SR 87 Curve Realignment Slope Stabilization Using High Strength Steel Wire Mesh

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OUTLINE

- Project location and background
- Project Instigation
- Geological setting
- Why Stabilize
- Why Mesh Slope Stabilization
- Details of the System
- Lessons Learned
In 8 yr. period:
- 45 reported crashes
- 3 Incapacitating
- 4 Fatal crashes
GEOLOGICAL SETTING
Paleo-Stream Deposits overlying Phyllite

SR87 Slate Creek Curve Reconstruction and Truck Escape Ramp
Existing Site Conditions
TRACS No. 087 GI 226 H8207 01C
Terracon Project No. 65125206

F.S. = 1.2

Name: Gravel with Clay and Sand
Unit Weight: 140 pcf
Cohesion: 0 psf
Phi: 40 °

Name: Phyllite
Unit Weight: 170 pcf
Cohesion: 600 psf
Phi: 40 °

Exhibit B-1
Geophysical Line and Boring Locations
WHY STABILIZE

SR87 Slate Creek Curve Reconstruction and Truck Escape Ramp
Alternative 3 Slope Reconstruction
TRACS No. 087 GI 226 H8207 01C
Terracon Project No. 65125206

F.S. = 1.5

Name: Gravel with Clay and Sand
Unit Weight: 140 pcf
Cohesion: 0 psf
Phi: 40°

Name: Phyllite
Unit Weight: 170 pcf
Cohesion: 800 psf
Phi: 40°
WHY MESH SLOPE STABILIZATION SYSTEM

- Alternative 1 – Do nothing
- Alternative 2 – Remove Paleo-Stream deposits down to the Phyllite bedrock. After further geophysical exploration this option is not feasible.
- Alternative 3 – Mesh Slope Stabilization with steel bar anchors. Chosen due to aesthetics, cost and sustainability.
WHY MESH SLOPE STABILIZATION SYSTEM

- Alternative 4 – 8’ x 8’ concrete plates anchored with steel bar anchors. Not chosen due to aesthetics and costs.

- Alternative 5 – Soil Nail Walls; two tiers. Not chosen due to past history with soil nails in the area and cost.
MESH SLOPE STABILIZATION DETAILS

TYPICAL CROSS SECTION, GROUND ANCHOR AND MESH SLOPE STABILIZATION SYSTEM

1. TYPICAL CROSS SECTION, GROUND ANCHOR AND MESH SLOPE STABILIZATION SYSTEM (N.T.S.)
MESH SLOPE STABILIZATION DETAILS

TYPICAL ANCHOR ARRANGEMENT
N.T.S.
LESSONS LEARNED (reinforced)

- Performing site specific exploration is necessary.
- **Geophysical** exploration when calibrated with specific boring logs can be useful in difficult terrain.
- Use of **new technologies** can be beneficial.
- Use of new technologies is **difficult to specify** and remain generic for a public project.
Questions?

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