GEOWEB®

MSE Retaining Wall

POWER LINE ACCESS

OLIVENHAIN DAM

San Diego County, California

Completed Project

Olivenhain Dam: (top of photo) The largest Roller-Compacted Concrete dam in the US.

GEOWEB Walls: (bottom of photo) Harmoniously blending with the natural terrain.

Power Line Access

GEOWEB retaining walls made power line access to Olivenhain Dam possible over mountainous terrain.

Project Scope

The San Diego County Water Authority (SDCWA) imports water from the California State Water Project, a 500 mile long connection to water sources in northern California, and from the Colorado River via a 200 mile long aqueduct system. The San Diego area has been dependent on distant water resources for more than a century. Because it crosses several fault lines the system has always been at risk due to earthquake susceptibility. As a result, an $827 million project was approved to construct the Olivenhain Dam and related water system improvements. The goal of the project co-owners, SDCWA and Olivenhain Municipal Water District, was to secure sufficient water storage capacity to sustain the region through a prolonged interruption of its imported water supply.

About Olivenhain Dam

The Olivenhain Dam is the centerpiece of the project. At 318 feet tall, it is the largest dam constructed of roller-compacted concrete (RCC) in the US and designed to remain fully operational following an earthquake of up to Richter magnitude 7.25.

Power Line Access Over Difficult Terrain

Since the Olivenhain Dam will serve as a holding reservoir, San Diego Gas & Electric (SDG&E) needed to route power lines over the rugged mountainous terrain that surrounded the future reservoir. Their mission was to provide power for a pump station that will fill the Olivenhain reservoir from the nearby SDCWA aquaduct. In order to place the power line towers securely on the steep hillsides with minimal visual impact, a natural appearing reinforced retaining wall system was needed.

SDG&E engineers selected the Presto GEOWEB® Retaining Wall System as the best option for the job.

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Site Challenges

A number of crucial issues had to be overcome. Typical of high tension towers in rough terrain, the footprints of the sites where the GEOWEB® walls would be placed were very tight. The area is also remote and the access routes to the sites were limited by requirements that construction take place with minimal impact. The power lines cross through the Elfin Forest Recreational Reserve.

Fast, Efficient Installation

Because GEOWEB sections are light and easily handled while they are being installed, the goal of minimal site impact was easily met as crews were able to install the retaining wall sections without the need for cranes or other heavy lifting equipment. Installation was quickly completed by small crews, working with a tracked excavator, a backhoe and a vibratory compactor.

Unvegetated Walls Minimize Fire Fuel Concerns

Due to concerns regarding potential wildfires within the power line corridor, the GEOWEB wall faces—typically vegetated—were infilled with crushed stone and deliberately left free of vegetation. Thanks to the tan colored, texturized face of the GEOWEB walls, the finished structures blend harmoniously with the natural surroundings with minimal visual impact.

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Project information and photos courtesy of SSPCo and SDG&E.