

**Meeting of the Central Valley Flood Protection Board
August 22, 2014**

Staff Report

**Sutter County Development Services Department
Brewer Road Culvert Crossing Replacement, Sutter County**

1.0 – REQUESTED ITEM

Consider approval to replace a three-pipe culvert crossing at Coon Creek (Attachment A) by Draft Permit No. 18971 (Attachment B).

2.0 – APPLICANT

Sutter County Development Services Department

3.0 – PROJECT LOCATION

The project is located slightly south of the intersection of Hicks Road and Brewer Road approximately five miles east of State Route 99 in Rio Oso and crosses Coon Creek in Sutter County (Attachment A).

4.0 – PROJECT DESCRIPTION

Sutter County proposes to replace three existing 10.67 feet wide by 6.9 feet tall corrugated metal arch pipes and place engineering fill, asphalt paving, rock slope protection (RSP), and concrete headwalls on both sides of the rehabilitated crossing to minimize scour and future culvert failure.

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
- § 11, Variances
- § 13, Evidentiary Hearings
- § 108, Existing Encroachments

- § 112, Streams Regulated and Nonpermissible Work Periods
- § 116, Borrow and Excavation Activities – Land and Channel
- § 121, Erosion Control
- § 128, Bridges

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 9, 2014 for this application. The letter indicates 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 is incorporated into the permit as Exhibit A.

7.0 – PROJECT ANALYSIS

7.1 – Project Background

Sutter County is proposing to rehabilitate the failed Brewer Road crossing over Coon Creek. The existing structure is made up of three pipe culverts, described in Section 4.0; which have failed causing public access closure in December of 2012 (see Project Photos in Attachment C). Preliminary engineering and design were subsequently commenced to complete rehabilitation as quickly as possible. The county hopes to complete the project prior to the October 1, 2014 end of the Giant Garter Snake habitat construction activity window.

7.2 – Hydraulic Summary

HEC-RAS version 4.1 hydraulic modeling software was used to model Coon Creek at a 100-year flow of 18,058 cubic-feet per second. The proposed project reflects an in-kind replacement (Attachment D) and therefore the water surface elevation (WSE) is relatively unchanged from pre- to post-project conditions. The pre-project WSE is 75.25 feet and the post-project condition is 75.23 feet, resulting in a predicted reduction in WSE of 0.02 feet.

The creek crossing and surrounding roadways are completely inundated in a 100-year event at both pre-and post-project conditions with the crossing submerged by approximately 4.25 feet. Approximately only ten percent of the design flow is contained within the banks of Coon Creek, which means that approximately ninety percent of the flow jumps the creek banks and sheet flows across the adjacent

fields. This county road crossing and portions of the access roadways would be closed during a 100-year flood event.

Based on the hydraulic analysis provided with the application Board staff has determined that the proposed project is expected to result in no adverse hydraulic impacts to the Coon Creek channel or floodway because it will not increase the 100-year WSE, and it will not adversely affect the already inundated surrounding area. A functioning culvert crossing would allow flows to pass, would promote local drainage in the vicinity, and would reduce the level of public safety risk.

7.3 – Geotechnical Summary

Board staff has reviewed geotechnical information provided in the application and has determined that the proposed project is expected to result in no adverse geotechnical impacts to the Coon Creek channel or floodway.

All fill, excavation, RSP, and temporary structures will be completed in compliance with Draft Permit No. 18971 and Title 23 technical standards, with the exception of the variance described in Section 7.4.

7.4 – Project Variance

In accordance with Title 23, § 11(a) and (b), Variances, Dokken Engineering (on behalf of Sutter County) is requesting a variance from Title 23, § 128(a)(10)(A) which requires three feet of freeboard above the design WSE for bridge crossings.

Dokken Engineering made this variance request pursuant to Title 23, § 11(b) as a result of their determination that the Board's standards are not appropriate for the proposed project. In order to meet Board standards Dokken has determined that if a traditional bridge structure were proposed it would need to be constructed over seven feet above the existing road surface elevation, with raised approach roadways extending over a mile in length, which would still not address all the area's accessibility issues during a design flood event. Dokken's position is that due to the site's rural setting, the lack of existing flood protection measures in the area, and the absence of adverse impacts on the surrounding countryside, that compliance with Board standards is not appropriate for this crossing.

Board staff has determined that Dokken Engineering has provided sufficient justification for the proposed variance to Board's standards, and concurs with the submitted request letter (Attachment E). Staff also recognizes that culvert crossings are inherently different in nature than traditional bridges. Also, in areas where ninety percent of the design flow is out of bank and inundates the

surrounding area, large roadside raises that may be required for accessibility and standards to be met are not only a large financial burden on rural areas but also may inadvertently cause hydraulic issues by creating blockages of the natural overland flow. The crossing is currently closed and is a risk to public safety and the proposed rehabilitation will improve accessibility and safety for the area with no adverse hydraulic impacts.

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 Initial Study/Mitigated Negative Declaration (IS/MND) (SCH Number: 2014012010, January 2014), and Mitigation Measures for the Brewer Road Bridge Replacement Project prepared by the lead agency, Sutter County. These documents, including project design, may be viewed or downloaded from the Central Valley Flood Protection Board website at <http://www.cvfpb.ca.gov/meetings/2014/08-22-2014.cfm> under a link for this agenda item. These documents are also available for review in hard copy at the Board and the Sutter County offices.

Sutter County determined that the project would not have a significant effect on the environment on June 13, 2014 and filed a Notice of Determination on June 16, 2014 with the Sutter 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 air quality, biological resources, cultural resources, hazardous materials, hydrology and water quality, and noise. The description of the mitigation measures are further described in the adopted IS/MND.

The documents and other materials which constitute the record of the Central Valley Flood 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, 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. 18971 and all supporting hydraulic and other technical documentation provided in the project application.

- The best available science that related to the scientific issues presented by the executive officer, legal counsel, the Department 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. On the important issue of hydraulic impacts Dokken Engineering used the HEC-RAS one-dimensional flow model. The model is considered by many experts as the best available scientific tool for the purpose of modeling stream hydraulics for this region. All analyses provided adhere with industry standard methods and the project is compliant with State and federal standards, with the exception of the need for a proposed variance as discussed in Section 7.4, herein.

- 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 has no adverse effect 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 there is no incremental increase in water surface elevation or velocities anticipated for the proposed project.

In regards to the proposed variance discussed in Section 7.4, the project is located on rural agricultural lands with no existing or currently planned flood protection measures.

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

Dokken Engineering has reviewed Sutter County's General Plan, has researched any proposed projects in the vicinity of the proposed project, and has determined that there are no anticipated future projects that would impact the crossing replacement. Staff also is not aware of any projects that would impact this crossing rehabilitation.

10.0 – STAFF RECOMMENDATION

Board staff recommends that the Board:

- adopt the CEQA findings;
- approve the requested variance to Title 23 § 128(a)(10)(A) pursuant to § 11(b), as summarized in Section 7.4 herein,
- approve Draft Encroachment Permit No. 18971 (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 Maps

B – Draft Permit No. 18971

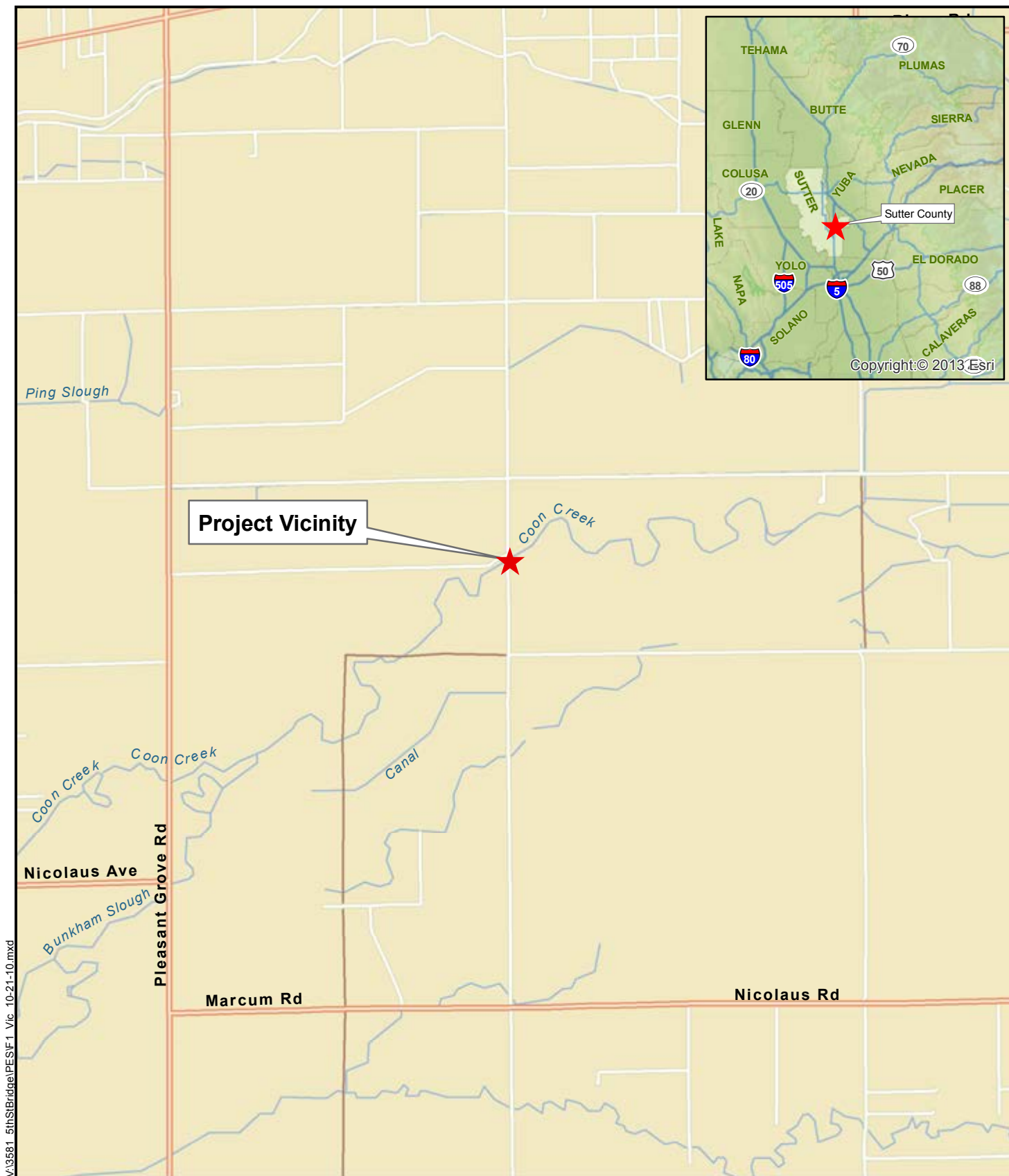
Exhibit A – USACE Non-Fed Letter (dated August 9, 2014)

C – Project Photos

D – Project Design Plans

E – Variance Request Letter (dated August 6, 2014)

Prepared by:	Nancy Moricz, PE, Senior Engineer
Document Review:	Andrea Buckley, Senior Environmental Scientist
	Eric Butler, PE, Planning Branch Chief
	Len Marino, PE, Chief Engineer
Legal Review	Leslie Gallagher, Chief Counsel / Acting Executive Officer



Source: ESRI Maps 2013; Dokken Engineering 11/12/2013; Created By: J. Hovis



0 0.5 1 1.5 2 Miles

FIGURE 1
PROJECT VICINITY

Brewer Road Bridge Over Coon Creek Replacement Project
Sutter County, California



FIGURE 2
Project Location

Brewer Road Bridge Over Coon Creek Replacement Project
Sutter County, California

DRAFT

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

PERMIT NO. 18971 BD

This Permit is issued to:

Sutter County
1130 Civic Center Boulevard
Yuba City, California 95993

To replace three existing 10.67 feet wide by 6.9 feet tall corrugated metal arch pipes and place engineering fill, asphalt paving, rock slope protection (RSP), and concrete headwalls on both sides of the rehabilitated crossing to minimize scour and future culvert failure.

The project is located slightly south of the intersection of Hicks Road and Brewer Road approximately five miles east of State Route 99 in Rio Oso and crosses Coon Creek in Sutter County. (Section 32, T13N, R5E, MDB&M, Coon Creek, Sutter 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. 18971 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 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 Central Valley Flood Protection Board, the Department of Water Resources, 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 Central Valley Flood Protection Board, the Department of Water Resources, and their respective officers, agents, employees, successors and assigns, safe and harmless, of and from all claims and damages related to the Central Valley Flood Protection Board's approval of this permit, including but not limited to claims filed pursuant to the California Environmental Quality Act. The Central Valley Flood Control Board and the Department of Water Resources expressly reserve the right to supplement or take over their defense,

in their 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 Central Valley Flood Protection Board, the Department of Water Resources, and their respective officers, agents, employees, successors and assigns, 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 Central Valley Flood Control Board and the Department of Water Resources expressly reserve the right to supplement or take over their defense, in their sole discretion.

SEVENTEEN: The Central Valley Flood Protection Board and Department of Water Resources 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.

BOARD CONTACTS

EIGHTEEN: The permittee shall contact the Board by telephone at (916) 574-0609, and the Board's Construction Supervisor at (916) 651-1299 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.

PERMITTING AND AGENCY CONDITIONS

NINETEEN: The U.S. Army Corps of Engineers' District Engineer has no comments or recommendations regarding flood control because the proposed work does not affect a federally constructed project, as stated in their letter dated August 9, 2014, which is attached to this permit as Exhibit A and is incorporated by reference.

TWENTY: The permittee should contact the U.S. Army Corps of Engineers, Sacramento District, Regulatory Branch, 1325 J Street, Sacramento, California 95814, telephone (916) 557-5250, as compliance with Section 10 of the Rivers and Harbors Act and/or Section 404 of the Clean Water Act may be required.

TWENTY-ONE: The permittee agrees to incur all costs for compliance with local, State, and federal permitting and resolve conflicts between any of the terms and conditions that agencies might impose under the laws and regulations they administer and enforce.

TWENTY-TWO: If the permittee does not comply with the conditions of this 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.

PRE-CONSTRUCTION

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

TWENTY-FOUR: 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 Central Valley Flood Protection Board within thirty (30) calendar days of beginning the project.

TWENTY-FIVE: No construction work of any kind shall be done during the flood season from November 1st to April 15th without prior approval of the Central Valley Flood Protection Board.

TWENTY-SIX: Thirty (30) calendar days prior to the start of any demolition and / or construction activities within the floodway, the permittee shall submit to the Board's Chief Engineer two sets of detailed plans and specifications and supporting geotechnical and / or hydraulic impact analyses, for any and all temporary or in channel work that may have an impact during the flood season from November 1 through April 15. The Board may request additional information as needed and will seek comment from the U.S. Army Corps of Engineers 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-SEVEN: 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 Central Valley Flood Protection Board.

TWENTY-EIGHT: All addenda and contract change orders made to the approved plans and / or specifications by the permittee after 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 will seek comment from the U.S. Army Corps of Engineers 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-NINE: All debris generated by this project shall be disposed outside of Coon Creek.

THIRTY: No material stockpiles, temporary buildings, or equipment shall remain in the floodway during the flood season from November 1 to April 15.

THIRTY-ONE: The abandoned or dismantled crossing shall be completely removed and disposed of outside the floodway.

THIRTY-TWO: The method and schedule of removing the bridge shall be approved by the Central Valley Flood Protection Board prior to start of work.

THIRTY-THREE: Revetment shall be uniformly placed and properly transitioned into the bank, levee slope, or adjacent revetment and in a manner which avoids segregation.

THIRTY-FOUR: The recommended minimum thickness of revetment, measured perpendicular to the

bank or levee slope is 18 inches below the usual water surface and 12 inches above the usual water surface.

THIRTY-FIVE: The revetment shall not contain any reinforcing steel, floatable, or objectionable material. Asphalt or other petroleum-based products may not be used as fill or erosion protection on the levee section or within the floodway.

THIRTY-SIX: Backfill material for excavations within the bank 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 per ASTM Method D1557-91 and above optimum moisture content.

THIRTY-SEVEN: At least two (2) feet of cover above the culverts shall be provided at the crossing.

THIRTY-EIGHT: The fill surface areas shall be graded to direct drainage away from the toe of the bank.

THIRTY-NINE: Density tests by a certified materials laboratory will be required to verify compaction of backfill within Coon Creek.

FORTY: 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.

FORTY-ONE: The permittee shall be responsible for all damages due to settlement, consolidation, or heave from any construction-induced activities.

VEGETATION / ENVIRONMENTAL MITIGATION

FORTY-TWO: Fill placed at slopes greater than two (2) horizontal to one (1) vertical without bank slope revetment shall be seeded with a native grass mix to reduce the risk of erosion.

FORTY-THREE: Cleared trees and brush 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 1 to April 15.

FORTY-FOUR: In the event that levee or bank erosion injurious to facilities of the State Plan of Flood Control occurs at or adjacent to and 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.

POST-CONSTRUCTION

FORTY-FIVE: The permittee shall be responsible for repair of any damages to Coon Creek due to construction, operation, or maintenance of the proposed project.

FORTY-SIX: Within 120 days of completion of the project, the permittee shall submit to the Central Valley Flood Protection 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 the Central Valley Flood Protection Board permit conditions and submitted drawings and specifications.

OPERATIONS AND MAINTENANCE

FORTY-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, Department of Water Resources, or any other agency responsible for maintenance.

FORTY-EIGHT: If the crossing 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.

FORTY-NINE: If the permitted structure results in any adverse hydraulic impact or scouring the permittee shall provide appropriate mitigation measures subject to review and approval of the Central Valley Flood Protection Board.

FIFTY: All debris that may accumulate around the crossing within Coon Creek shall be completely removed from the floodway following each flood season.

FIFTY-ONE: The permitted encroachment(s) shall not interfere with the flood conveyance capability of Coon Creek. 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) under direction of the Central Valley Flood Protection Board or Department of Water Resources. If the permittee does not comply, the Central Valley Flood Protection Board may modify or remove the encroachment(s) at the permittee's expense.

PROJECT ABANDONMENT, CHANGE IN PLAN OF FLOOD CONTROL

FIFTY-TWO: If the project, or any portion thereof, is to be abandoned in the future, the permittee shall abandon the project under direction of the Central Valley Flood Protection Board and Department of Water Resources, at the permittee's cost and expense.

FIFTY-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 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



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

Flood Protection and Navigation Section (18971)

AUG 09 2014

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

Dear Ms. Gallagher:

We have reviewed a permit application by Sutter County (application number 18971). This project includes rehabilitation of the Brewer Road bridge by removal and replacement of three existing metal pipe culverts crossing Coon Creek. The work also includes placing rock slope protection on both sides of the rehabilitated crossing. The project is located 5 miles east of State Route 99, just slightly south of the intersection of Hicks Road and Brewer Road, at 38.934100°N 121.451856°W NAD83, Sutter County, California.

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

A file (SPK-2014-00061) has been opened because a Section 10 and/or Section 404 permit may be required. Please advise the applicant to contact the U.S. Army Corps of Engineers, Sacramento District, Regulatory Division, 1325 J Street, Room 1350, Sacramento, California 95814, telephone (916) 557-5250.

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 black ink, appearing to read "Ryan Larson", is written over a horizontal line.

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



Photo 1: Brewer Road Looking South—May 2013



Photo 2: Coon Creek Looking Northeast—May 2013



Photo 3: Coon Creek Looking Northwest—May 2013



Photo 4: Brewer Rd Looking South – October 2011



Photo 5: Brewer Rd Looking South – April 2013



Photo 6: Coon Creek Looking West – October 2011



Photo 7: Coon Creek Looking Northwest – May 2013



Photo 8: Brewer Rd – Western Pipe Collapse – March 2010



Photo 9: Brewer Rd – Western Pipe Collapse – March 2010



Photo 10: Brewer Rd – Western Pipe Collapse – March 2010



Photo 11: Brewer Rd Looking South – April 2012



Photo 12: Brewer Rd Looking South – April 2013

INDEX OF SHEETS

SHEET NO.	
1	TITLE SHEET
2	TYPICAL SECTIONS, GENERAL NOTES
3	PLAN AND PROFILE
4	STAGE CONSTRUCTION PLAN
5	CONSTRUCTION DETAILS

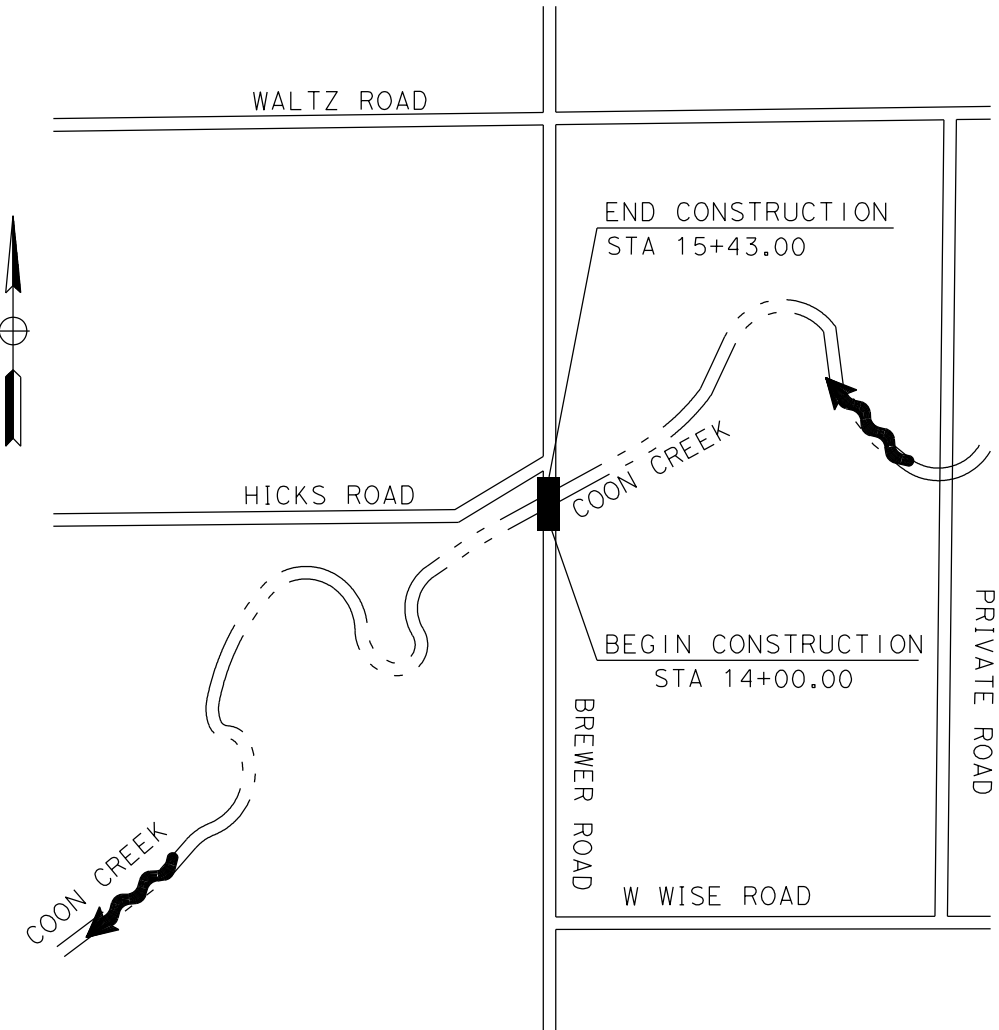
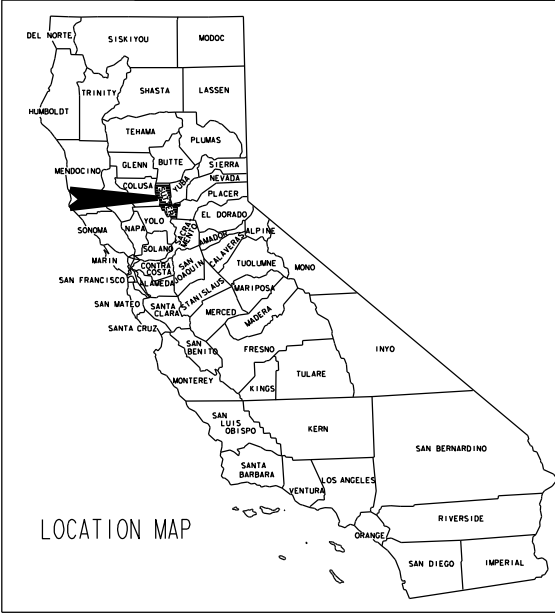
COUNTY OF SUTTER

IN THE
STATE OF CALIFORNIA

DEVELOPMENT SERVICES DEPARTMENT
PLANS FOR CONSTRUCTION OF BREWER ROAD / COON CREEK CROSSING
ON BREWER ROAD
IN SUTTER COUNTY

To be supplemented by the California Department of Transportation Standard Specifications and Standard Plans dated May, 2010.

DOKKEN
ENGINEERING
110 Blue Ravine Road, Suite 200
Folsom, CA 95630
Ph: 916-858-0642 Fax: 916-858-0643



PROJECT LOCATION

NO SCALE

APPROVED BY THE SUTTER COUNTY BOARD OF
SUPERVISORS ON JUNE 24, 2014.

AL SAWYER, P.E. DATE
ASSISTANT DIRECTOR OF PUBLIC WORKS

THE CONTRACTOR SHALL POSSESS A CLASS A LICENSE OR CLASSES OF
LICENSES AS SPECIFIED IN THE "NOTICE TO CONTRACTORS"

REVISION	NUMBER	DATE	DESCRIPTION	BY



PREPARED UNDER THE SUPERVISION OF :

T. A. Osterkamp
REGISTERED CIVIL ENGINEER
DATE: 06/24/14

DESIGNED: T. OSTERKAMP	DRAWN: J. KOZAK
CHECKED: B. STEPHENSON	DATE: 06/24/14
ROAD NUMBER:	

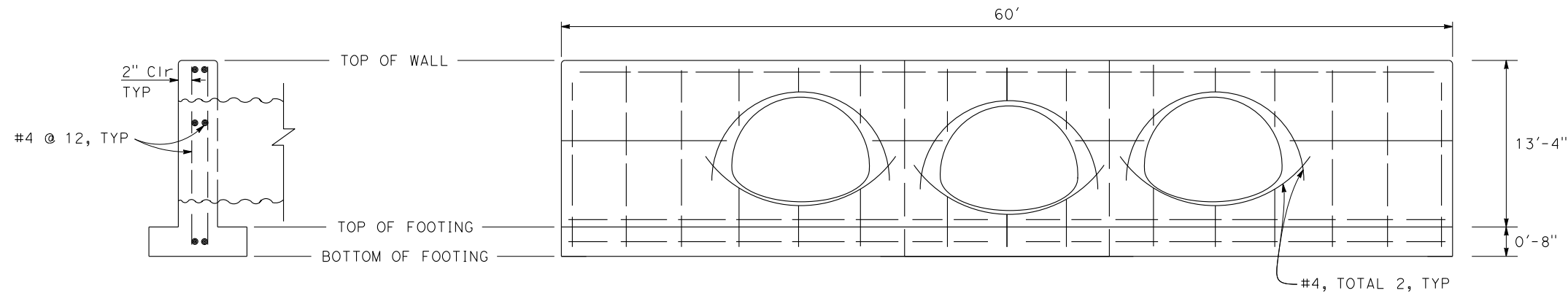
SUTTER COUNTY
DEVELOPMENT SERVICES DEPARTMENT

BREWER ROAD COON CREEK BRIDGE
TITLE SHEET

SHEET
T - 1
1 OF 5
W.O. No. 2011

FOR REDUCED PLANS 3 ORIGINAL SCALE IS IN FEET 2 1 0

Attachment D - Project Design Plans

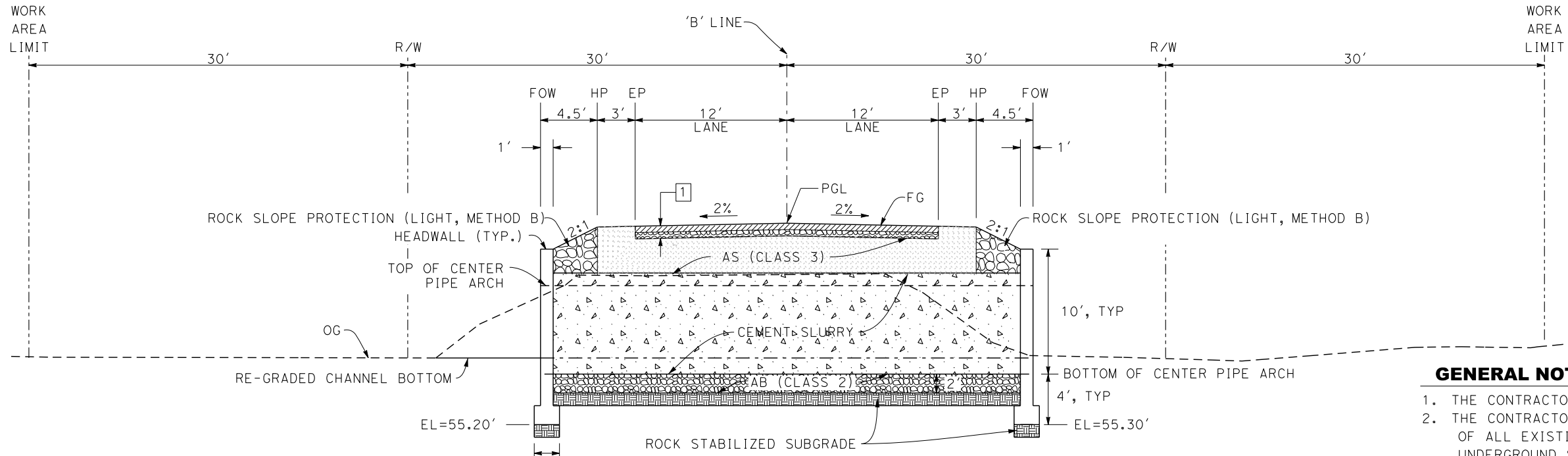


HEADWALL REINFORCEMENT
NO SCALE

LEGEND:

- SURFACE GRAVEL
- AB (CLASS 2)
- ROCK SLOPE PROTECTION (NO. 2 METHOD B)
- AS (CLASS 3)
- CEMENT SLURRY
- ROCK STABILIZED SUBGRADE

AS (CLASS 3) AGGREGATE SUBBASE (CLASS 3) PER CALTRANS STD SPEC SECTION 25
FOW FACE OF WALL



STRUCTURAL SECTION

- 1 0.5' SURFACE GRAVEL
- 0.5' AB (CLASS 2)

GENERAL NOTES

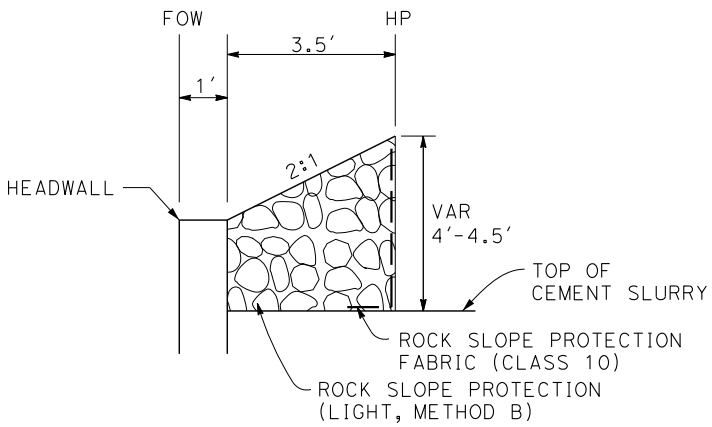
1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ELEVATIONS.
2. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT (1-800-227-2600) TWO WORKING DAYS PRIOR TO WORK COMMENCEMENT.
3. APPLY EROSION CONTROL (BONDED FIBER MATRIX) TO ALL DISTURBED OR NEWLY FORMED SLOPES PER REQUIREMENTS IN SPECIAL PROVISIONS.
4. CONTRACTOR TO SUBMIT SURFACE GRAVEL GRADATION AND SAMPLE PRIOR TO PLACEMENT.

SURVEY CONTROL DATA

Point	North	East	Elevation	Feature	Description
500	2102427.86	6717648.89	72.24	CTL	HUB
501	2102295.61	6717574.60	69.82	CTL	HUB
502	2102623.42	6717610.83	70.23	CTL	HUB
503	2102594.76	6717596.62	71.02	CTL	HUB
504	2102463.84	6717602.70	72.47	CTL	HUB
1001	2102380.68	6717618.38	70.73	CTL	HUB

BENCH MARKS

BM#1 elevation 48.71, NAVD 88, (46.51, NAVD 29), STA. 14+14.26, 28.69' Rt., railroad spike in west face of a joint pole located South of Bridge 18C-0139 and east of the roadway.



ROCK SLOPE PROTECTION DETAIL
NO SCALE

SURFACE GRAVEL GRADATION REQUIREMENTS

SIEVE SIZE	PERCENT PASSING
1"	-
3/4"	100
1/2"	-
No. 4	50-78
No. 8	37-67
No. 40	13-35
No. 200	4-15
PLASTICITY INDEX	4-12

REVISION	NUMBER	DATE	DESCRIPTION	BY



PREPARED UNDER THE SUPERVISION OF:
T. A. Osterkamp
REGISTERED CIVIL ENGINEER
DATE: 06/24/14

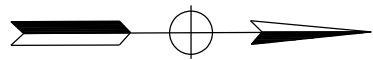
DESIGNED: T. OSTERKAMP
DRAWN: J. KOZAK
CHECKED: B. STEPHENSON
DATE: 06/24/14
ROAD NUMBER:

SUTTER COUNTY
DEVELOPMENT SERVICES DEPARTMENT

BREWER ROAD COON CREEK BRIDGE
TYPICAL SECTIONS
& GENERAL NOTES

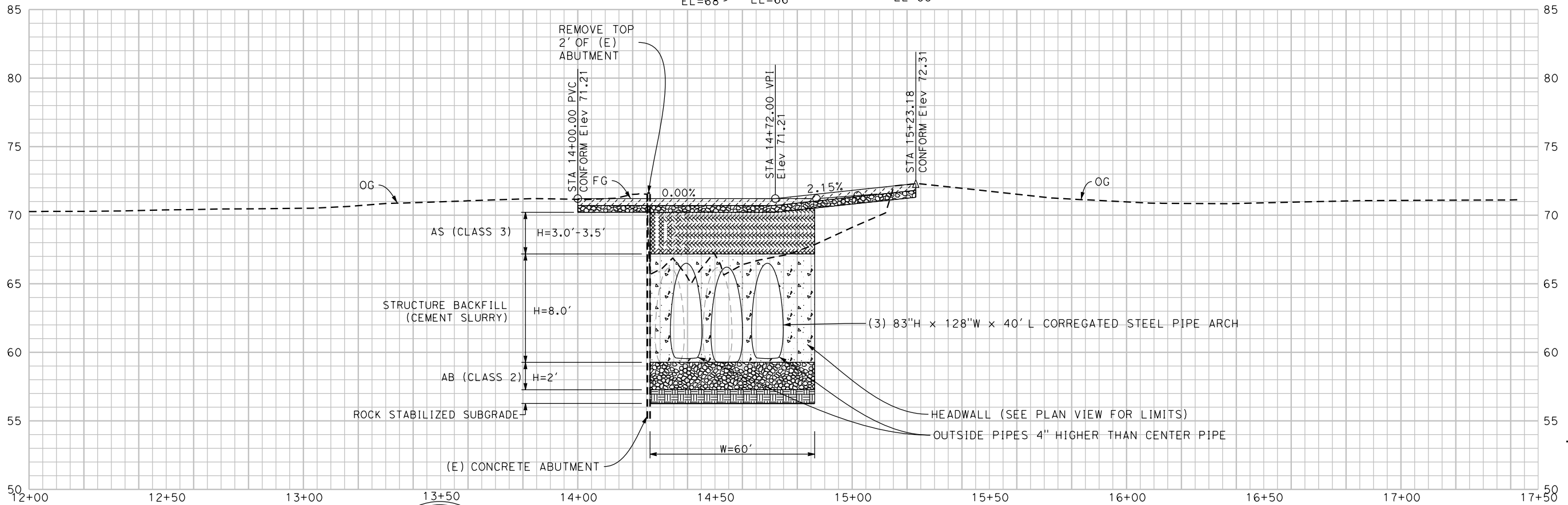
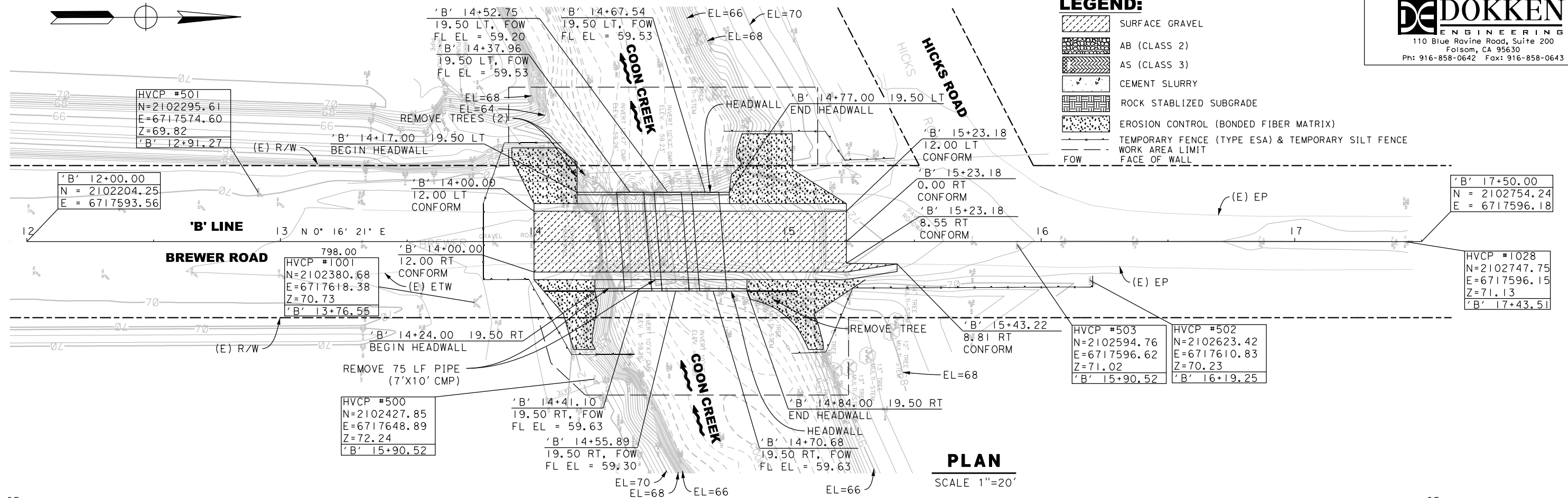
SHEET
TS-1
2 OF 5
NO. NO. 2011

FOR REDUCED PLANS 3 ORIGINAL SCALE IS IN FEET
2
1
0



LEGEND:

- SURFACE GRAVEL
- AB (CLASS 2)
- AS (CLASS 3)
- CEMENT SLURRY
- ROCK STABILIZED SUBGRADE
- EROSION CONTROL (BONDED FIBER MATRIX)
- TEMPORARY FENCE (TYPE ESA) & TEMPORARY SILT FENCE
- WORK AREA LIMIT
- FACE OF WALL



FOR REDUCED PLANS 3 ORIGINAL SCALE IS IN FEET

REVISION

NUMBER	DATE	DESCRIPTION	BY

...*511*2011*EA01.dgn



PREPARED UNDER THE SUPERVISION OF :

T. Osterkamp
REGISTERED CIVIL ENGINEER

DATE: 06/24/14

DESIGNED: T. OSTERKAMP

DRAWN: J. KOZAK

CHECKED: B. STEPHENSON

DATE: 06/24/14

ROAD NUMBER:

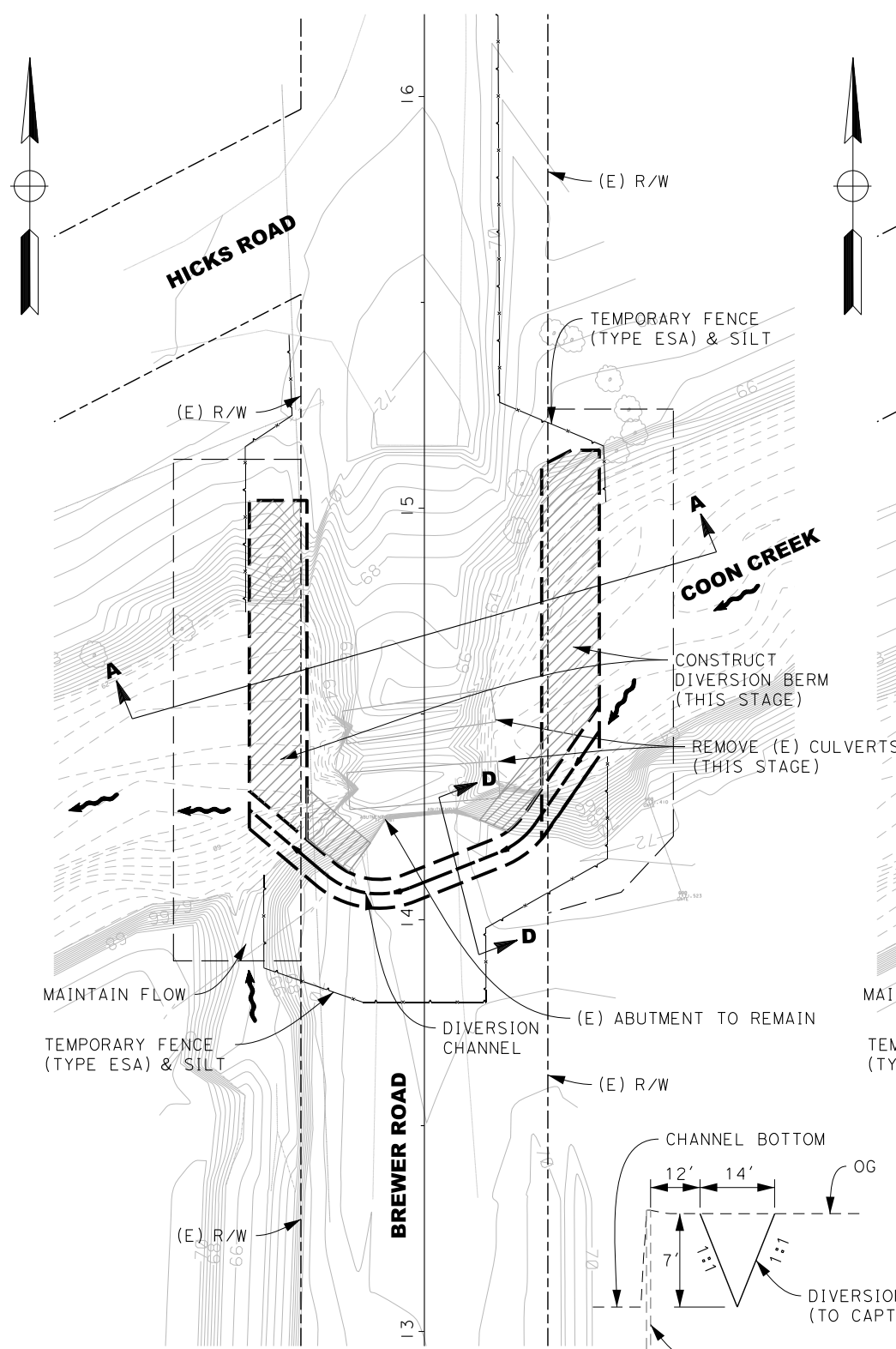
SUTTER COUNTY
DEVELOPMENT SERVICES DEPARTMENT

BREWER ROAD COON CREEK BRIDGE
PLAN AND PROFILE

SHEET
L-1
3 OF 5
W.O. No. 2011

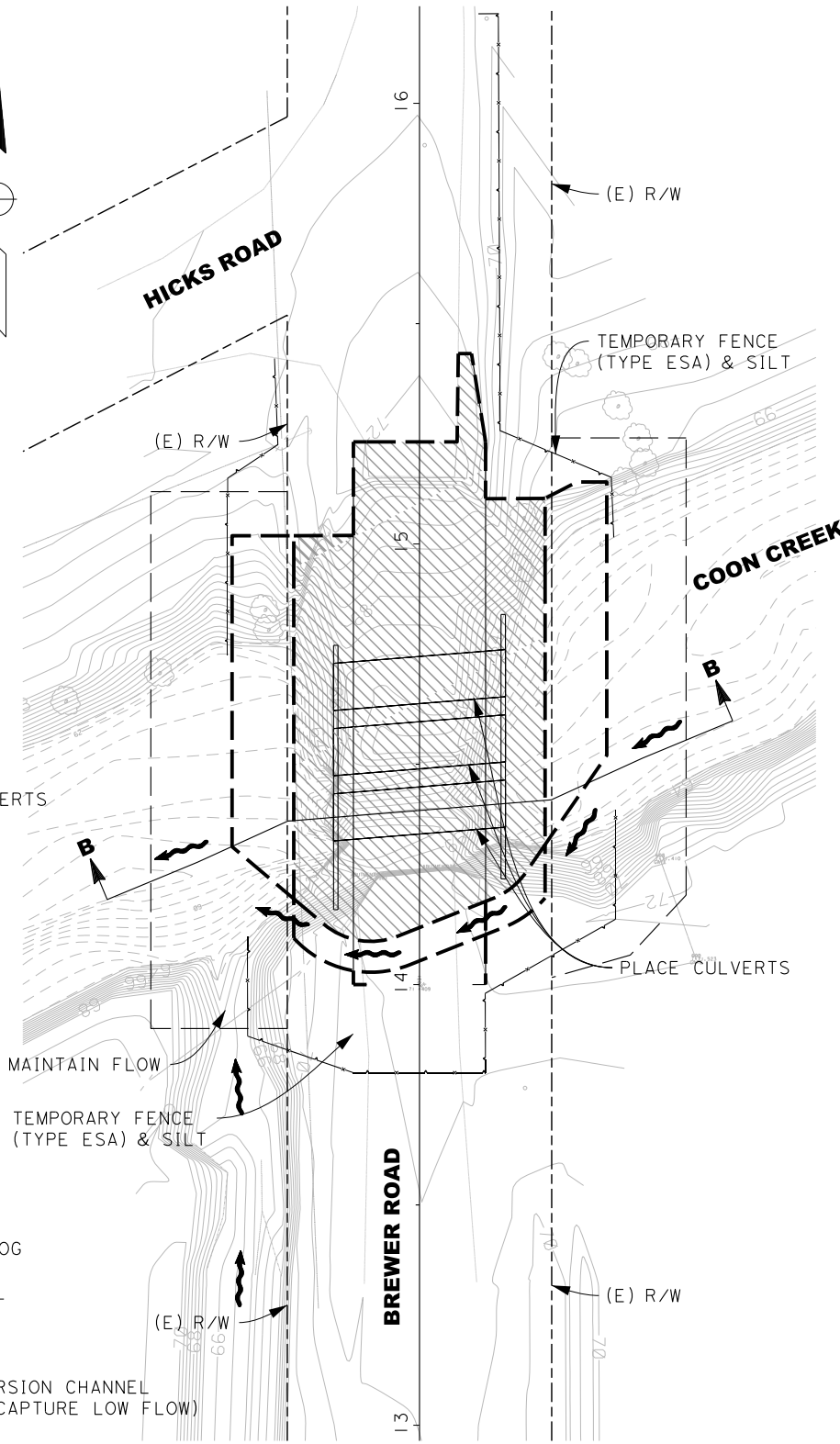
Attachment D - Project Design Plans

FOR REDUCED PLANS
3 ORIGINAL SCALE 15 IN FEET
2
1
0

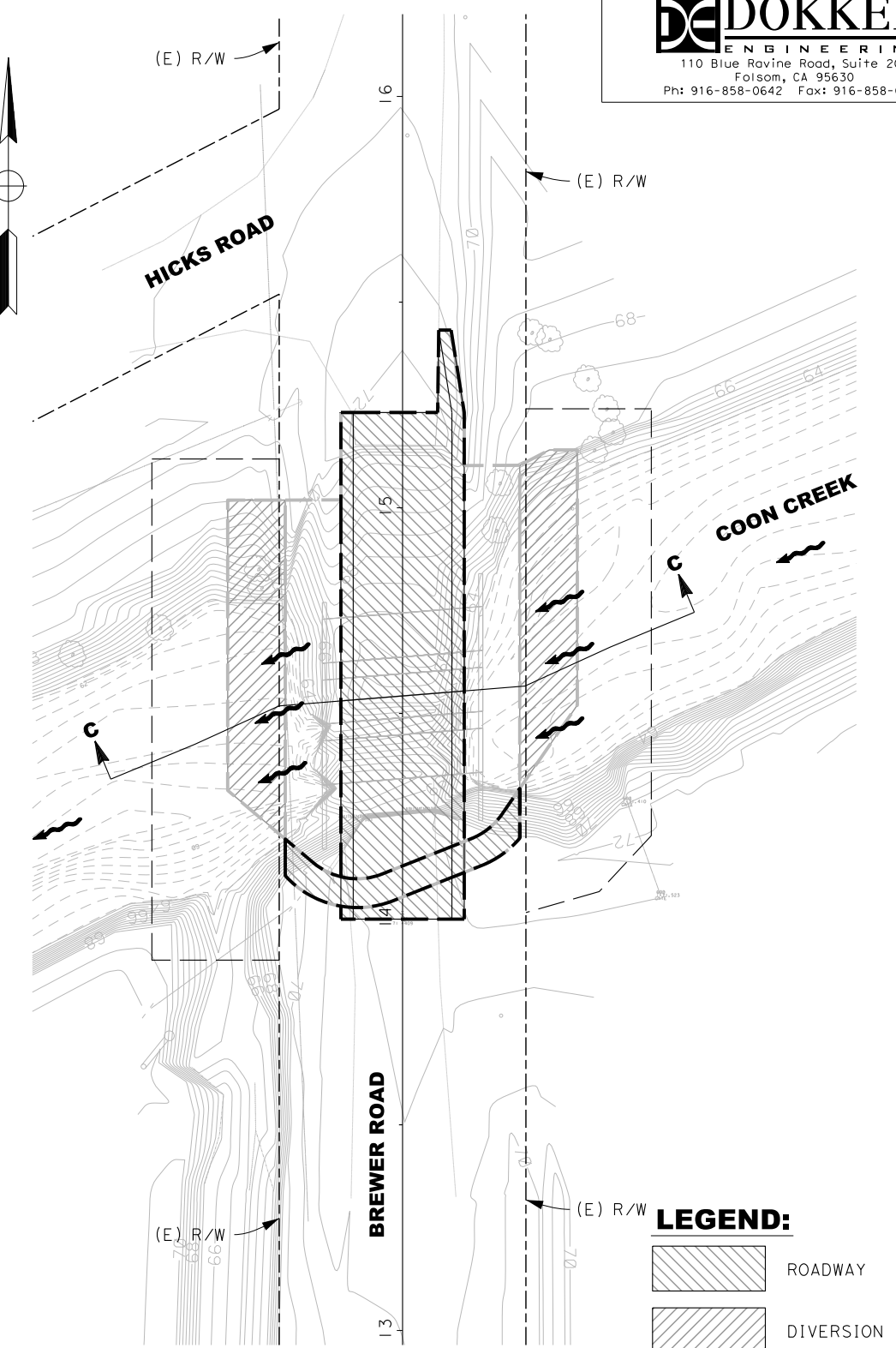


STAGE 1
SCALE: 1"=20'
CONSTRUCTION THIS STAGE
- CONSTRUCT DIVERSION CHANNEL
- CONSTRUCT DIVERSION BERM UP STREAM
AND DOWN STREAM
- PLACE TEMPORARY FENCE (TYPE ESA) & TEMPORARY SILT FENCE

SECTION D-D
NOT TO SCALE



STAGE 2
SCALE: 1"=20'
CONSTRUCTION THIS STAGE
- REMOVE TOP 2' OF (E) ABUTMENT
- EXCAVATE, PREPARE AND PLACE CULVERT SUBGRADE
- PLACE CULVERTS, HEADWALLS & SLOPE PROTECTION
- PLACE STRUCTURE BACKFILL (CEMENT SLURRY)
- PLACE RSP
- PLACE AS (CLASS 3)



STAGE 3
SCALE: 1"=20'
CONSTRUCTION THIS STAGE
- REMOVE DIVERSION BERMS
- REMOVE DIVERSION CHANNEL & REGRADE
- PLACE ROADWAY AB
- PLACE SURFACE GRAVEL
- REMOVE TEMPORARY FENCE (TYPE ESA) & TEMPORARY SILT FENCE

LEGEND:

- ROADWAY
- DIVERSION BERM
- WORK AREA LIMIT

NOTES:

- FOR STAGE CONSTRUCTION
TYPICAL SECTIONS SEE
SHEET CD-1.

REVISION	NUMBER	DATE	DESCRIPTION	BY



PREPARED UNDER THE SUPERVISION OF:
T. A. Osterkamp
REGISTERED CIVIL ENGINEER
DATE: 06/24/14

DESIGNED BY: T. OSTERKAMP
DRAWN BY: J. KOZAK
CHECKED BY: B. STEPHENSON
DATE: 06/24/14
ROAD NUMBER:









SUTTER COUNTY
DEVELOPMENT SERVICES DEPARTMENT

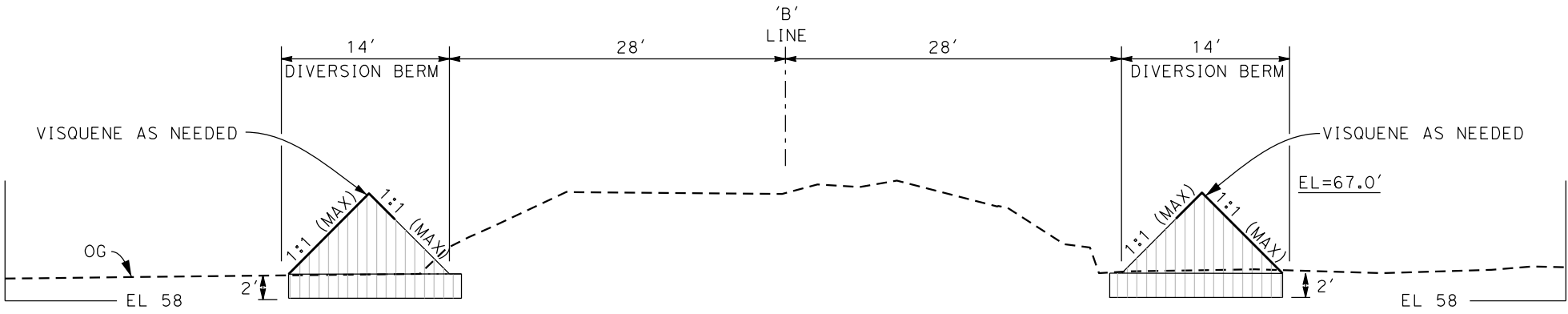
BREWER ROAD COON CREEK BRIDGE
STAGE CONSTRUCTION

SHEET
SC-1
4 OF 5
W.O. NO. 2011

Attachment D - Project Design Plans

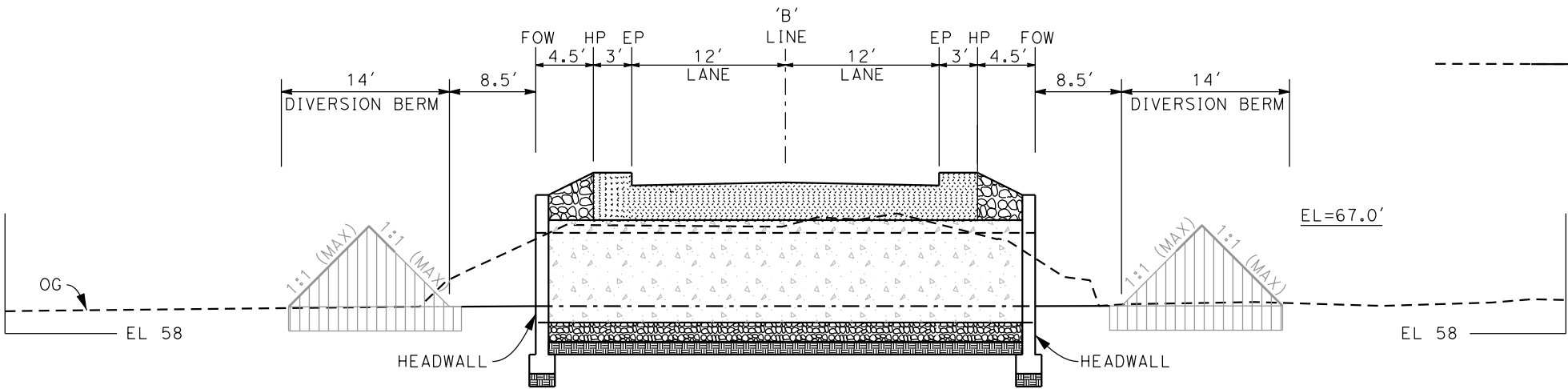
LEGEND:

-  SURFACE GRAVEL
-  DIVERSION BERM
-  AB (CLASS 2)
-  ROCK SLOPE PROTECTION (NO. 2 METHOD B)
-  AS (CLASS 3)
-  CEMENT SLURRY
-  ROCK STABILIZED SUBGRADE
-  DENOTES LIMITS OF PAYMENT FOR STRUCTURE EXCAVATION (TYPE D)
- FOW FACE OF WALL



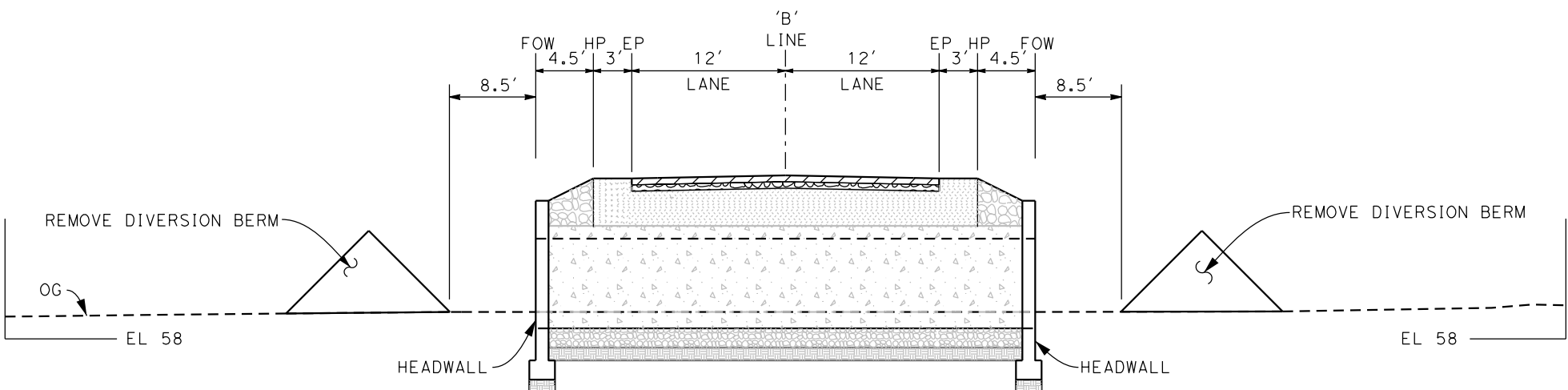
SECTION A-A

SCALE: 1"=10'



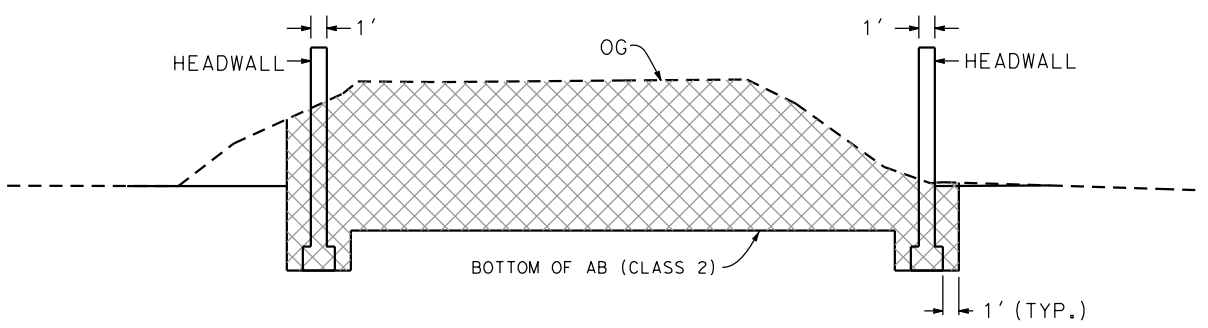
SECTION B-B

SCALE: 1"=10'

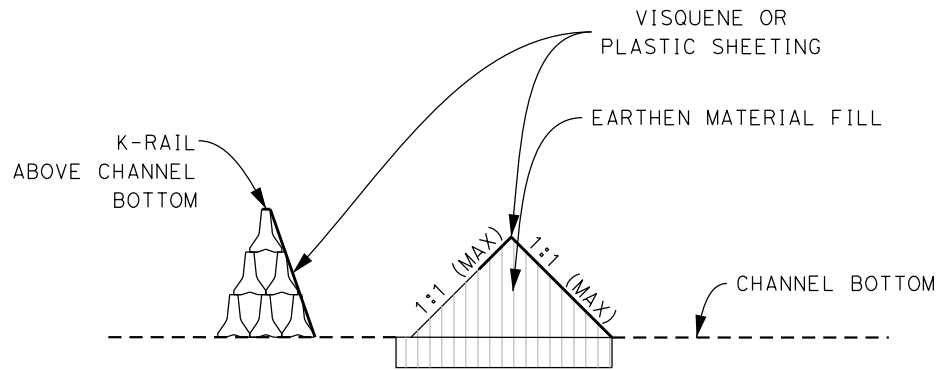


SECTION C-C

SCALE: 1"=10'



STRUCTURE EXCAVATION (TYPE D)



OPTIONAL DIVERSION BERM

FOR REDUCED PLANS IS IN FEET
3
2
1
0

REVISION	NUMBER	DATE	DESCRIPTION	BY



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T. A. Osterkamp
REGISTERED CIVIL ENGINEER
DATE: 06/24/14

DESIGNED: T. OSTERKAMP
DRAWN: J. KOZAK
CHECKED: B. STEPHENSON
DATE: 06/24/14
ROAD NUMBER:

SUTTER COUNTY
DEVELOPMENT SERVICES DEPARTMENT

BREWER ROAD COON CREEK BRIDGE
CONSTRUCTION DETAILS

SHEET
CD-1
5 OF 5
W.O. No. 2011

Attachment D - Project Design Plans



August 6, 2014

Ms. Nancy Moricz
Senior Engineer
Central Valley Flood Protection Board
3310 El Camino Avenue, LL40
Sacramento, California 95821

**RE: Permit App. No. 18971, Brewer Road Bridge Replacement Project Over Coon Creek –
Section 128, “Bridges” Freeboard Clearance Variance Requests**

Dear Ms. Moricz:

Sutter County is proposing to rehabilitate the existing Brewer Road Bridge over Coon Creek. The Brewer Road Bridge is located just south of the intersection of Brewer Road and Hicks Road and is approximately five miles east of State Route 99. The existing bridge was comprised of three 10 foot corrugated metal pipes covered with engineered fill and asphalt paving for the roadway. In December of 2012, Sutter County public works was notified that the bridge was failing due to the complete collapse of one of the metal pipes and partial collapse of a second. Sutter County closed public access to this bridge in December 2012 and began preliminary engineering and environmental documentation for bridge replacement.

The Brewer Road Bridge replacement will consist of replacing the existing culverts in-kind, with three corrugated steel arch culverts of the same size as the existing. The bridge width would remain the same at 24 feet, and approximately 151 feet of roadway would be replaced during construction. The completed roadway elevation would be approximately the same as the existing roadway prior to the culvert collapse.

The project is located in rural southern Sutter County. The primary land use in the project vicinity is agriculture, consisting primarily of rice fields. Coon Creek is a natural channel at the project site, without levees.

We have submitted a permit application to your Board and we are currently working with your staff to secure the permit. Our goal is that your Board will consider our encroachment application at their August 22, 2014 Board meeting.

A review of CVFPB standards indicates a variance will be required to the California Code of Regulations, Title 23 (CCR 23), Waters, Division 1, Article 8 Standards under Sections § 128,

“Bridges”, Item (10)(A), which requires the bridge to be at least three feet above the flood plane.

Flooding characteristics at the project site include:

- Historically, the project area will flood at least 300 feet north of the project site, completely submerging the Hicks Road/Brewer Road intersection, and at least a mile to the south.
- The 100 year water surface elevation is approximately 4.25 feet above the road surface.
- At approximately 10% of the 100 year flow, Coon Creek jumps its banks and sheet flows across the adjacent fields.

In order to meet Board Standards, the soffit of a structure would need to be raised over seven feet from the existing road surface, and extend over a mile in length.

In accordance with CCR 23, § 11 (b), please accept this letter as Sutter County’s formal request for approval of the variance to the standard stated above. Compliance with the Board standards for is not appropriate due to the significant structure length and raised roadway height required to meet the standard, the rural setting of the project site, the nonexistence of existing flood protection measures, and the absence of impacts on surrounding countryside caused by flooding.

If you have any questions, please contact me at (916) 858-0642.

Sincerely,

DOKKEN ENGINEERING



Tim Osterkamp, PE
Project Manager

CC: Al Sawyer, Sutter County