

RONALD W. CASPER WILDERNESS PARK BANKS PROTECTION AND STABILIZATION

SAN JUAN CAPISTRANO, CALIFORNIA, U.S.A.

Longitudinal Protection

Problem

The Ronald W. Casper Wilderness Park at San Juan Capistrano is a protected natural wildlife area and recreational park in Southern California that allows families to camp and enjoy nature during the warmer seasons, located along the Ortega Highway 74, in Orange County.

In the middle of the park, right next to the camping areas, there is a major water stream called San Juan Creek, which normally keeps dry for the majority of the year. However, during rains and flood events, this creek might become a huge waterway, filled by the multiple effluents that collect most of the waters coming from the San Juan Canyon and surrounding areas, which runs into the creek with high water velocity and volume was eroding the banks, generating instability of the slopes and loss of land. To solve the issue the engineering firm designed a repairing solution focus to stabilize both banks of the creek with gabion heavy lining structures.

Solution

The challenge on this project was to find a cost-effective solution that was environmentally friendly and strong enough to stand the force of the high-water flow that runs into the creek during rains and flood events. At the same time, the solution had to be flexible enough to accommodate possible differential settlements, allowing vegetation to grow thru it to better penetrate the natural environment.

To meet the requirements of the project and solve the problem, the unique solution adopted was a gabion heavy lining, consisting of a stepped gabion structure for the majority of the longitudinal protection, with some application of 12" thick gabion mattresses lining on the gentler slopes at the end of the structures.

Client: Ronald W. Casper Wilderness Park

Contractor: Nove Engineering

Products used (Qty.)

- Gabion 3000

Date of construction: 12/1980 - 12/1980



After Construction - 2018



After Construction - 2018



After Construction - 2018



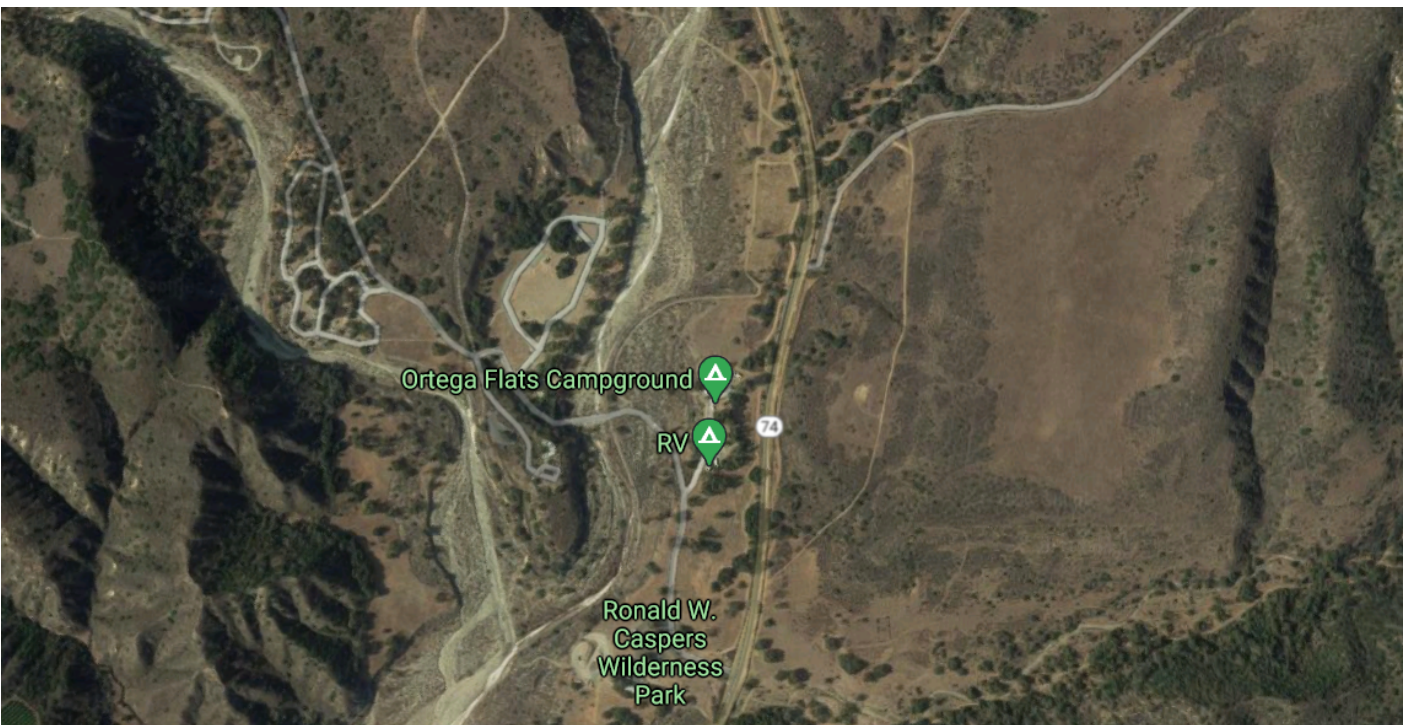
After Construction - 2018



After Construction - 2018



After Construction - 2018



Location Map

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