

I-225 SLOPE STABILITY GREATER DENVER, CO



Problem



Solution



Result

Application: Steep Slope Stabilization

Product: PP5-Xtreme + Anchors

Site Issues: Roadside application • Steep slope • Cold climate •

Reduce maintenance cost • Previous repeated slope failures

Problem: 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. Atop the wall, a steepened slope lead 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 lead to repeated soil cleanup and replacement, lane closures, and unacceptable direct and indirect costs. After conversations with Western Green, Xtreme Armor System (PP5-Xtreme HPTRM + Percussion Driven Anchors) was the solution of choice for CDOT.

Solution: 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.

Result: 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 for everyone.



PRODUCT HIGHLIGHTS

- PP5-Xtreme was installed along the steep slopes and secured with percussion driven anchors.
- PP5-Xtreme HPTRM is optimized for steep slopes, with its UV stability and woven synthetic construction.
- The extended longevity of the product allows for permanent erosion protection and support of vegetation.