

APPLICATION NO. 18971



SUTTER COUNTY DEVELOPMENT SERVICES DEPARTMENT

Brewer Road Culvert Crossing Replacement,
Sutter County

August 22, 2014

BOARD ACTION



Consider approval of Permit No. 18971 to:

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

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
- § 11 – Variances
- § 12 – Protests
- § 13 – Evidentiary Hearings
- § 108 – Existing Encroachments
- § 112 – Streams Regulated and Nonpermissible Work Periods
- § 116 – Borrow and Excavation
- § 121 – Erosion Control
- § 128 – Bridges

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Brewer Road Looking South—May 2013
COON CREEK LOOKING NORTHWEST — May 2013

Vise Road

COMMENTS AND ENDORSEMENTS



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

- U.S. Army Corps of Engineers (USACE) Sacramento District non-fed letter was received August 9, 2014
 - USACE District Engineer has no comments or recommendations regarding flood control because the proposed work does not affect a federally constructed project



PROJECT BACKGROUND

- Sutter County wants to rehabilitate the failed Brewer Road crossing over Coon Creek
- The existing structure is made up of three pipe culverts, one of which has completely failed causing public access closure in December of 2012 (photos)
- Engineering and design subsequently commenced for the rehabilitation
- The county hopes to complete the project prior to the October 1, 2014 end of the Giant Garter Snake habitat construction activity window

HYDRAULIC SUMMARY



Hydraulic Information:

- Modeled using **HEC-RAS version 4.1** one-dimensional software
- 100-year design flow = **18,058 cubic-feet per second**
- Project proposes an in-kind replacement → **no adverse hydraulic impacts**
- Coon Creek's banks only contain approximately 10% of the design flow → approximately 90% of the design flow jumps the creek banks and floods the surrounding area
- Access roads in the area **would be partially closed during a flood event**
- The crossing is **submerged by approximately 4.25 feet** during the design flood event
- **Board staff has determined** that the project is expected to have **no adverse hydraulic impacts to Coon Creek**, as it will not impact the water surface elevation, velocities, or impact the surrounding inundated areas
- **Staff also has determined** that **a functioning culvert is beneficial** because it would allow flows to pass, promote drainage in the vicinity, and would reduce public safety risk

GEOTECHNICAL SUMMARY



- Board staff has reviewed geotechnical information provided in the application and has concluded that the proposed project **would result in no adverse geotechnical impacts** to the Coon Creek channel or floodway.
- All fill, excavation, rip rap placement, and temporary structures will be completed in compliance with Draft Permit No. 18971 and Title 23 standards, with the exception of the variance request described on the next slide.

PROJECT VARIANCE (1/2)



Variance Request:

- In accordance with Title 23, § 11(a) and (b) Dokken Engineering is requesting a variance from Title 23, § 128(a)(10)(A) on the grounds that the **Board's standards are not appropriate for the proposed project**, because:
 - a traditional bridge would need to be constructed over 7 feet above the existing road surface elevation with raised approach roadways extending over a mile in length and this would still not address all of the accessibility issues in the area;
 - 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.

§ 128(a)(10)(A) - The height of a proposed bridge must be at least with the (3) feet's above the design flood plain. The required clearance may be reduced to two (2) feet on minor streams at sites where significant amounts of stream debris are unlikely.

§ 11(b) – When approval of an encroachment requires a variance, the applicant must clearly state in the application why compliance with the board's standards is infeasible or not appropriate.

PROJECT VARIANCE (2/2)

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Bridges typically span geographic barriers, such as rivers, lakes, or valleys and allow transportation from one side to the other.



Culverts are typically used to allow water to pass through geographic or man-made barriers and are very common in rural areas or on private land where a smaller crossing is acceptable.

Images obtained from www.iamcivilengineer.com

CEQA / WATER CODE 8610.5



- The CEQA Analysis is included in **Staff Report Section 8.0**
- The Water Code § 8610.5 Considerations are included in **Staff Report Section 9.0**

STAFF RECOMMENDATION



Board Staff is Recommending 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 Staff Report Section 7.4;
- **approve** Draft Permit No. 18971 (in substantially the form provided); and,
- **direct** the Board's Executive Officer to:
 - **execute** the permit, and
 - **file** a Notice of Determination pursuant to CEQA with the State Clearinghouse.

QUESTIONS



Presented by: Nancy Moricz, Senior Engineer