

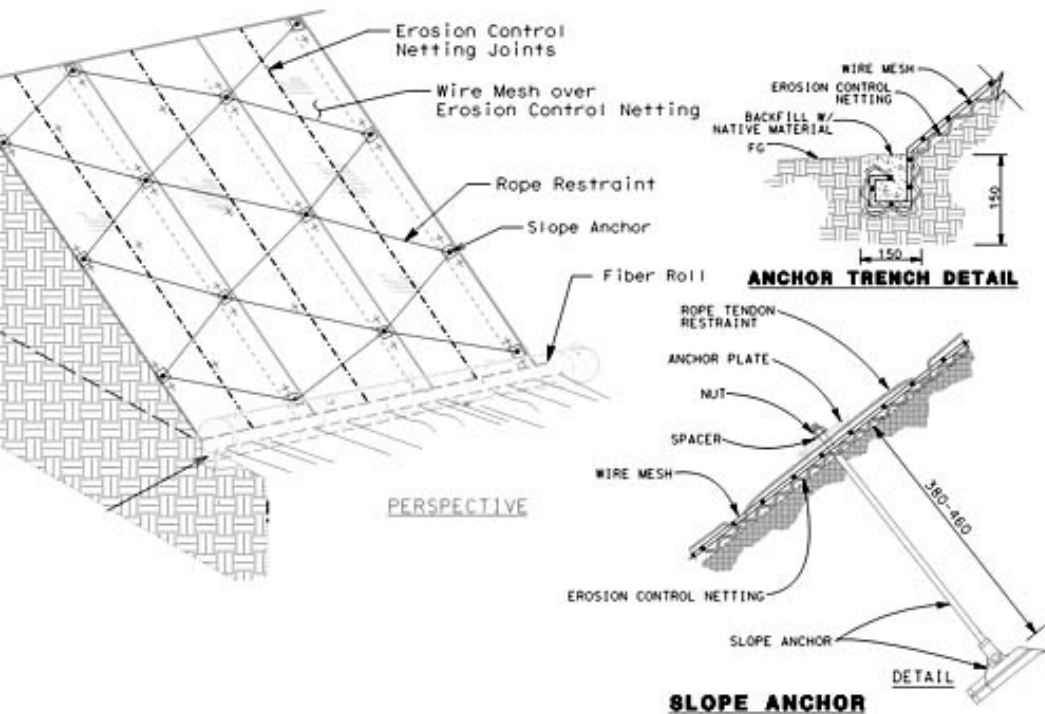
# Part 7

# EROSION MATS



- **Cut slopes comprised of granular or blocky material may appear “raw” and unsightly; presenting a real challenge to effectively mitigate erosion or improve viewing aesthetics**

# SLOPE ANCHORS & COIR NETTING



- The wire mesh and coir netting are fastened in place with slope anchors. Note criss-crossing restrainers.
- Composed of either ductile iron or aluminum, the slope anchor is designed to provide holding capacity as well as pull out resistance once locked in place.
- A 1/2 inch diameter threaded anchor rod, 30 inches in length, secures the anchor to a surface mounted plate.
- Anchor plates, as seen in the photo on previous slide, are composed of either metal treated with corrosion-resistant coating, or hardened polyethylene.



# WIRE BLANKETS over coir netting

- Use for cut and fill slopes 1.5:1
- Wire blanket is composed of **biodegradable coir netting** sandwiched together with a welded wire mesh, that is anchored in place with slope anchors.
- A vegetative cover is provided by a final hydroseeded application of fiber, seed, and fertilizer.
- Braided coir strand weave with 3/4 inch openings with 63-70% open area, sufficient to germinate hydroseeded material. This coir netting has an estimated life span of 4-6 years.
- 2" x 4" welded wire mesh placed over the coir netting to provide strength. WWM sections fastened together with 10-gage wire.





## TURF REINFORCEMENT



● Reinforced Rhizome Layer

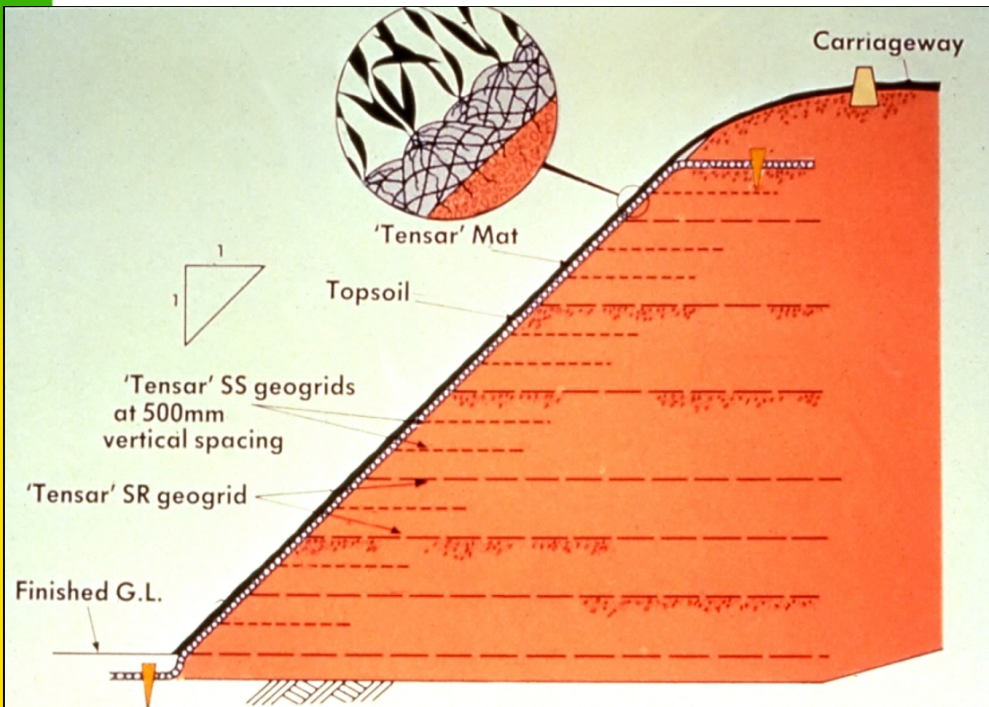


**Turf reinforcement mats** provide an excellent anchor for grass and can resist rill erosion on very steep slopes





**Turf reinforcement mats** have been successfully applied to slopes as steep as 45 degrees in humid areas (these examples are from Atlanta).



Sometimes this surface treatment can be combined with “deeper” stabilization techniques, such as **Soilnails**.



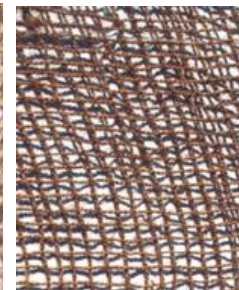
# Jute/Coir matting



- Coir fiber is made from the outer husk of a coconut.
- 100% biodegradable Geotextile fabric used for erosion control on slopes, or to enhance sedimentation along eroding channels. Typically lasts 5 to 7 years
- They are available in a variety of products, such as: coir-synthetic woven turf-reinforcement mats; woven bristle coir mats; and stitched mattress coir mats.
- Vegetation is usually planted to help anchor the mats and provide a natural appearance
- Open weave mats tends to perform better than stitched complete cover mats



Open  
weave coir  
mat



Woven  
bristle coir  
twine mat



Woven  
coir twine  
mattress



Stitched  
complete  
cover mat





- **Materials with high friction and low cohesion can erode, presenting challenging problems with debris accumulation, as well as cliff regression**
- **Surficial erosion can be tackled in a variety of ways, all of which require attention to details and experience**
- **These are eroding sea cliffs in California**





- **A Word of Caution:** This is what happens when the coconut erosion nets are laid over an incised gully network, without being staked “*skin tight*” to the exposed ground surface; or the gullies being filled and track walked, *prior* to covering.





- **Coir open weave coconut erosion mat applied to steep, incised sea cliffs. Note how mesh has been nailed tightly to slope, and around existing brush and shrubs. This product show the BioNet extended-term erosion blankets from North American Green. These are biodegradable nets made from coconut fiber.**



# Contouring Coir erosion control mats

- The coir mat must fit snugly over the ground in order to have the desired effect. The earthen colored mats tend to blend in with their surroundings.
- Note red, white, and green dye spots on the mats, which can be used for specifying revegetation







**Turf reinforcement mats** are being employed to stabilize slopes and ephemeral channels, as shown in these examples.