

PROJECT PROFILE



Project Basics

Project Name: Colorado I-225 Slope Stability Project
Installation Date: May 2016
Product Type: Western Excelsior Xtreme Armor System™ (XAS) utilizing PP5-Xtreme with Percussion Driven Anchors (PDAs)
Project Location: Greater Denver Area, Colorado

Project Overview

Denver Colorado is a sprawling, busy metropolis at the foot of the Rocky Mountains. In the Northeast quadrant of the city, I-225 connects I-70 and I-25, allowing travel from the south end of the city to the airport and along a busy industrial corridor. Traffic interruptions are a significant problem for the Colorado Department of Transportation (CDOT) as lane closure means long delays for drivers. A retaining wall had been constructed along one portion of the highway, with a steepened slope leading to a neighborhood above and behind the wall. Saturated from winter snowfall, the slope was particularly vulnerable to spring rains. Once fully saturated, the weight and moisture content of the slope created instability which allowed large masses of soil to slide off the slope and into the shoulder of the road. This led to repeated soil clean-up and replacement, lane closures, and unacceptable direct and indirect costs. After conversations with Western Excelsior, Xtreme Armor System was the solution of choice for CDOT.

Project Site Installation

The site was tailor made for XAS, which could be trenched and anchored behind the wall and extended upslope. The slope was reconstructed, smoothed to grade, seeded and prepared for the XAS installation. Tie-down fasteners were used to hold the material in place while anchoring, prevent tenting and aid in immediate erosion control. Percussion Driven Anchors (PDAs) were installed on regular intervals at approximately one anchor for every two square yards. Vegetation established quickly and was soon robust.

Performance

After installation, the site was monitored for performance. The system quickly disappeared, blending in with the environment and becoming imperceptible. Vegetation took hold and the system has remained stable, eliminating any erosion and slope stability issues for the area. The economy of both the system and installation made the solution ideal for CDOT. The performance of the system made the solution ideal for the I-225 drivers, a complete win-win.



Rapid snow melt and spring rains resulted in shallow slope failures (top). The XAS system installed with percussion driven anchors over prepped and seeded soil, provided surficial slope stability and resulted in a stable vegetated slope (center, bottom).

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