Landslide Reclamation and Innovative Concepts for

GeoStabilization International

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GeoHAZARD MITIGATION EXPERTS
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BRANCH OFFICES: Arizona, British Columbia, California, Colorado, Kentucky, North Carolina, Ontario, Oregon, Tennessee, Utah, and Virginia
GeoStabilization International

United States and Canada

Eastern US

CA, NV

Western US
Primary Geohazards for Road Infrastructure

- Rockfall
- Sinkholes
- Landslides
Geohazard Mitigation Technologies

- GSI On Staff Engineers, PhDs, and Repair Technology & Logistics Experts (Marty Woodard, PhD, PE, PG; Frank Amend, PE)
- Emergency Response, Assessment, Analysis, Modeling, and Engineering
- Design-Build Solutions with Warranty
- Specialty Tools and Equipment
- Rapid Mobilization and Repair Implementation
Launched Nails
Analysis & Modeling
Slope Stability Modeling
The Soil Nail Launcher
Original vessel developed by the British during war time.

Breech Valve

Dynamic Installation
Generates a shockwave that causes the soil particles to elastically deform or “jump away” from the nail.

The bars enter without significant abrasion or loss of exterior corrosion protection.
The Soil Nail Launcher can be used for above road and below road applications where immediate support is needed.
Rapid Site Ingress/Egress
(Or get run over by a train)
Drilled & Grouted Soil Nails
Drilled & Grouted Strand Anchors
Limited Access Drilling
Limited Access Drill Rigs
Limited Access Drilling
Stained Shotcrete
Sculpted & Stained Shotcrete
BioWall™ - An Alternate to Shotcrete
Geosynthetically Reinforced Soils (GRS), which is also known as Geosynthetically Confined Soils (GCS®)

Photo courtesy of M. Adams
Spacing Controls Performance
....Not Strength of the Inclusion

BASED ON
NCHRP REPORT 556
COLORADO DOT GCS DEMO WITH ....

BEDSHEETS??

8 INCH SPACING
BRIDGES ON GCS™ ABUTMENTS
DEFIANCE COUNTY, OHIO
DESIGNED WITH CRITERIA PROVIDED IN NCHRP REPORT 556
GRS Benefits
1. Reduced Construction Cost (25-60%)
2. Reduced Construction Time
3. Less Weather Dependent
4. Field Modified Design – Flexible
5. QA/QC Advantages
Emergency Repair – Rock Fall Mitigation
Emergency Repair – Rock Fall Mitigation
Above Road and Below Road Landslides / Earth Slides
Blevins Landslide Emergency Project
Reclamation Project

Authorized by:

DIVISION OF MINED LAND RECLAMATION
ABANDONED MINE LAND GROUP

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PAID BY THE VIRGINIA COAL INDUSTRY