



Plate Piles™ Stabilize Mudflow

Danville, California

The Geopier SRT® system used to prevent mudflows

Description: A 300 foot high slope has consistently been producing debris and mud flows during periods of high rainfall. The properties located at the toe of the slope have suffered from the accumulation of mud and debris during these high rainfall winter events.

Geopier Solution: In an area about one acre in size, 2,500 six-foot-long Plate Piles™ were installed. The Plate Piles were installed in 4-foot by 10-foot staggered arrays. The slope was initially regraded to fill in the gullies, and then the Plate Piles were driven into the weathered and fractured sandstone, claystone, and siltstone bedrock found at three to four feet below the ground surface. Shallow refusal was encountered at some locations where bedrock was near the surface and the Plate Piles were not needed in these locations. Erosion protection consisted of wattles and straw.

The Plate Piles were driven with a 306 Cat Excavator equipped with a Stanley air hammer. The air hammer was adapted with a driving shoe that fits over the top of the angled steel. Several versions of the adaptor were tried using hardened steel components. The Plate Piles weigh 47 pounds each, light enough to lift, but not to carry several hundred feet up the hill. So the bucket of a small track-mounted front-end loader was used to transport the Plate Piles uphill to the worksite.



PROJECT HIGHLIGHTS

Project:

Danville Mudflow Prevention

System:

Geopier SRT® system

Installation:

2,500 Plate Piles