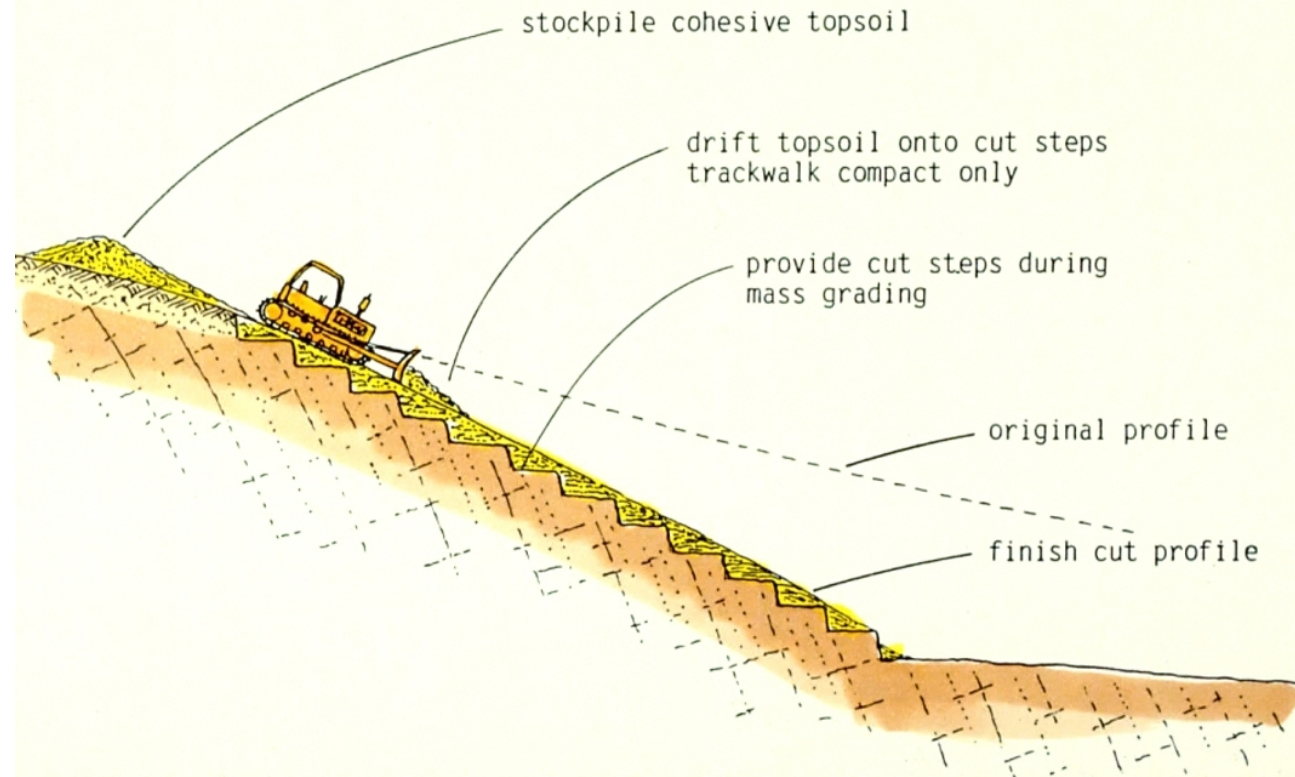


Part 8

CUT SLOPE RECLAMATION

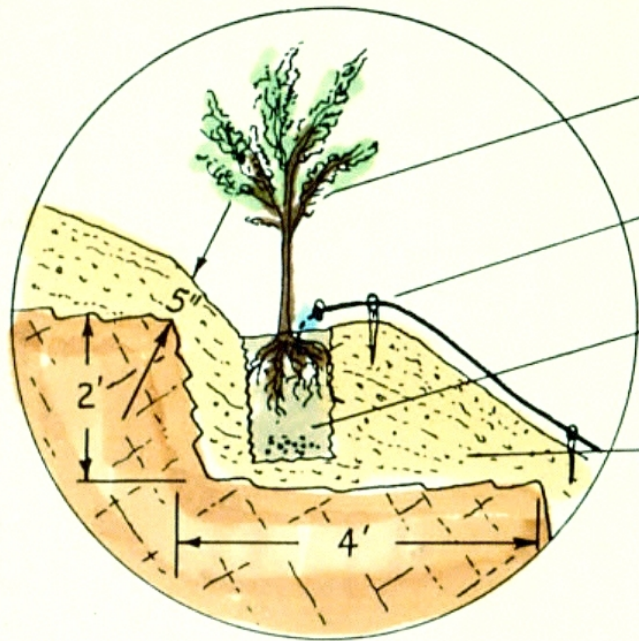
Stepped Cut with Soil Fill and Planting



- **Bedrock cuts** in granular materials can be graded as stepped cuts, then backfilled with cohesive soil to provide a planting base with decreased susceptibility to rill erosion



- **Example of cut steps that have been infilled with cohesive topsoil to promote re-vegetation. The section has been exposed by a temporary haul road cut**



provide desired vegetation; 10 gal woody veg typ.

provide drip irrigation; 1 gpm emitters typ
timers run 2X/day 5 min ea typ

auger 12"-dia hole, min 18" deep; provide
slow releasing fertilizer/nutrients

cohesive topsoil backfill; trackwalk no
greater than 7.5 psi track pressure

Soil filled steps allow planting of brush and woody vegetation on top of the bedrock cut. Small pipes may be used to convey drip irrigation water down to the root tips, so they are pulled down, into the underlying soil or rock, where water can be infused from joints.



- Selected planting of **woody vegetation**, using 10 gallon tree cans set in power augured holes with slow releasing nitrogen fertilizer. Taken in 1983 shortly after grading.



- **Same slope as viewed 6 years later, during the dry season in 1989. The survival rates and trunk diameters are tied to the severity of jointing and available water in the underlying bedrock.**



- **Same slope as seen in 2001, 18 years after planting. The near continuous shade canopy has promoted growth of the undersized trees as well.**



- **Biotechnical methods** are limited in their ability forestall slope instability insofar as their depth and density of rooting, as seen in this landslide scarp, which was permeated by countless roots, but still failed, because of excess pore pressures.



J. David Rogers, Ph.D., P.E., P.G. holds the Karl F. Hasselmann Chair in Geological Engineering at the Missouri University of Science & Technology. He can be contacted at rogersda@mst.edu

About the Presenter

- Professor Rogers owned engineering consulting firms in Los Angeles and San Francisco and a general engineering contracting firm prior to entering academia.
- Professor Rogers served as Chair of the Building Codes Committee of the Association of Environmental & Engineering Geologists between 1990-97 and was AEG representative to the International Conference of Building Officials (ICBO) while the 1991, 1994 and 1997 UBC's and 2000 IBC were developed.
- Since 1984 he has taught short courses on grading and excavation codes for ICBO, the University of Wisconsin, University of California, the Association of Bay Area Governments and the City of Los Angeles.