**Product:** Maccaferri Debris Flow Barrier

**Introduction**

Maccaferri Debris Flow Barriers were installed at four sites upslope of HWY 1 in Big Sur, CA in order to mitigate potential debris flow activity following extensive wildfires. This project was designed by the client, California Department of Transportation (Caltrans), and was installed by AIS Construction.

**Problem**

Wildfires in the Summer of 2008 within the Big Sur, CA region resulted in the desiccation of vegetation, which helps to stabilize soil on hill slopes. As a result, these hill slopes are more prone to debris flows and mudslides until vegetation is re-established. Many of these hill slopes have steep gradients and can potentially transport significant volumes of soil and debris down slope to CA HWY 1. This may result in flooding from blocked drainage structures, safety issues to travelers, damage to structures, and/or potential road closures.

**Solution**

Caltrans identified debris flow barriers as a feasible solution to mitigate the potential issues that may result from a debris flow or mudslide incident. Maccaferri debris flow barriers were selected for installation at four separate sites above California HWY 1 in order to mitigate the above mentioned, potential problems resulting from the wildfires. These structures were installed at the base of some of the drainage basins that are susceptible to debris flows and subsequent problems. These structures were installed in the channel approximately 20 to 60 feet upslope of HWY 1. The barriers were designed to be in place for five years or until vegetation is re-established and subsequent debris flow hazards are reduced.

**Client:**
California Department of Transportation (Caltrans)

**Main contractor:**
AIS Construction

**Designer:**
Caltrans

**Products used:**
Maccaferri Debris Flow Barriers

**Date of construction:**
Fall 2008
Description of Debris Flow Barriers

The four barriers ranged in dimension which spanned up to 120 feet in length and 16 feet in height. The Maccaferri debris flow barrier is similar to the rockfall barrier, but has several differences, such as additional breaking elements and variable geometries. Additionally, the combination of one foot and three foot diameter ring nets were used. The larger diameter ring nets were implemented along the bottom of the structure in order to allow the small material and water to flow through. The barriers were designed to be in place until vegetation is re-established, and to be re-installed if needed after future potential wildfires or events that may present an increased hazard of debris flow events.

Construction

California water quality regulations required that all point sources of sediment must be mitigated by October 15th, which is considered to be the start of the rainfall season. This project was considered “emergency work” and was successfully supplied by Maccaferri and successfully installed by AIS Construction within the limited timeframe that was required in order to meet this deadline and also meet the goal of the project.