 1 through October 31).
- Avoidance and minimization efforts to protect water quality would be implemented and would avoid indirect impacts such as increased sedimentation or increased turbidity in Central Valley steelhead habitat.
- If dewatering is necessary, all dewatering structures would be removed at the conclusion of the project. Areas that are temporarily impacted during construction would be restored to a similar condition as the baseline condition following construction. If Caltrans determines listed fish will be present during dewatering, Caltrans will contact NMFS. Reinitiation may be required.

Status of the Species and Critical Habitat in the Action Area

As indicated in NMFS correspondence with Caltrans (See, species list request from May, 2016), best available information indicates that the following federally listed species may potentially occur in the proposed Action Area. Designated critical habitat does not occur in the proposed Action Area.

Table 1. ESA listing history

Species	**Scientific Name**	**Original Final Listing Status**	**Current Final Listing Status**	**Critical Habitat Present in Proposed Action Area**
California Central Valley steelhead DPS	*Oncorhynchus mykiss*	3/19/1988 63 CFR 13347 Threatened	1/5/2006 71 CFR 834 Threatened	Does not occur

There is a potential for Central Valley steelhead to occur within the Action Area during periods of high flows. However, the potential for steelhead to occur is highly unlikely. The Action Area is over 20 miles from the San Joaquin River where Central Valley steelhead are known to occur, and Duck Slough does not provide suitable habitat for spawning, juvenile migrations, or rearing. Only stray fish could potentially occur in the project impact area or Action Area.

The action agency's survey results recorded no occurrences of Central Valley steelhead DPS within 5 miles of the Action Area.

Consultation History

- On May 23, 2016, Caltrans submitted a species list request to NMFS regarding the proposed Burchell Avenue Bridge over Duck Slough Replacement Project located in Merced County, California.
- On May 31, 2016, NMFS responded with a letter describing federally listed species and critical habitat that may potentially occur in the proposed Action Area.
- On June 14, 2016, NMFS received a Biological Assessment (BA) and informal consultation initiation request letter from Caltrans.
- On July 18, 2016, NMFS requested additional information from the applicant.
- On July 20, 2016, Caltrans submitted the requested additional information to NMFS.
- On July 20, 2016, NMFS initiated informal consultation.

ENDANGERED SPECIES ACT

Effects of the Action

Under the ESA, "effects of the action" means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action (50 CFR 402.02). The applicable standard to find that a proposed action is not likely to adversely affect listed species or critical habitat is that all of the effects of the action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those extremely unlikely to occur.

The effects of the proposed action are reasonably likely to include:

Injury or Mortality from Construction-Related Activities

One potential effect to listed fish from construction activities is the possibility of being crushed by construction-related equipment, or otherwise disturbed by the construction equipment. Central Valley steelhead could potentially be present in the project area, and affected by construction-related activities. However, the work window of the proposed action (August 1 through October 31) takes place when Duck Slough will likely be dry, and no Central Valley steelhead are likely be present. Even if water is present in Duck Slough during the construction window, the conditions would be highly unsuitable for steelhead due to low flows, high heat, and low dissolved oxygen. So even if water is present in the Slough, steelhead will likely not be present. Therefore, the potential for adverse effects to Central Valley steelhead due to construction-related activities between August 1 and October 31 is discountable because they are highly unlikely to be present.

Destruction of Habitat

The clearing or destruction of riparian habitat to facilitate bridge construction can also harm listed fish. Vegetation removal may be included as part of the action, as needed, within the slough to provide for equipment access. In order to ensure that aquatic habitat will not adversely affect listed fish species, the action agency has employed avoidance and minimization efforts. Clearing to facilitate construction activities will be confined to the minimal area necessary within 200 feet of aquatic habitat. No trees or large woody vegetation will be removed from the streambed as part of this project. The potential for adverse effects to Central Valley steelhead due to destruction of aquatic habitat is discountable, because they are highly unlikely to be present and the action agency is employing avoidance and minimization measures, which makes the destruction of aquatic habitat highly unlikely to occur.

Impacts to Water Quality

Water quality can also be negatively impacted from bridge construction and has the potential to harm listed fish present in the Action Area. Reduced water quality associated with construction has the potential to negatively impact fishes temporarily through reduced availability of food and reduced feeding efficiency. However, construction activities will follow standard engineering practices to reduce impacts to water quality. These include reduction of sediment loading and sediment disturbance as well as other Best Management Practices (BMPs) for maintaining water quality in the Action Area. Construction activities will employ erosion control measures to reduce siltation and contaminated runoff. Further, standard soil stabilization, sediment control, wind erosion control, tracking control, non-storm water management and waste management construction BMPs will be implemented throughout construction in order to avoid and minimize adverse effects to water quality within the Action Area. Upon completion of construction, temporarily disturbed sections of watercourses will be revegetated (hydroseeded to stabilize disturbed areas) with native species typical of similar habitats in the region or restored to its original condition.

Due to the unsuitable habitat conditions present during the construction window (completely dry conditions or wet conditions with high temperatures and low dissolved oxygen), Central Valley steelhead are not expect to be present during the time of construction. Increases in turbidity are expected to be temporary in nature, and the site will return to baseline conditions before steelhead are again present in the action area. Therefore the potential for adverse effects to Central Valley steelhead due to water quality impacts is discountable.

Conclusion

Based on this analysis, NMFS concurs with Caltrans that the proposed action is not likely to adversely affect the subject listed species and designated critical habitats.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by Caltrans or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by

law and (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter; or if (3) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes the ESA portion of this consultation.

Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of threatened and endangered species. Conservation recommendations are discretionary agency activities intended to minimize or avoid adverse effects of a proposed project on listed species or critical habitat, to help implement recovery plans, or to develop information. Caltrans also has the same responsibilities, and informal consultation offers action agencies an opportunity to address their conservation responsibilities under section 7(a)(1). In order to fulfill the requirements of section 7(a)(1), NMFS recommends the following conservation measures:

(1) Caltrans should post signs in the Action Area about storm water pollution and runoff, advising citizens of the presence of listed fish species and to not discharge any chemicals, oils, or other waste products near the stream.

(2) Caltrans should modify any grade-control structures associated with bridges and/or road crossings to promote fish passage in accordance with the NMFS Guidelines for Salmonid Passage at Stream Crossings (NMFS 2001) document.

(3) Caltrans should provide fiscal and staffing support to anadromous salmonid monitoring programs throughout the Delta to improve the understanding of migration and habitat utilization by salmonids in this region.

(4) Caltrans should limit the removal of any native riparian vegetation in the Action Area.

Please direct questions regarding this letter to Annalisa Batanides at the WCR CCVP of NMFS at (408) 621-8113 or via email at Annalisa.batanides@noaa.gov.

Sincerely,

for William W. Stelle, Jr.
Regional Administrator

cc: Division Chron File: ARN 151422-WCR2016-SA00264

Dominic Vitali; Dominic.VitaliA@dot.ca.gov

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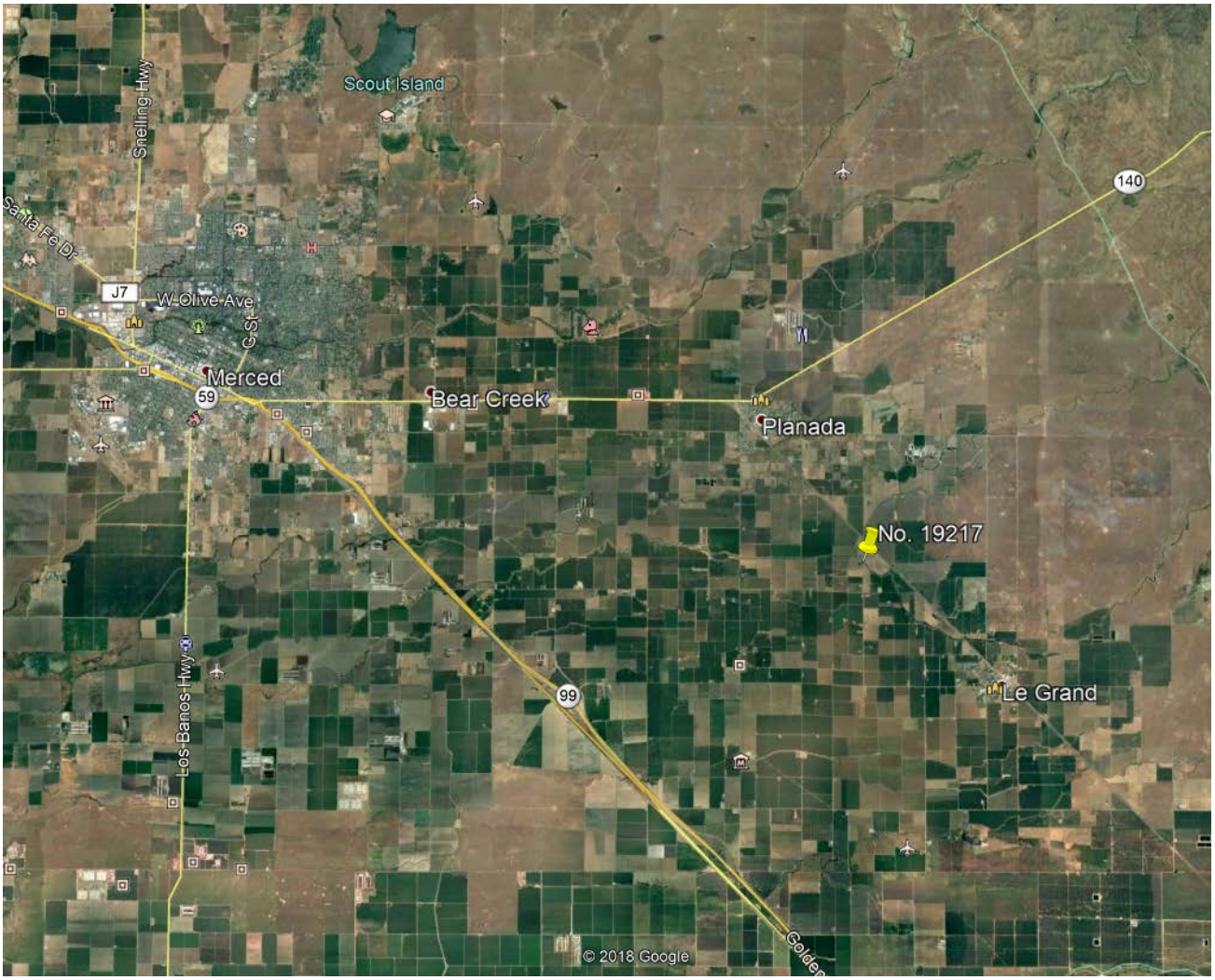
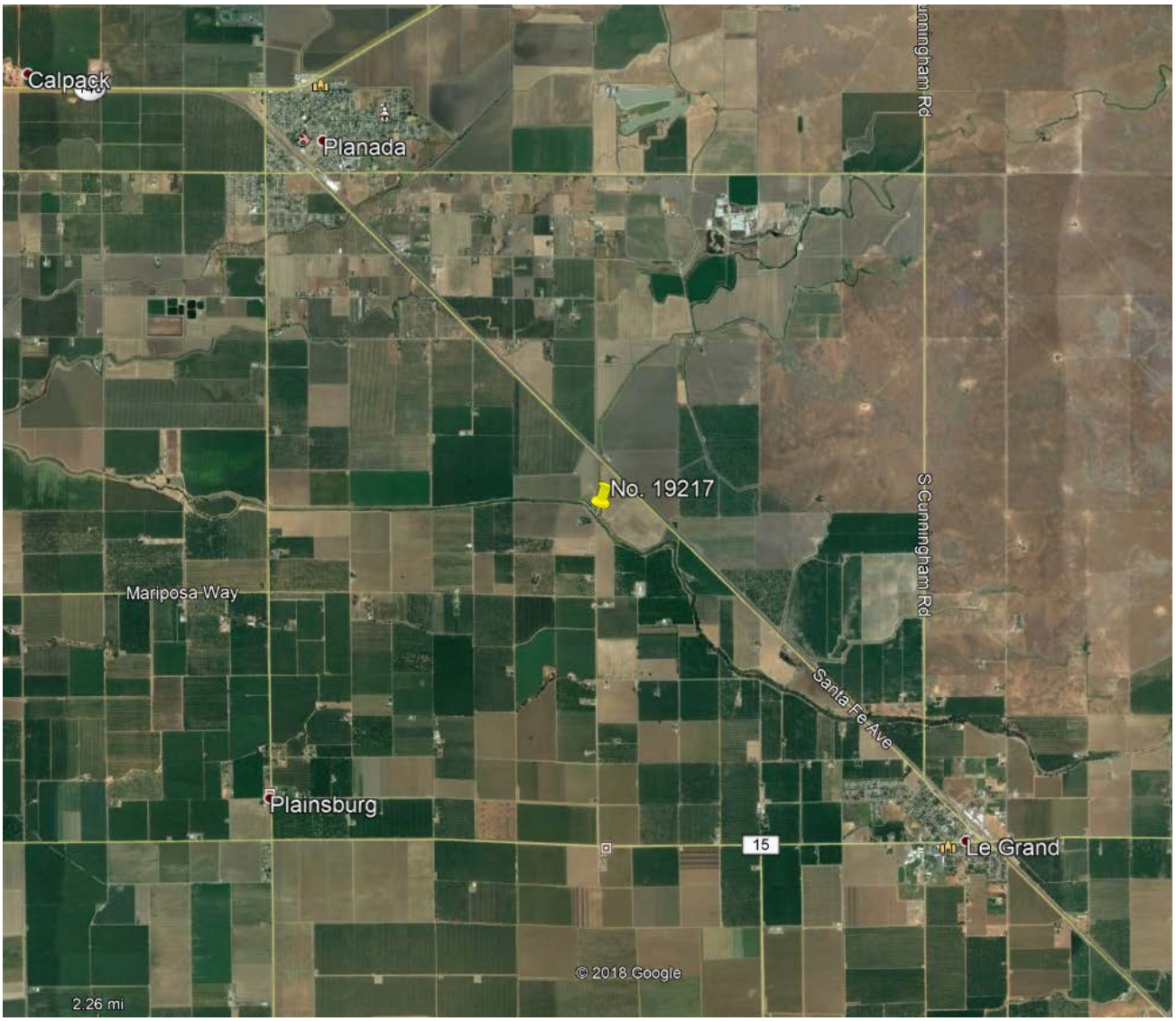
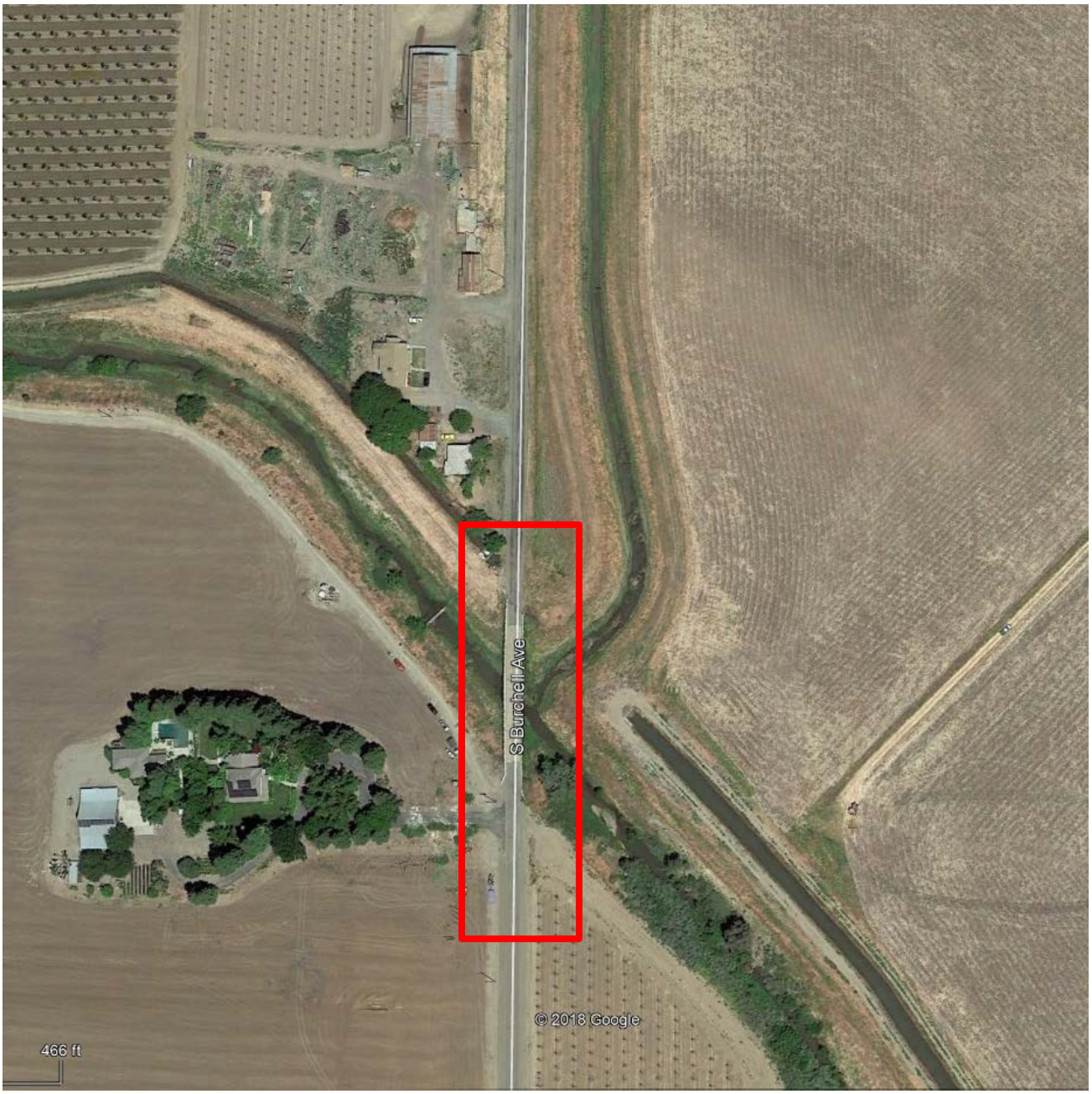
Project Vicinity



Project Location



Project Footprint



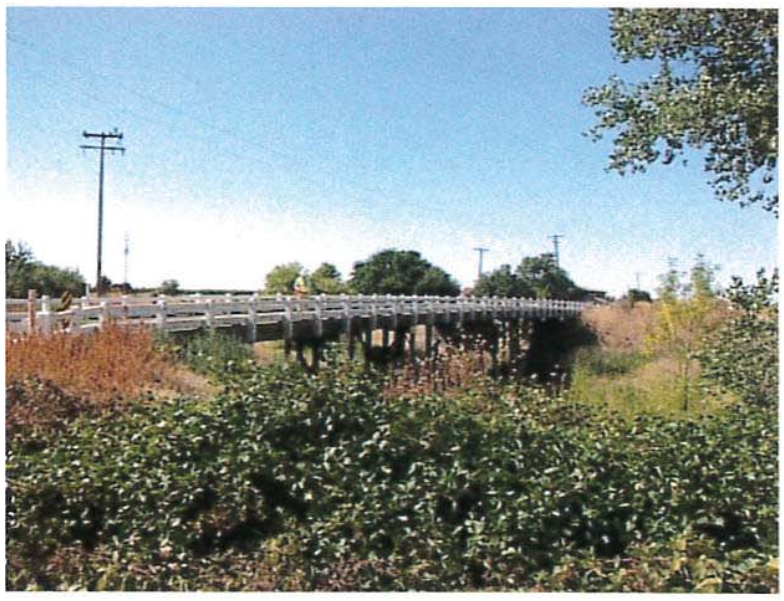
Looking north on Burchell Ave

Looking upstream on Duck Slough
at Burchell Ave Bridge

Looking downstream Duck Slough from
Burchell Ave Bridge

Looking upstream Duck Slough from
Burchell Ave Bridge

Looking south on Burchell Ave



Looking downstream Duck Slough at
Burchell Ave Bridge

INDEX OF PLANS

MERCED COUNTY
DEPARTMENT OF PUBLIC WORKS
ROAD DIVISION

PLANS FOR CONSTRUCTION OF

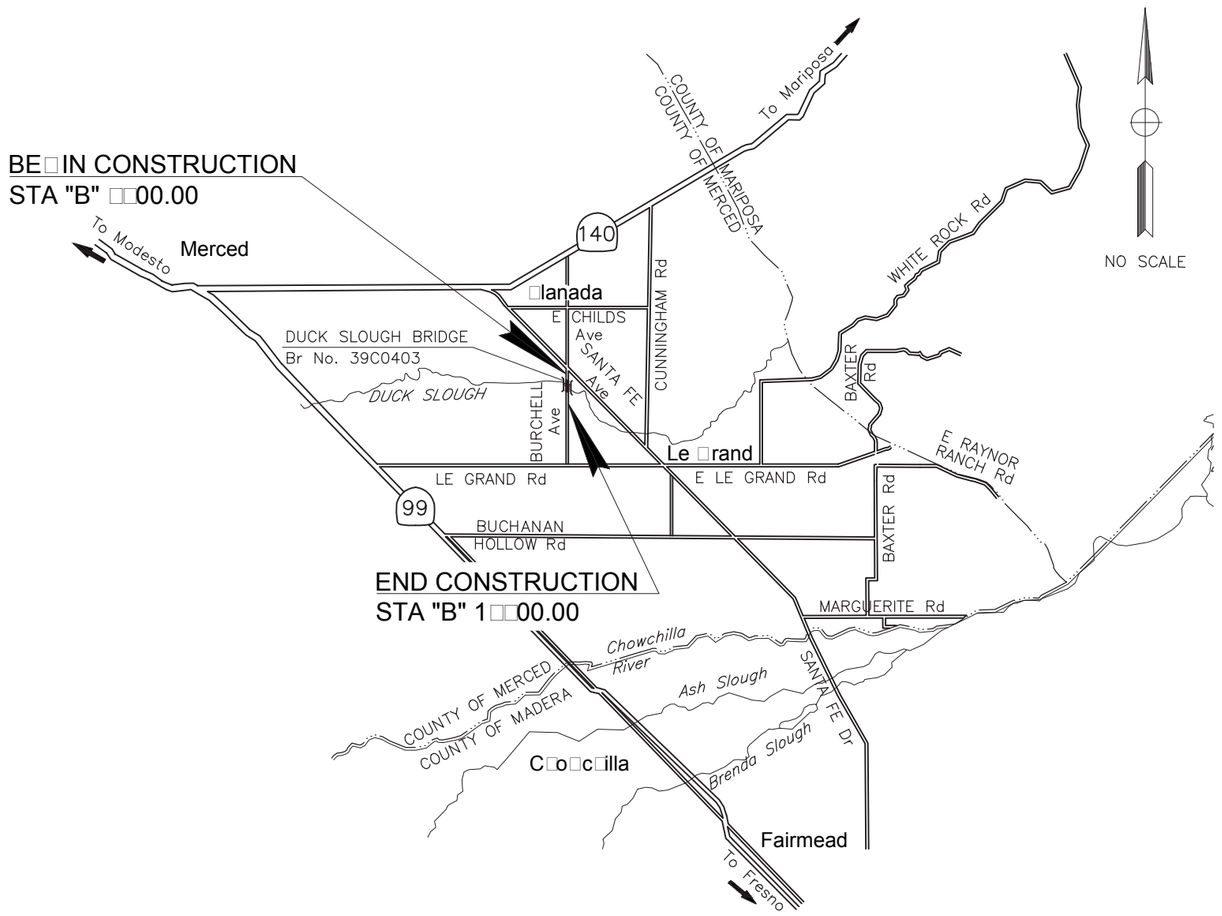
BURCHELL AVENUE OVER DUCK SLOUGH

BRIDGE NO. 39C0403

FEDERAL □RO□ECT No. BRLO-59□9□077□

In Merced County Located 3.0 Miles Northwest of Le Grand

TO BE SU□□LEMENTED B□ STATE OF CALIFORNIA□STANDARD □LANS DATED 2010



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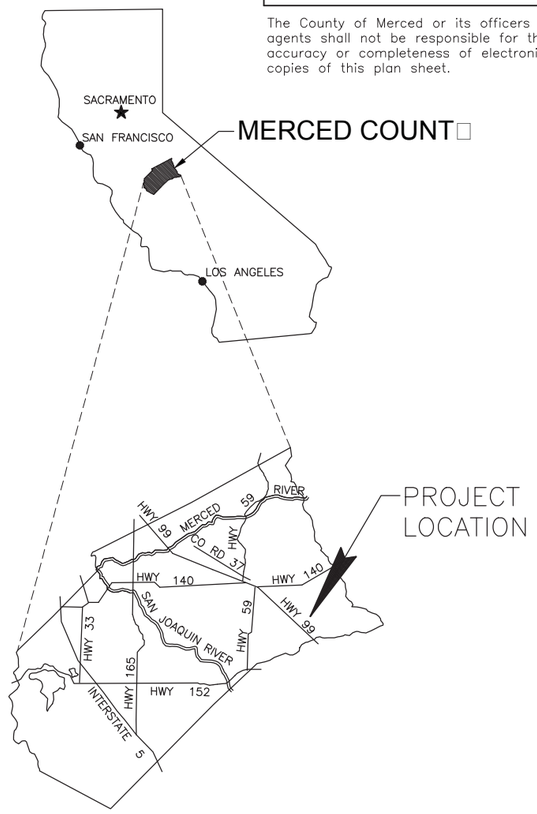

DIST	COUNTY	PROJECT	SHEET No.	TOTAL SHEETS
10	Mer	BURCHELL AVNENUE OVER DUCK SLOUGH	1	32
STATE ID #				
CONTRACT #				

Quincy Engineering, Inc
11017 Cobble Rock Dr. #100
Rancho Cordova, CA 95670

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

MERCED COUNTY
REVISIONS | DATE | BY

DESIGN | GARRETT M
DRAWN | DCP
CHECKED | DES CHK
SCALE: AS SHOWN
M09213rab001.dwg

MERCED COUNT□ D.□.□.
Road Division
715 Martin Luther King Jr. Way
Merced, CA 95340-6041
Phone: (209) 385-7601 FAX: (209) 722-7690

QUINCY ENGINEERING

MERCED COUNTY

DIRECTOR OF PUBLIC WORKS
DANA S. HERTFELDER

□5□ SUBMITTAL
PLANS APPROVAL DATE

PROJECT MANAGER
R.C.E. NO. C47756

DATE SIGNED

REGISTERED PROFESSIONAL ENGINEER
Mark L. Reno
No. C47756
CIVIL
STATE OF CALIFORNIA

BURCHELL AVE OVER DUCK SLOUGH
TITLE SHEET

SHEET No.
T-1

CONTRACTOR SHALL POSSESS THE CLASS, (OR CLASSES)
OF LICENSE AS SPECIFIED IN THE "NOTICE TO CONTRACTORS"

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DIST	COUNTY	PROJECT	SHEET No.	TOTAL SHEETS
10	Mer	BURCHELL AVE BRIDGE OVER DUCK SLOUGH	9	32

☐5☐ SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER — GARRETT McLAUGHLIN — No. C67687 — Exp. — CIVIL — STATE OF CALIFORNIA

MERCED COUNTY

REVISIONS

	BY	DATE
DESIGN	GARRETT M	1-29-13
DRAWN	DCP	1-29-13
CHECKED	DES CHK	2-3-13

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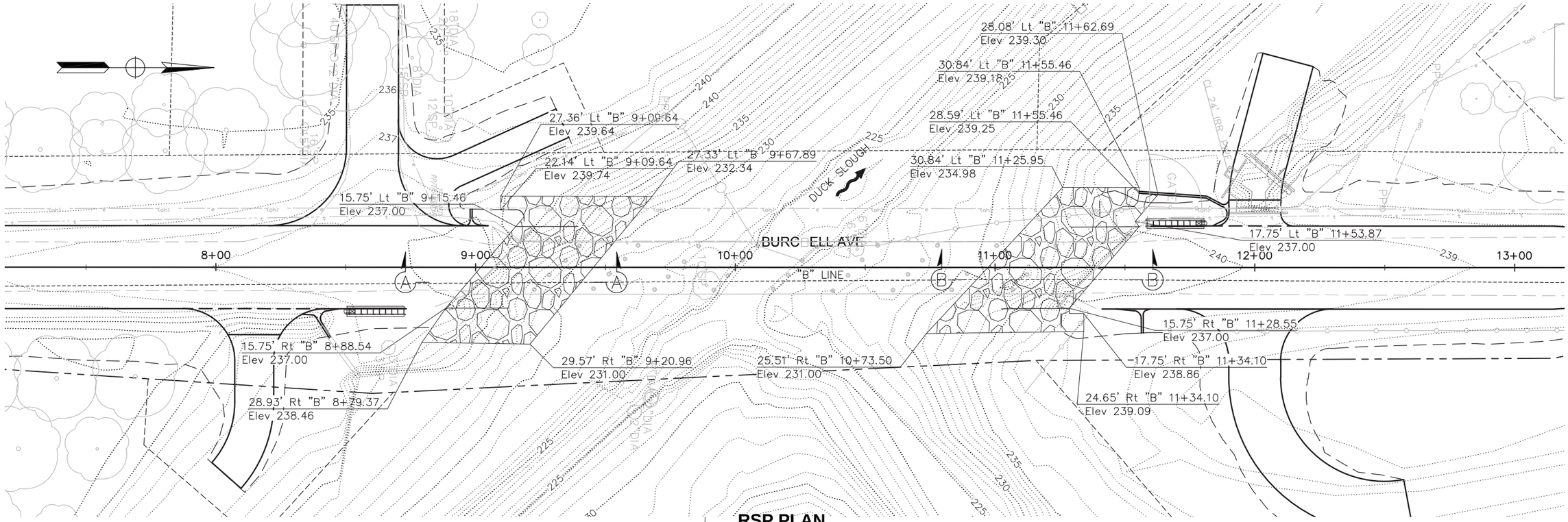

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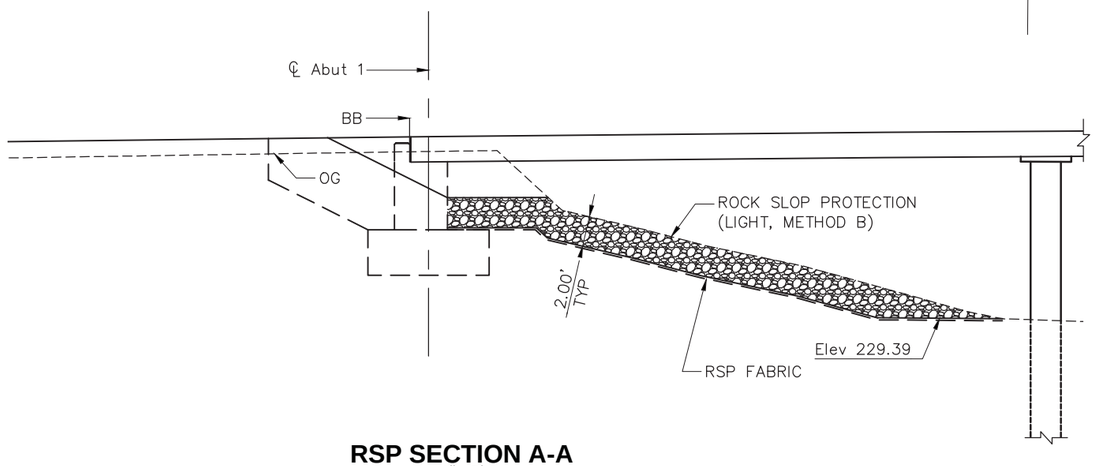

RSP SECTION A-A
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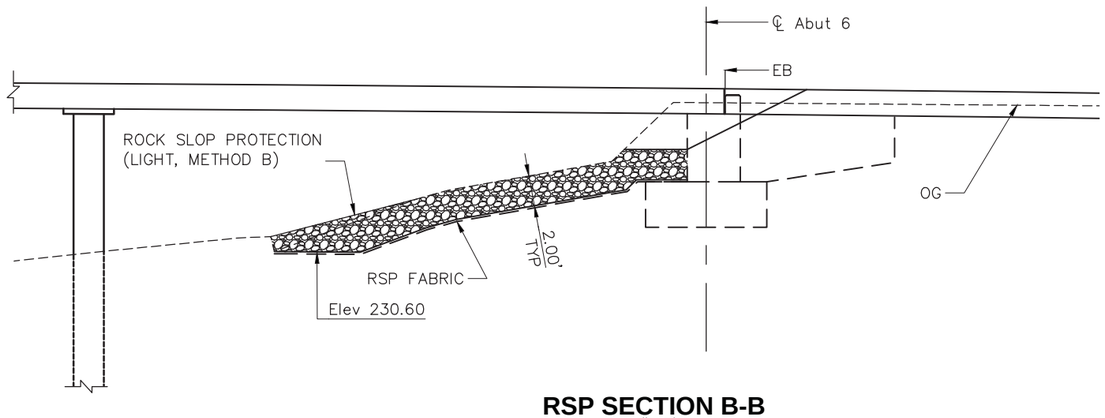

RSP SECTION B-B
1"=5'

MERCED COUNTY D.P.W.
Road Division
715 Martin Luther King Jr. Way
Merced, CA 95340-6041
Phone: (209) 385-7601
FAX: (209) 722-7690

QUINCY ENGINEERING

BURCHELL AVE OVER DUCK SLOUGH
CONSTRUCTION DETAILS

SHEET No.
C-☐

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NOTES

1. IMPORTED CLEAN CRUSHED ROCK WILL BE REMOVED OFFSITE OR INCORPORATED INTO PERMANENT ROADWAY FILL AFTER REMOVAL OF TEMPORARY SLOUGH DIVERSION.
2. AFTER REMOVAL OF TEMPORARY SLOUGH DIVERSION, BANKS TO BE RESTORED TO ORIGINAL CONDITIONS.
3. THIS PLAN ACCURATE FOR TEMPORARY SLOUGH DIVERSION ONLY.
4. EXACT LOCATIONS OF DIVERSION AND LOCATION OF PIPE CULVERTS TO BE DETERMINED AND APPROVED IN THE FIELD BY THE ENGINEER.

LEGEND

INDICATES NEW 48" CIDH PILE

INDICATES EXISTING PILES TO BE REMOVED

INDICATES TEMPORARY FILL AREA

DIST	COUNTY	PROJECT	SHEET No.	TOTAL SHEETS
10	Mer	BURCHELL AVE BRIDGE OVER DUCK SLOUGH	10	32

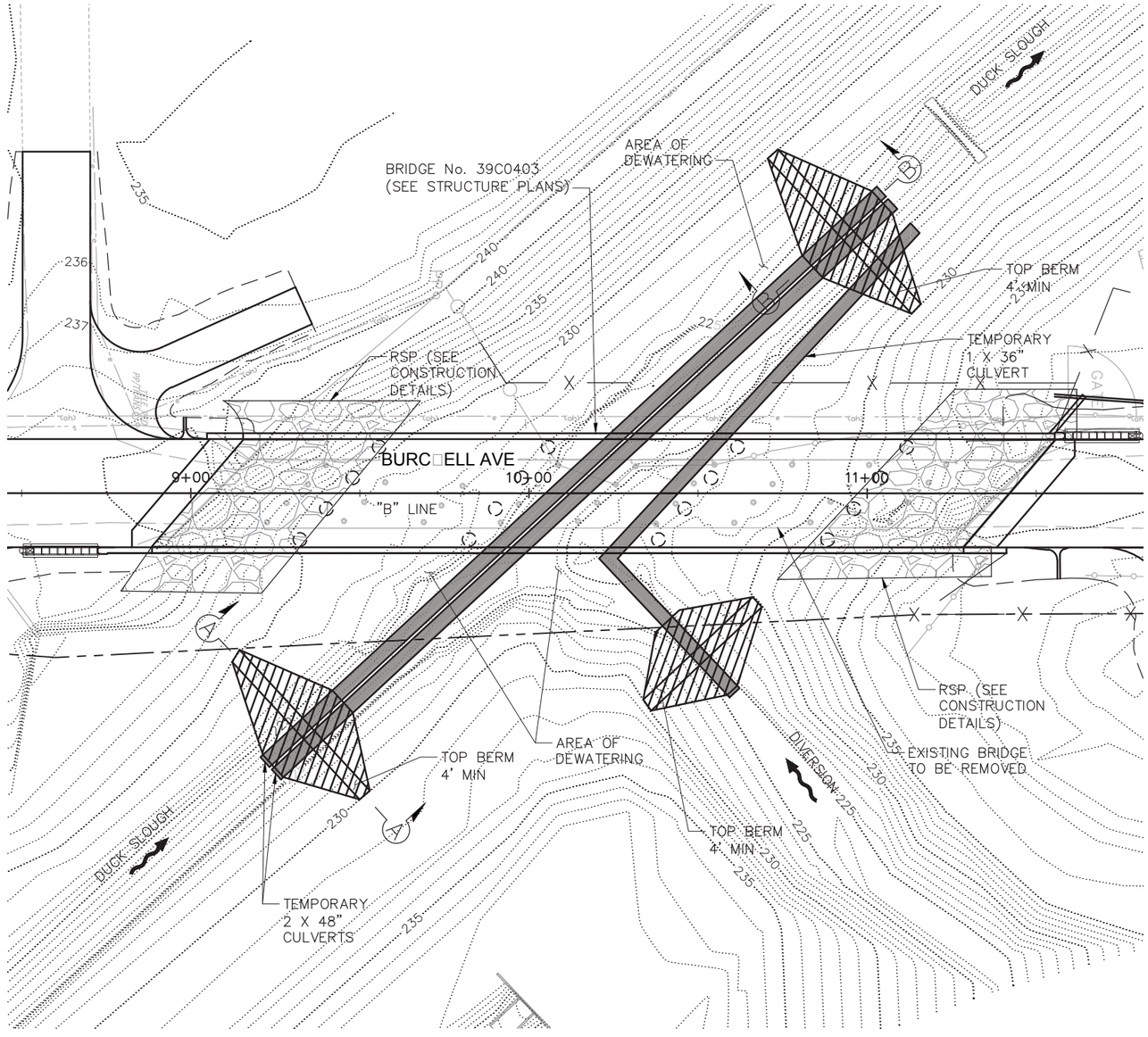
5 SUBMITTAL

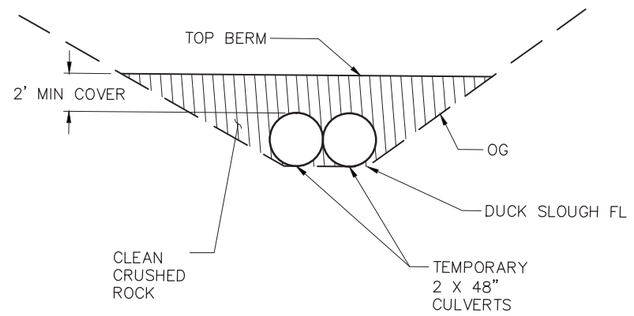
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

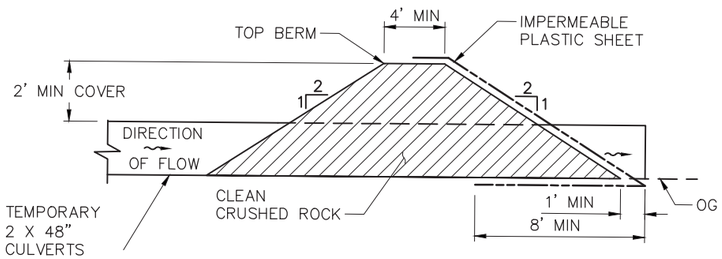
The County of Merced or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER — Garrett McLaughlin — No. C67687 — Exp. — CIVIL — STATE OF CALIFORNIA





SECTION A-A



SECTION B-B

DESIGN	BY	DATE	REVISIONS
DRAWN	GARRETT M		
CHECKED	DCP		
SCALE: 1"=20'	DES CHK		
M09213rtd001.dwg			

MERCED COUNTY

MERCED COUNTY D.□.□.
Road Division
715 Martin Luther King Jr. Way
Merced, CA 95340-6041
Phone: (209) 385-7601 FAX: (209) 722-7690

QUINCY ENGINEERING

BURCHELL AVE OVER DUCK SLOUGH
TEMPORARY SLOUGH DIVERSION

SHEET No.
TSD-1

1/9/2018 2:29 PM

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NOTES

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. ELEVATIONS SHOWN REFER TO THE TOP OF PIPE OR CONDUIT, UNLESS OTHERWISE NOTED.
3. UTILITY OWNERSHIP ON THE PROJECT OR AS SHOWN:

UTILITY CONTACTS		
UTILITY	REPRESENTATIVE CONTACT	PHONE NUMBER
PACIFIC GAS & ELECTRIC	STEVE MURPHY	(209) 726-6338
AT&T	ANTHONY DAVIS	(209) 726-7163

DIST	COUNTY	PROJECT	SHEET No.	TOTAL SHEETS
10	Mer	BURCHELL AVE BRIDGE OVER DUCK SLOUGH	14	32

5 SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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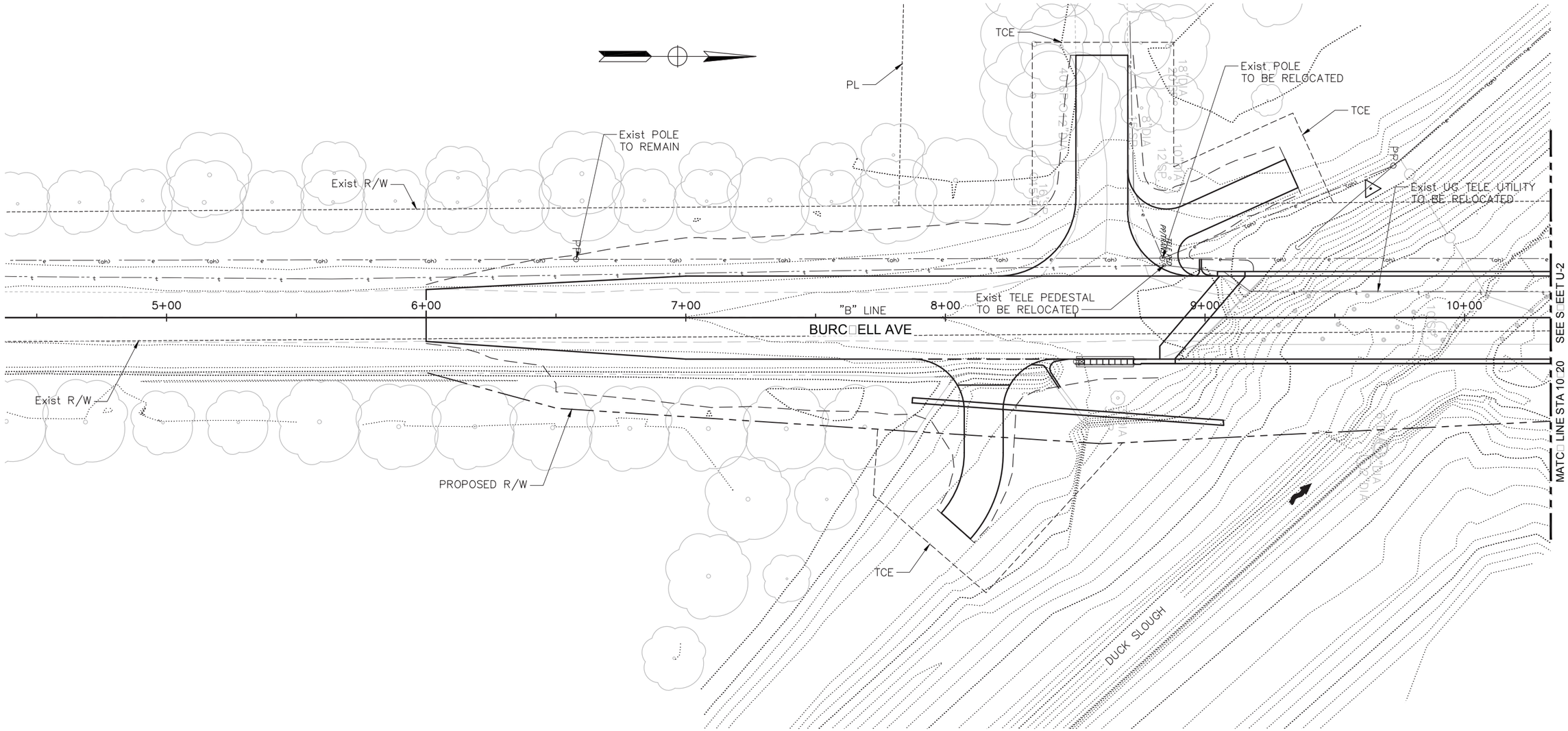
REGISTERED PROFESSIONAL ENGINEER
Garrett McLaughlin
No. C67687
Exp.
CIVIL
STATE OF CALIFORNIA



DESIGN BY GARRETT M
DRAWN DCP
CHECKED DES CHK
DATE
SCALE: 1" = 20'
M09213rka001.dwg

REVISIONS

MERCED COUNTY

MERCED COUNTY D.P.W.
Road Division
715 Martin Luther King Jr. Way
Merced, CA 95340-6041
Phone: (209) 385-7601 FAX: (209) 722-7690

QUINCY ENGINEERING

BURCHELL AVE OVER DUCK SLOUGH
UTILITY PLAN

SHEET No.
U-1

1/9/2018 2:31 PM

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DIST	COUNTY	PROJECT	SHEET No.	TOTAL SHEETS
10	Mer	BURCHELL AVE BRIDGE OVER DUCK SLOUGH	15	32

□5□ SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Garrett McLaughlin — No. C67687 — Exp. — CIVIL — STATE OF CALIFORNIA

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MERCED COUNTY

REVISIONS	DATE	BY

DESIGN GARRETT M
DRAWN DCP
CHECKED DES CHK
SCALE: 1"=20'
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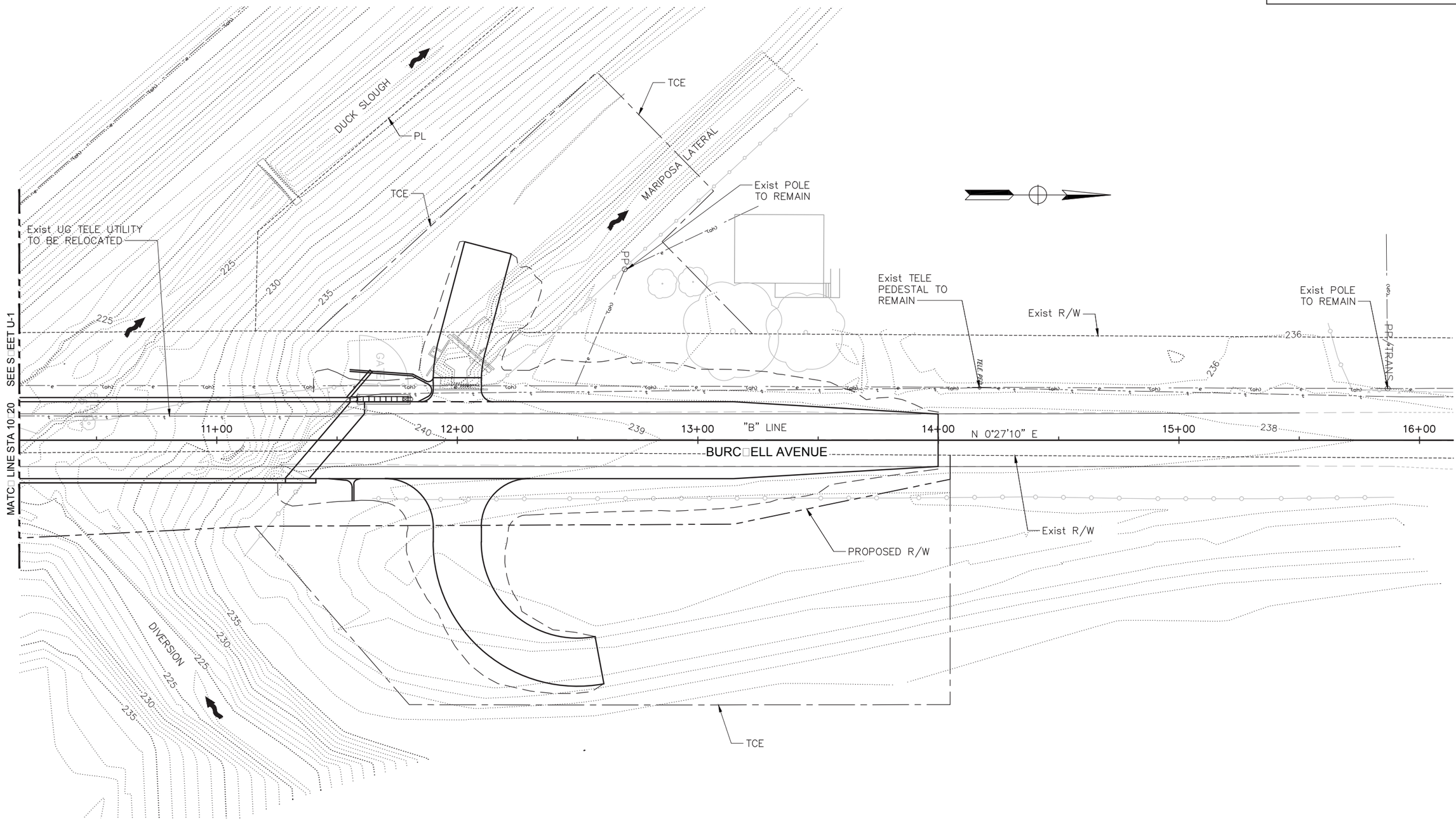

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Road Division
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Merced, CA 95340-6041
Phone: (209) 385-7601 FAX: (209) 722-7690

QUINCY ENGINEERING

BURCHELL AVE OVER DUCK SLOUGH
UTILITY PLAN

SHEET No.
U-2

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DIST	COUNTY	PROJECT	SHEET No.	TOTAL SHEETS
10	Mer	BURCHELL AVE BRIDGE OVER DUCK SLOUGH	1	

□5□ SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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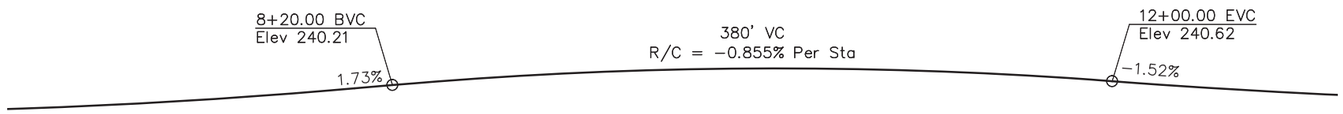
REGISTERED PROFESSIONAL ENGINEER — D. MOSSMAN — No. C70850 — Exp. 6/30/17 — CIVIL — STATE OF CALIFORNIA

MERCED COUNTY

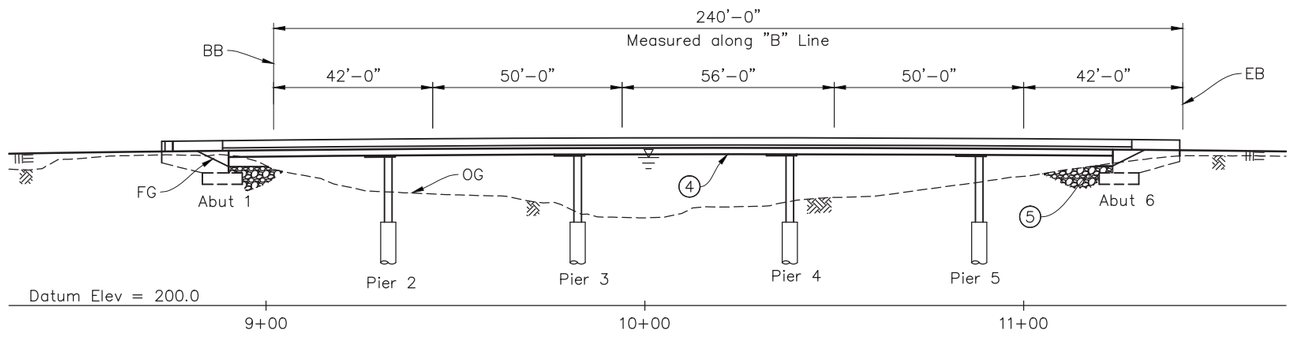
REVISIONS

BY	DATE
D. MOSSMAN	2/07/2014
R. KOTEY	2/07/2014

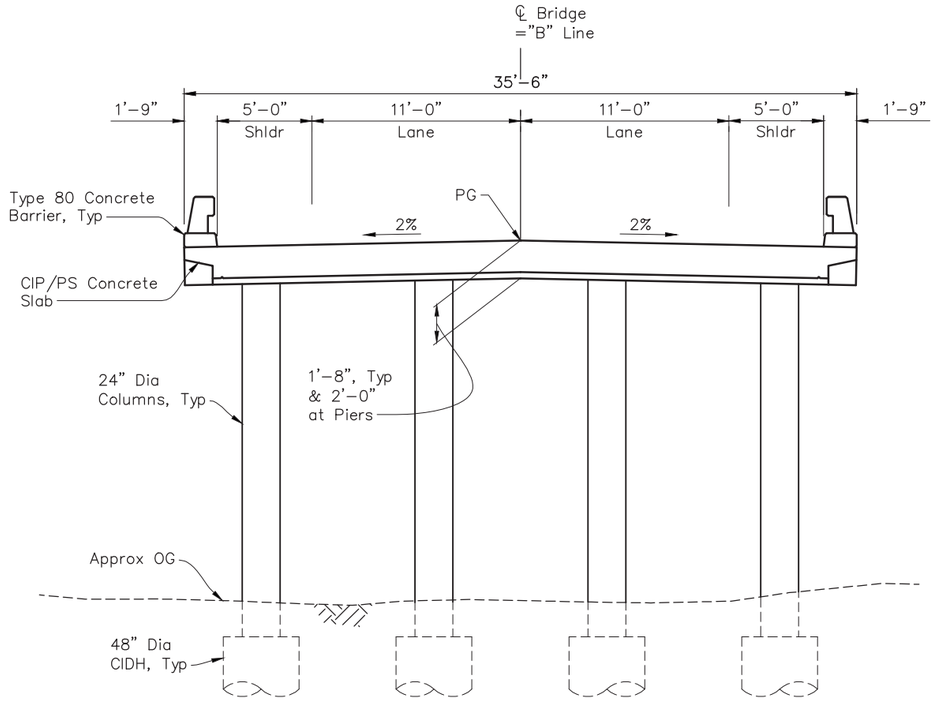
DESIGN
DRAWN
CHECKED
SCALE: AS SHOWN



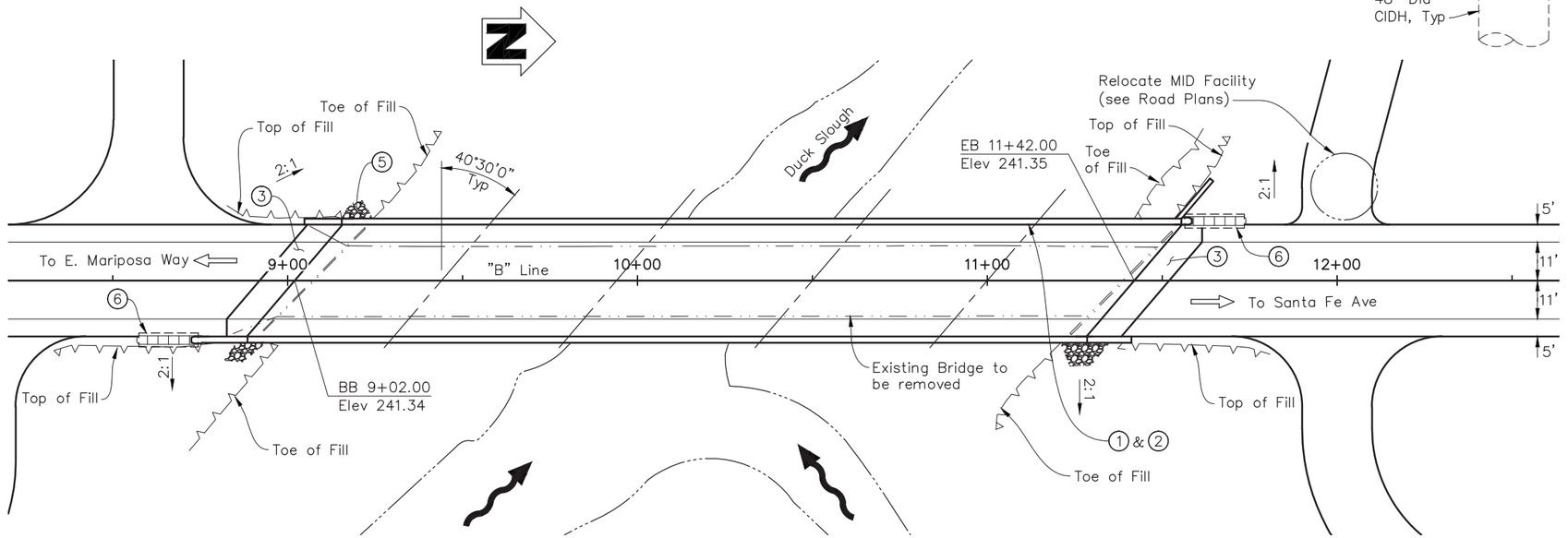
"B" LINE □ROFILE
No Scale



ELEVATION
1"=20'



T□□ICAL SECTION
1/4"=1'−0"



□LAN
1"=20'

Notes:

1. Paint "Duck Slough Bridge"
2. Paint "Bridge No. 39C−0403"
3. Structure Approach,Type EQ(10)
4. Max soffit elevation=240.3'
   Min soffit elevation=239.2"
5. RSP, see Road Plans
6. Quadguard System or equivalent, see "Road Plans"

Highwater elevation=239.0' (100 year shown)
Existing structure, to be removed
Direction of Flow

MERCED COUNT□ D.□.□.
Road Division
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Merced, CA 95340−6041
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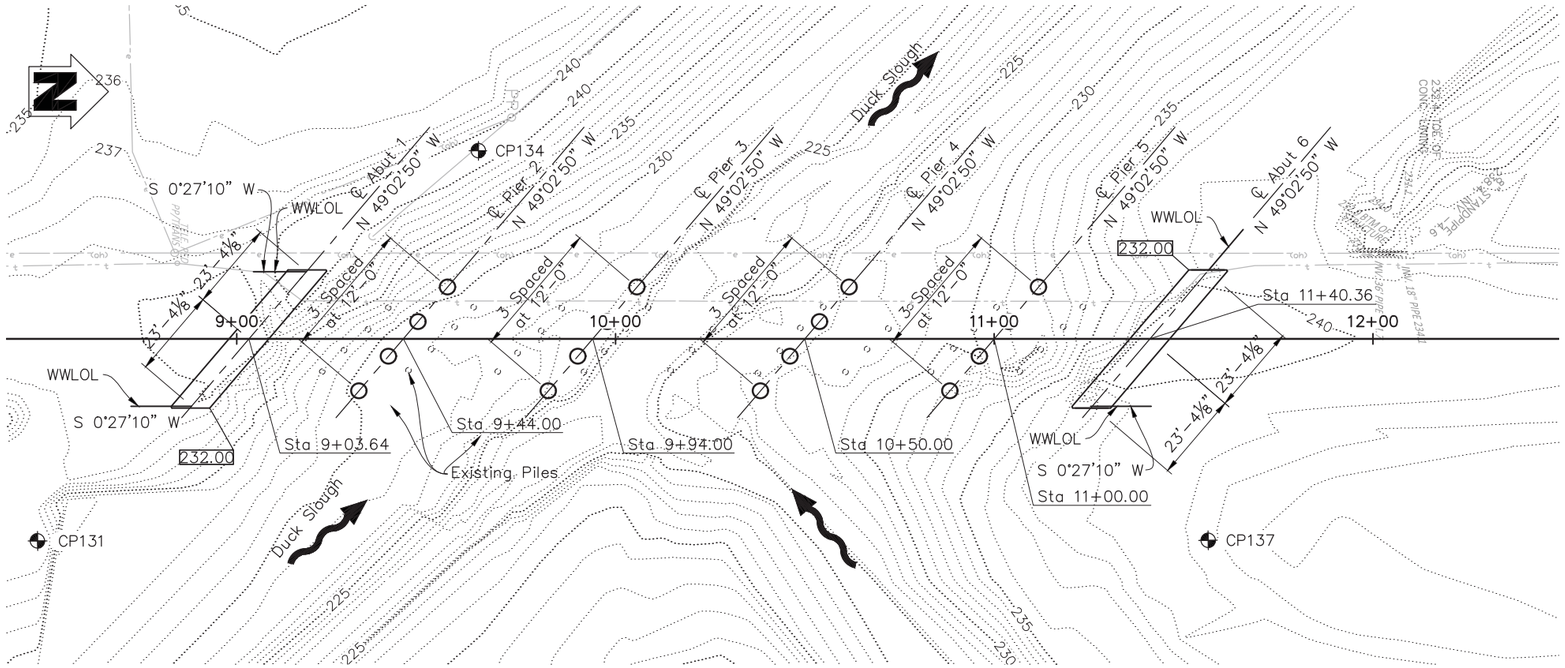
QUINCY ENGINEERING

BURCHELL AVE OVER DUCK SLOUGH
GENERAL PLAN

SHEET No.
B1 OF B14



□LAN
1"=20'

DIST	COUNTY	PROJECT	SHEET No.	TOTAL SHEETS
10	Mer	BURCHELL AVE BRIDGE OVER DUCK SLOUGH	3	

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
D. MOSSMAN
No. C70850
Exp. 6/30/17
CIVIL
STATE OF CALIFORNIA

MERCED COUNTY

REVISIONS	BY	DATE
	D. MOSSMAN	2/07/2014
	R. KOTEY	2/07/2014

DESIGN
DRAWN
CHECKED
SCALE: AS SHOWN

Legend:

- XX.X — Indicates bottom of footing elevation
- Indicates Pile
- Indicates Existing Pile
- Denotes benchmark locations

□ILE DATA TABLE

LOCATION	PILE TYPE	Cutoff Elev. (ft)	LRFD Service–I Limit State Load per support (kips)		LRFD Service–I Limit State Total Load (kips) per pile (compression)	Nominal Resistance (kips)	Design Tip Elevations (ft)	Specified Tip Elevation (ft)
			Total	Permanent				
Pier 2	48" CIDH Concrete Pile	222.0	xx	xx	xx	xx	xx(a); xx(b)	xx
Pier 3	48" CIDH Concrete Pile	222.0	xx	xx	xx	xx	xx(a); xx(b)	xx
Pier 4	48" CIDH Concrete Pile	222.0	xx	xx	xx	xx	xx(a); xx(b)	xx
Pier 5	48" CIDH Concrete Pile	222.0	xx	xx	xx	xx	xx(a); xx(b)	xx

Notes: 1. Design Tip Elevations are controlled by: (a) Compression, (b) Lateral Loads
2. The specified tip elevation shall not be raised

LOAD AND RESISTANCE FACTOR DESI□N S□READ FOOTIN□ DATA TABLE

LOCATION	NET PERMISSABLE CONTACT STRESS (SERVICE) (SETTLEMENT) ksf	FACTORED GROSS NOMINAL BEARING RESISTANCE (RESISTANCE FACTOR=0.45) (STRENGTH) ksf	FACTORED GROSS NOMINAL BEARING RESISTANCE (RESISTANCE FACTOR=1.00) (EXTREME EVENT) ksf
Abut 1	6.7	5.8	12.9
Abut 6	6.7	5.8	12.9

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

HYDROLOGIC SUMMARY

Drainage area: XXX.X Square Miles

	Design Flood	Base Flood
Frequency (years)	100	50
Discharge (cubic feet per second)	13,650	11,020
Water Surface Elev at Bridge (ft)	239.0	238.7

Flood plain data based upon information available when the plans were prepared and are shown to meet Federal requirements. The accuracy of said information is not warranted by the County and interested or affected parties should make their own investigations.

BENCHMARK DATA

NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
CP131	9731.40	10071.62	238.23	CP REBAR
CP134	9848.60	9969.57	240.75	CP REBAR
CP137	10040.42	10073.91	238.29	CP REBAR

For benchmark locations outside of the plan limits shown above, see ROAD PLANS

MERCED COUNTY D.P.W.
Road Division
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Merced, CA 95340-6041
Phone: (209) 385-7601 FAX: (209) 722-7690

QUINCY ENGINEERING

BURCHELL AVE OVER DUCK SLOUGH
FOUNDATION PLAN

SHEET No.
B3 OF B14

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Profile Output Table - Standard Table 1

File Options Std. Tables User Tables Locations Help

HEC-RAS River: Duck Slough Reach: reach1 Profile: USACE OM

Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
reach1	1910.505	USACE O&M	Existing	1250.00	224.93	232.83		233.03	0.001910	3.58	349.24	104.66	0.35
reach1	1910.505	USACE O&M	Proposed	1250.00	224.93	232.79		233.00	0.001959	3.62	345.51	103.85	0.35
reach1	1508.964	USACE O&M	Existing	1250.00	223.97	232.31		232.52	0.002022	3.69	338.33	100.22	0.35
reach1	1508.964	USACE O&M	Proposed	1250.00	223.97	232.25		232.47	0.002125	3.76	332.49	99.56	0.36
reach1	1273.307	USACE O&M	Existing	1250.00	222.82	231.62		231.92	0.003154	4.44	281.70	88.15	0.44
reach1	1273.307	USACE O&M	Proposed	1250.00	222.82	231.50		231.83	0.003444	4.60	271.60	85.91	0.46
reach1	1065.584	USACE O&M	Existing	1250.00	221.55	231.32	228.19	231.45	0.001387	2.93	426.84	132.05	0.29
reach1	1065.584	USACE O&M	Proposed	1250.00	221.55	231.24	227.99	231.36	0.001268	2.77	450.76	142.44	0.27
reach1	1007.453			Bridge									
reach1	952.7859	USACE O&M	Existing	1250.00	223.04	231.08		231.23	0.001209	3.09	404.42	107.27	0.28
reach1	952.7859	USACE O&M	Proposed	1250.00	223.04	231.07		231.20	0.001035	2.86	436.95	116.11	0.26
reach1	735.9084	USACE O&M	Existing	1250.00	221.78	230.38		230.76	0.003248	4.95	252.56	68.29	0.45
reach1	735.9084	USACE O&M	Proposed	1250.00	221.78	230.38		230.76	0.003248	4.95	252.56	68.29	0.45
reach1	475.5062	USACE O&M	Existing	1250.00	221.73	229.74		230.02	0.002292	4.27	292.97	77.01	0.39
reach1	475.5062	USACE O&M	Proposed	1250.00	221.73	229.74		230.02	0.002292	4.27	292.97	77.01	0.39
reach1	89.69306	USACE O&M	Existing	1250.00	220.56	228.72	226.36	229.09	0.002508	4.89	255.64	56.70	0.41
reach1	89.69306	USACE O&M	Proposed	1250.00	220.56	228.72	226.36	229.09	0.002508	4.89	255.64	56.70	0.41

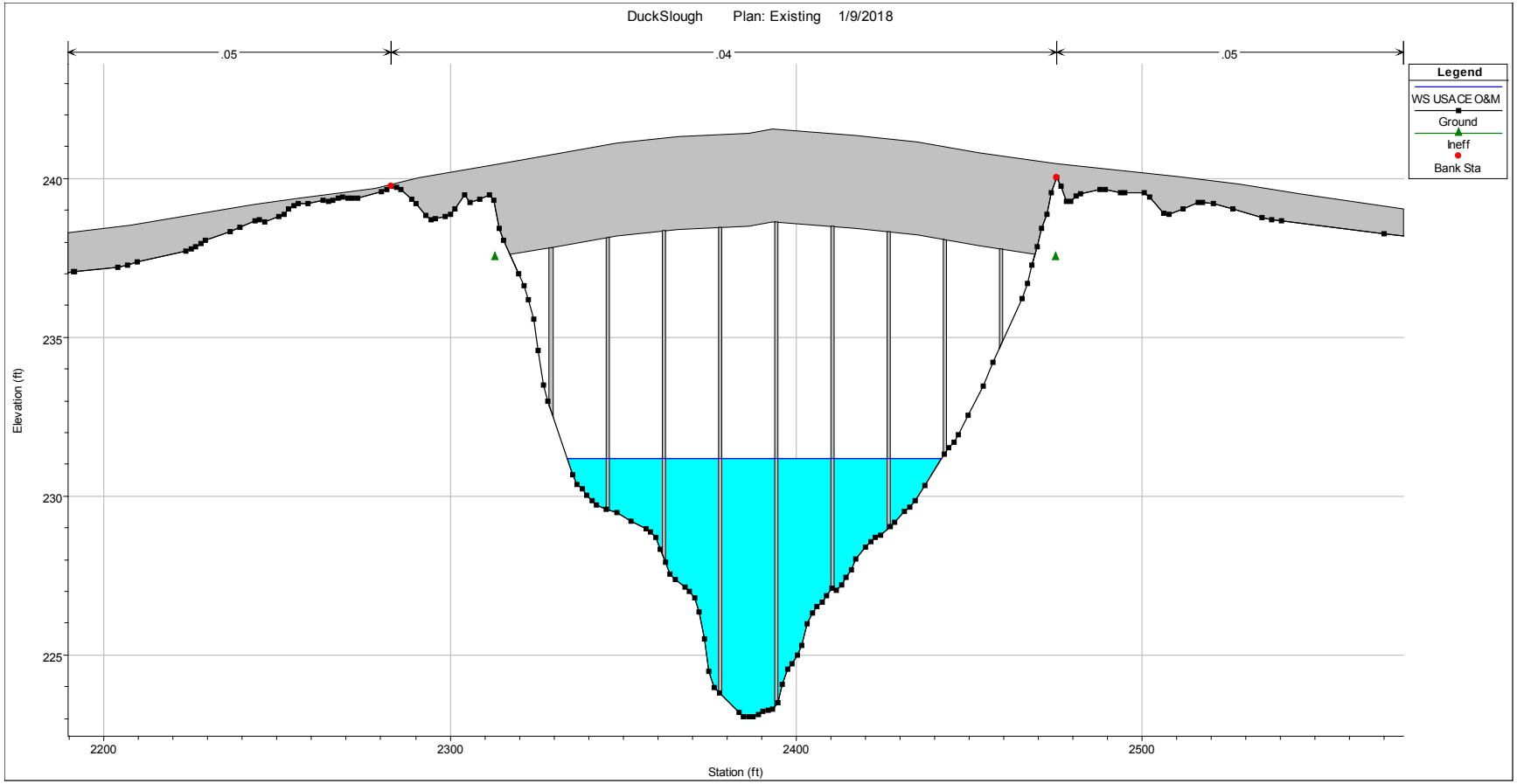
Profile Output Table - Six XS Bridge

File Options Std. Tables User Tables Locations Help

HEC-RAS River: Duck Slough Reach: reach1 Profile: USACE OM

Reach	River Sta	Profile	Plan	E.G. Elev	W.S. Elev	Crit W.S.	Frctn Loss	C & E Loss	Top Width	Q Left	Q Channel	Q Right	Vel Chnl
				(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(cfs)	(cfs)	(cfs)	(ft/s)
reach1	1273.307	USACE O&M	Existing	231.92	231.62		0.42	0.05	88.15		1250.00		4.44
reach1	1273.307	USACE O&M	Proposed	231.83	231.50		0.41	0.06	85.91		1250.00		4.60
reach1	1065.584	USACE O&M	Existing	231.45	231.32	228.19	0.04	0.01	132.05		1250.00		2.93
reach1	1065.584	USACE O&M	Proposed	231.36	231.24	227.99	0.03	0.01	142.44		1250.00		2.77
reach1	1007.453BR U	USACE O&M	Existing	231.41	231.25	228.33	0.06	0.00	123.54		1250.00		3.19
reach1	1007.453BR U	USACE O&M	Proposed	231.32	231.18	228.03	0.04	0.00	134.02		1250.00		2.96
reach1	1007.453BR D	USACE O&M	Existing	231.34	231.18	227.94	0.10	0.01	102.14		1250.00		3.21
reach1	1007.453BR D	USACE O&M	Proposed	231.28	231.15	227.67	0.08	0.00	110.81		1250.00		2.94
reach1	952.7859	USACE O&M	Existing	231.23	231.08		0.40	0.07	107.27		1250.00		3.09
reach1	952.7859	USACE O&M	Proposed	231.20	231.07		0.37	0.08	116.11		1250.00		2.86
reach1	735.9084	USACE O&M	Existing	230.76	230.38		0.71	0.03	68.29		1250.00		4.95
reach1	735.9084	USACE O&M	Proposed	230.76	230.38		0.71	0.03	68.29		1250.00		4.95

Existing Bridge



Proposed Bridge