EROSION CONTROL

Product: Gabion Mattresses, Non-Woven Geotextiles

Background

State Route 299 runs across the northern part of the California from Arcata to the Nevada state line. This highway is part of the California Freeway and Expressway System and portions of the highway are included in the State Scenic Highway System.

Problem

Steep mountainous terrain, combined with challenging geotechnical and soil conditions required non-typical methods of construction.

The road has been realigned many times in an effort to accommodate the challenging and dangerous grades and curves through the mountains. In an effort for highway safety improvement, a project from mile marker 0.3 to 7.1 was initiated.

The project:
- Decreased approximately 43 horizontal curves to 15
- Revised the horizontal & vertical alignment
- Increased lane and shoulder widths
- Added a passing lane
- Put in place a 4 foot soft median

Solution:

Gabion Mats were used in lieu of rock-lined ditches to minimize the potential for “ditch shifting” due to erosion and undercutting.

It was anticipated that gabion voids would help decrease sediment transport onto waterways and that overtime the gabions will fill with sediment and allow natural vegetation to grow.

To complete this work, 1,300,000 cubic yards of soil was excavated from 22 cuts and placed into 8 major fills.

Client:
CALTRANS
Main contractor:
STEVE MANNING CONSTRUCTION
Designer:
CALTRANS
Products used:
GABION MATS, MACTEX, GALVANIZED SPENAX
Date of construction
2015
Design Drawing

After site clearing and preparation

Installation of the benches

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