



## CASE STUDY LOST TRAIL PASS SLOPE STABILIZATION

Slope Stabilization  
Ravalli County, MT



### PROJECT SUMMARY

Lost Trail Pass is located between the border of Idaho and Montana, and is about a half mile west of the continental divide. The area is named after journal entries from explorers Lewis and Clark that suggested the duo had gotten lost in the area. Today, Highway 93 provides travelers a direct route to the summit.

A slope adjacent to the roadway was experiencing slope failure even though it was reinforced with geogrid layers. The Western Federal Lands Highway Division (WFLHD) wanted to reinforce the slopes with a long-term solution that would complement the natural environment. Additionally, the roadway is located in a remote area, so a solution that is easy to transport was needed.

ARMORMAX® Engineered Earth Armoring System was selected to stabilize the slope. ARMORMAX is a solution for erosion control and surficial slope stabilization that provides vegetated reinforcement, improves the factor of safety, and significantly reduces the probability of failure. The system is composed of Engineered Earth Anchors that are designed and tested for compatibility and performance with our High Performance Turf Reinforcement Mats (HPTRM) to increase slope stability for up to 75 years.

### PROBLEM

Slopes adjacent to Lost Trail pass were failing, jeopardizing the structural stability of the roadway.



### SOLUTION

ARMORMAX with B3 anchors was installed to provide surficial slope stabilization.

**ARMORMAX**<sup>®</sup>  
Engineered Earth Armoring System

[PropexGlobal.com/Armormax](http://PropexGlobal.com/Armormax)

## FEATURES & BENEFITS

- Provides permanent erosion protection for up to 75 years
- Withstands hydraulic and non-hydraulic stresses
- Ease of installation reduces time and labor costs
- Reinforces vegetation
- Promotes infiltration of surface water
- Outlasts other slope reinforcement methods yielding significant cost savings
- Highly UV stabilized for applications with little or no vegetation
- Lightweight and easily transported into areas with access challenges

The slope had a maximum height of approximately 85 feet and, at the steepest point, a 0.75 Horizontal: 1 Vertical (0.75H:1V) slope gradient.

Propex analyzed the slopes to determine the appropriate solution for surficial slope stabilization. Additionally, a 450 psf snow loading was applied to the surface of the slopes in the analysis to account for the heavy snowfalls experienced in the winter months.

Based on the geotechnical analysis, Propex suggested the ARMORMAX system be installed using B3 earth anchors. A section of approximately 600 feet, ranging in height from 35 to 85 feet tall was stabilized with the ARMORMAX system.

The installation took about one month to complete, and the roadway was never closed during that time. The slope has begun to vegetate and no instability or erosion is present.



## PERFORMANCE

ARMORMAX successfully stabilized the slope, proving vegetated reinforcement for up to 75 years.

## INNOVATION TO BUILD ON™



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PGS-1643E-001 (05/2020)