

SBCPW - EAST MOUNTAIN DRIVE ROCKFALL ATTENUATOR SYSTEM PROJECT
SANTA BARBARA, CALIFORNIA, U.S.A.

Suspended Drapery

Problem

In early January 2018, a series of mudflows occurred in Southern California, particularly affecting Ventura and Santa Barbara Counties.

The 2017 California wildfire season was at the time the most destructive in California's history, with approximately 1.3 million acres burned. Of these, 281,893 acres were burned during the Thomas Fire, the largest in the state's history, which devastated large amounts of vegetation whose roots had helped stabilize topsoil in hillsides and other vulnerable areas.

In the meanwhile, a strong low-pressure system and cold front developed off the coast and moved onto the mainland, bringing heavy rain and prompting mandatory evacuations over potential mudslides in areas affected by wildfires. The storm intensified on the following days, with at least four inches of rain falling over the two-day period, causing mud and boulders from the upper mountains to flow down creeks and valleys into surrounding towns.

The conflagrations devastated steep slopes, which caused loss of vegetation and destabilization of the soil and greatly facilitated subsequent mudflows and geo-hazard exposition.

Solution

Between the areas affected by the event, the tract approximately 0.7 miles northwest of Ashley Road, near the Santa Barbara city was one of the major geological concerns, having received rocks deposition from the mudflow and exposition of unstable boulders along the surface of slopes due to the storm.

For this location, the SBCPW designed a rockfall attenuator consisting in a cable-net primary reinforcement with a secondary layer of DTWM netting meant to catch smaller debris, both tan, black or brown colored to better penetrate the surrounding environment. At the base of the system, a rockfall barrier per CalTrans standards was specified as an additional safety measure and as a debris containment structure.

Typically rockfall attenuators are constructed by placing each individual netting layer and connecting them on-site, one-by-one. In this instance, black polymer coated composite panels were manufactured and preattached in the factory creating one single product, resulting in a significant increase of the installation rate and therefore, in money-saving.

Client: County of Santa Barbara Public Works

Designer / Consultant: County of Santa Barbara Public Works

Contractor: Sunquest General Engineering Inc.

Products used (Qty.)

- DT Mesh	5400
- HEA Panels	4608
- Rockfall - Barrier components	1400
- Steelgrid HR	600
- Wire Rope	1200

Date of construction: 05/2019 - 08/2019



Before Construction



Before Construction



After Construction



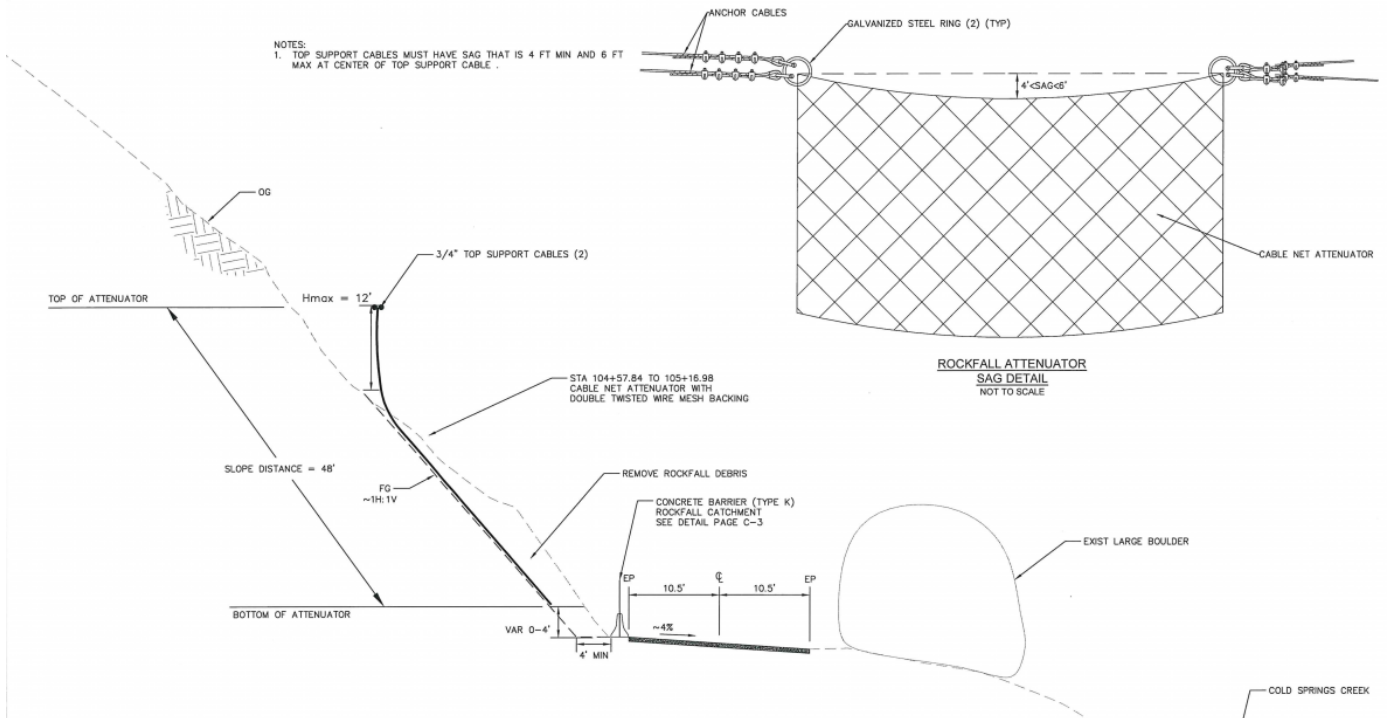
After Construction



After Construction



After Construction



Typical Cross Section

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