DIVERSION/DEWATERING PLAN

Dover Canyon Road at Jack Creek Bridge Replacement Project

Federal Project No. BRLO-5949 (152), Bridge No. 49C-0037

Prepared For:
San Luis Obispo County
Public Works Department

Prepared By:
Mark Thomas
July 2018

Project Description

The County of San Luis Obispo Public Works Department (County) is proposing to replace a nearly 100-year-old, single lane bridge (Bridge No. 49C-0037) along Dover Canyon Road at Jack Creek. Implementation of the Project will replace the existing, structurally deficient Warren pony steel truss bridge with a new concrete, two-lane bridge that will carry emergency vehicles, including fully-loaded fire trucks, and improve access to the public and properties along Dover Canyon Road. The Project is a safety improvement project, funded in part by the Federal Highway Administration (FHWA) via the California Department of Transportation's (Caltrans) Highway Bridge Program (HBP). According to the Caltrans Bridge Inspection Report (BIR) dated August 3, 2015, the bridge is classified as functionally obsolete with a sufficiency rating of 48.5, and has been programed for replacement.

During the project initiation phase, the design team identified multiple alignment alternatives for the bridge and adjacent roadway. These alternatives focused on either maintaining the existing alignment or realigning the bridge to improve the right-angle curve just west of the existing structure. It was determined by the Project Development Team (PDT) that maintaining the existing bridge and roadway alignment while correcting the right-angle curve to meet the desired design speed was the preferred alternative. This alternative minimizes right of way conflicts and construction impacts.

Road closure is proposed for construction of the project, however there is no viable detour for Dover Canyon Road at the bridge crossing. To maintain the existing bridge alignment, two detour alternatives were considered: a temporary bridge and an at-grade crossing. The design team determined that a temporary bridge was the most feasible detour alternative. Resident access across Jack Creek will be maintained by a temporary bridge that will be constructed upstream of the existing bridge structure.

Water Diversion Plan

Based on historical summer flow records, average Jack Creek flows are expected to be approximately 1.1cfs between June and October. Due to the low volume of summer flow, a temporary dam and pipe diversion system is not anticipated to be necessary. To avoid impacts to fish and other aquatic life, construction within Jack Creek is planned to occur during the non-rainy season.

A water diversion system consisting of temporary k-rail will narrow the channel, keeping water out of the work area. Temporary k-rail will be installed a minimum of two feet from the toe of the proposed rock slope protection (RSP). The temporary K-rail will be cleaned, filled with clean gravel bags, and lined with clean plastic sheeting to keep water from seeping into the work area. Approximately 160ft of k-rail will be placed along each bank, running parallel to direction of flow. K-rail will be installed approximately 60ft upstream and downstream of the permanent bridge structure. Placement of the k-rail will require minor grading and excavation within Jack Creek. Any imported clean rushed rock used in the diversion system will be removed offsite or incorporated into permanent roadway fill when construction activity has finished. All diversion and dewatering activities will adhere to Caltrans Standard Specifications. See Attachment A for a typical layout of the k-rail diversion plan.

After construction of the permanent structure and roadway is complete, the contractor will remove the temporary k-rail and restore all disturbed areas within the creek to pre-construction conditions. The temporary k-rail will be removed in a manner that will provide the least amount of disturbance as possible to the existing creek environment.

ATTACHMENT A

JACK CREEK DIVERSION AND DEWATERING EXHIBIT

FILL LINE FOR DETOUR

PROPOSED K-RAIL WITH GRAVEL BAGS AND PLASTIC SHEETING LENGTH=160FT±

JACK CREEK

PROPOSED K-RAIL WITH GRAVEL BAGS AND PLASTIC SHEETING LENGTH=160FT±

TEMPORARY RAILROAD CAR BRIDGE (FOR DETOUR)

DOVER CANYON RD DETOUR

R/W

TO DEAD END

19+00

DOVER CANYON RD

20+00

"DC" LINE

TO VINEYARD Dr

21+00

FILL LINE FOR DETOUR

R/W

R/W

FILL LINE FOR PERMANENT CONSTRUCTION

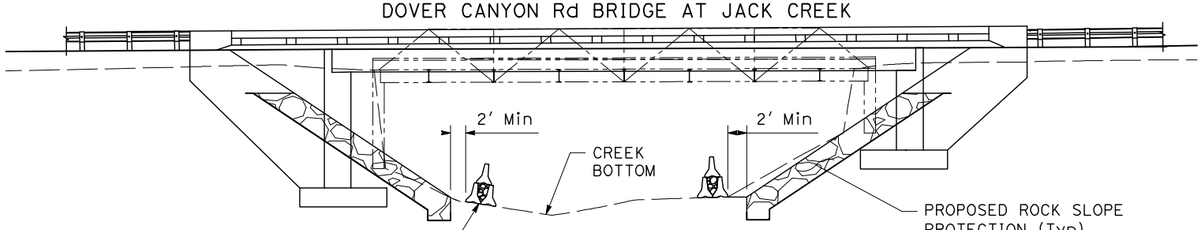
R/W

PROPOSED ROCK SLOPE PROTECTION (Typ)

FILL LINE FOR PERMANENT CONSTRUCTION

PLAN VIEW
SCALE: 1" = 40'

DOVER CANYON Rd BRIDGE AT JACK CREEK



SECTION A-A
NO SCALE

BRIDGE No.: 49C-0037
FEDERAL PROJECT No.: BRLO-5949(152)

DRAWN BY: R.USEDOM
CKD. BY: Z.SIVIGLIA
DATE: 07/11/2018
SCALE: AS SHOWN

DOVER CANYON AT JACK CREEK BRIDGE REPLACEMENT PROJECT

JACK CREEK DIVERSION AND DEWATERING PLAN

MARK THOMAS
16795 VON KARMAN AVE
SUITE 240
IRVINE, CA 92608