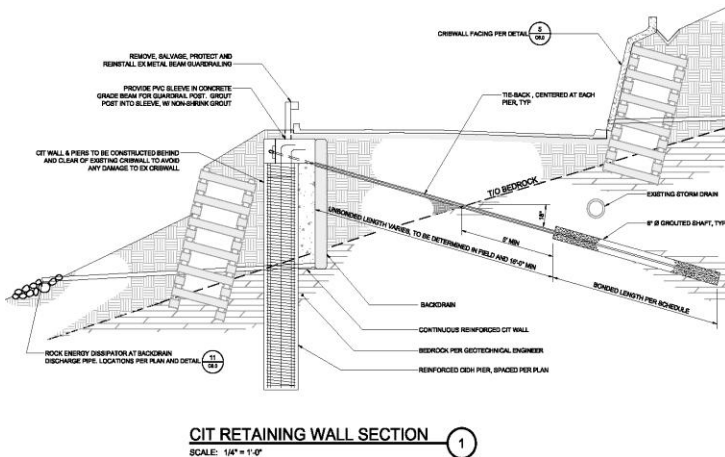




Saddleback Ridge Road Landslide Repair Scotts Valley, California

Civil and Structural Engineering



Client Reference:

Frank Kertai
President of Heritage Parks HOA
516 Shasta Park Ct.
Scotts Valley, CA 95066
(831) 439-0940

Budget: \$ 950,000

When the Heritage Parks Home Owners Association needed to permanently repair landslide damage to a 600 foot section of Saddleback Ridge Road, Mesiti-Miller Engineering was contacted to investigate multiple repair options and oversee bidding of the project.

Saddleback Ridge Road provides the sole means of access for a ridge top residential neighborhood. Accordingly, the Home Owners Association required Saddleback Ridge Road remain open to residential traffic and emergency vehicles for the duration of construction.

Our design team worked closely with the Geotechnical Engineer to evaluate repair options. Construction costs of each option were estimated and the least cost option selected. The design team devised a landslide stabilization system which kept one lane open to traffic, did not require temporary shoring or the removal of existing crib-walls. The stabilization system consisted of a reinforced concrete cast-in-trench (CIT) wall supported on a series of reinforced concrete piers and grouted high strength steel tie-backs.

The Geotechnical Engineer recommended the landslide stabilization structure support a design soil pressure of 1,200 psf and an additional surcharge to account for traffic loads. Tieback reactions were also limited to 150,000 pounds. Because of the high unit cost of cast-in-drilled-hole concrete piers, the design team sought to minimize the number of piers and maximize the load demand on the tie-backs. Close coordination with the Geotechnical Engineer coupled with Mesiti-Miller Engineer's experience and familiarity with landslide stabilization systems enabled our design team to successfully address the design challenges presented, while producing a design which was within the budgetary constraints of the Owner.