



SCALE: 1"=200'

FIGURE 2
4(F) DE MINIMIS
SITE PLAN

ORD FERRY ROAD BRIDGE SEISMIC RETROFIT PROJECT
AT SACRAMENTO RIVER BRIDGE

BUTTE COUNTY, CA

FEDERAL BRIDGE REPLACEMENT PROJECT No. STPLZ-5912(010)

STATE BRIDGE No. 12C-0120, EA 03-452804L

COUNTY PROJECT No. 42071-97-1

LEGEND

- PARK BOUNDARY
- PARCEL LINE
- TEMPORARY ACCESS TRESTLE
- BOAT RAMP CLOSURE FENCE/GATE
- POSSIBLE EMERGENCY BOAT ACCESS
- BOAT ACCESS TO BE CLOSED

Project Narrative –

The existing nine-span 1308 foot long bridge was built in 1971 and replaced a ferry service that transported motorists across the Sacramento River. The continuous 3-cell reinforced concrete box girder bridge is 32.5' wide and accommodates two-lanes of east-west traffic and is a vital link from Butte County to Glenn County. This structure has eight piers founded on concrete piles and hinges located on spans 2, 4, 6, and 8. Piers 2 through 6 are within the active channel limits as of 2010 and all of the piers (Piers 2-9) are located within the ordinary high water mark of the Sacramento River. The abutments are located on existing levees and are founded on driven steel piles. There is no standing water within the project area. The Sacramento River is considered salmonid habitat.

In 1997, a seismic assessment was performed and alternative seismic retrofit strategies were developed for the existing bridge. The proposed strategies were presented to Caltrans Division of Structures (CTDOS) and final design of the approved seismic retrofit measures commenced. Final Plans, Specifications and Estimates were submitted to CTDOS and Butte County in November 1997. Since that time, Caltrans has developed and modified and more specific seismic design criteria (SDC) for the design of bridge type structures that are susceptible to seismic loads. Caltrans Seismic Design Criteria Ver. 1.4 SDC dated June 2006 will be utilized for this project.

Of the eight piers, six will require the foundation of the pier to be retrofitted. The likely method of construction is to drive sheet piles approximately 3.5' from the existing pile cap and excavate approximately 15' of native material that is between the sheet pile and the existing pile cap. The area between the pile cap and the sheet piling will be dewatered and pumped to the shore for treatment. New 14" round steel pipe piles will be driven between the existing pile cap and sheet pile. Each foundation retrofit requires 12 steel pipe piles which results in a total of 72 permanent piles required for the entire retrofit. A concrete seal course will be placed over the steel pipe piles using the sheet pile as the form. The existing concrete pile cap will be enlarged to cover the new pile. The sheet pile will then be removed.

Within the Sacramento River, Butte County is proposing to drive permanent piles (piers 2, 4, 5, 6, 7, and 9), and the trestle piles during the work window of May 15 thru October 15 to minimize effects on threatened species. For the in-water work, it is anticipated that the trestle installation, existing bridge foundation work, pier retrofit, and trestle removal will be conducted over three construction seasons.

In addition to the foundation retrofit described above, each of the eight piers will require the installation of steel column casings. These casings can be installed using the trestle for the piers that are located within the active channel or from the dry riverbed for the piers that are not located within the active channel. Each of the eight piers will require dewatering. The dewatering strategy for the six piers receiving the foundation retrofit as previously discussed will be concurrent with the steel casing retrofit. The two piers that are not receiving the foundation retrofit will require sheet piling and dewatering so that the entire column to the top of the foundation can be exposed. All water that is between the sheet piling and the column will be pumped to the shore for treatment.

The existing piers experience a high quantity of wooden drift and debris that collect on the columns during high flows. A series of debris deflectors are proposed to mitigate this occurrence. The debris deflector is a hydraulic driven turbine that is powered by the natural flow and hydrology of the Sacramento River. The rate of water velocity causes a rotation of a turbine that deflects drift and debris away from piers and diaphragm walls to open span and down river. The debris deflector is attached to a tracking system which mounts on the bridge pier. The debris deflector's lightweight and controlled ballast capabilities support a positive or negative flotation. It has vertical tracking capabilities in excess of twenty-five feet during high water events.

It is anticipated the Contractor will build a temporary trestle from the western shore of the Sacramento River out to the two westerly in-water piers. This will leave the easterly of the three spans open to river traffic. It is assumed at this time that the Ord Bend Park will be closed to all boat traffic with the exception of emergency access for the Glenn County Sheriff for approximately three months. Once the westerly retrofit work has been completed, the trestle, trestle piles, and sheet piling will be removed. Once work is complete on the western piers, it is anticipated the Contractor will construct a temporary trestle from the eastern shore of the Sacramento River out to the three easterly in-water piers. This will leave the three westerly spans open to river traffic. Once the westerly retrofit work has been completed, the trestle, trestle piles, and sheet piling will be removed. Each trestle is expected to require 40 temporary 12"-16" round steel pipe piles. All stationary equipment that is used on the items of work that require the trestle will be refueled and serviced while on the trestle.

Additional work on the bridge that does not require access from the Sacramento River will be performed. Each of the four hinges will get retrofitted by adding hinge seat extenders. This work will be accomplished via scaffolding that will be constructed off of the overhang of the existing bridge. Other items of work including applying methacrylate to the bridge deck to prevent water intrusion, removing the existing bridge rail protection at the four corners and installing new systems that meet current design standards, replacing the existing roadway structural section within 200' on each side of the bridge, and signing and restriping the bridge.

During the retrofit of the existing bridge, it is expected that there will be three seasons of in-water work. There will also be work outside of the live channel that can be performed concurrent to the in-channel work for a total of three seasons of bridge work.

Staging Area

Staging will take place at an agricultural industrial area approximately 0.6 miles west of the Ord Ferry Bridge.

Access

For access to piers that are east of the active channel, it is anticipated that an orchard maintenance road adjacent to Ord Ferry Road will be utilized. At the point that the orchard maintenance road turns to the north, a temporary access road will need to be constructed to gain access to the riverbed. For the westerly piers which all require the trestle, it is anticipated that the old ferry landing ramp and/or a temporary access road adjacent to the existing bridge will be

utilized to gain access to the river. This area in the southwest corner of the project is accessible via a paved road that is just south of Ord Ferry Road.