

# A STEEP ENDEAVOR

## Revamping slopes along I-580



**Julie Etra, CPESC**



**Barb Santner**

“  
The most  
successful  
treatment  
consisted of the  
two passes.  
”

Julie Etra, CPESC, is president of Western Botanical Services. Etra can be reached by e-mail at [etra.julie@gmail.com](mailto:etra.julie@gmail.com). Barb Santner is landscape architect for Places Consulting Services. Santner can be reached by e-mail at [bsantner@places-csi.com](mailto:bsantner@places-csi.com). Etra and Santner provided I-580 erosion control and revegetation specifications.

The extension of I-580 from Mount Rose Highway to Bowers Mansion cutoff will connect Reno and Carson City, Nev. This new segment covers 7.4 miles and is expected to be complete in 2011. It is being built along the east-facing escarpment of the Sierra Nevada, requiring extensive grading and construction of steep cut and fill slopes.

At the beginning of the 30-percent design phase, the entire right-of-way was inventoried by the lead designers. All plant species were identified and percent cover by vegetation, litter and rock estimated. Because more than 60 percent cover by rock was encountered in many places as a surface “pavement,” rock salvage and placement became a significant erosion control component. Extensive material testing and surveying of other successful revegetation projects in the vicinity of the freeway corridor was conducted.

The project was split into two contracts. The erosion control component of Phase I, Contract 3148, relied on salvaged topsoil with native vegetation, rock, organic matter, soil inoculants and hydroseeding with two application rates of paper mulch with tackifier. A treatment was designed which allowed for construction of 1.5H:1V slopes using salvaged and placed rock, functioning as nonengineered rip-rap top-dressed with salvaged topsoil and hydroseeded to improve rainwater harvesting and infiltration.

Although the revegetation work took place in March 2005, a sub-optimum time for the Great Basin, unusual spring storms contributed to highly successful native plant establishment, particularly of shrubs. Furthermore, there was minimal establishment of annual weeds, which are problematic on these types of projects in northern Nevada. Areas that mistakenly received less mulch than specified were noticeably weedier. The most successful treatment consisted of the two passes: a light application of mulch and tackifier with the inoculants and seed in the first pass, and the ultraviolet-dependent seeds with a heavier rate of mulch and tackifier in the second. There was some concern regarding persistence of mulch over stained rock, but it disappeared over time.

Contract 3292 is underway, and erosion control specifications have only a few changes. The contractor conducted soil testing on topsoil in place and stockpiled topsoil. It was determined that this material was adequate for native plant growth, and the amendments were deleted. Amendments may be added if topsoil runs out. Inoculants, however, were left in the specifications. The two-pass hydraulic application, initially for topsoil-only slopes, has been specified for the entire project. Rather than the three seed mixes developed for the three soil types, at the request of the Nevada Department of Transportation (NDOT), one mix was developed for the entire project and split into the two passes. Containerized plants, primarily tree tubelings, will be planted at two interchanges. Most revegetation will occur in fall 2008.

Aspects of the project were not executed as anticipated (i.e., temporary erosion control practices and topsoil stockpile stabilization treatments). The designers are working with NDOT and the contractor to mitigate for undesirable weed cover on areas untreated this past fall and winter as well as re-examining aspects of permitting, design, oversight and bonding. Separate revegetation maintenance bonds for plant establishment are being considered. Extensive testing, research, collaboration and inadvertent splitting of the work into two contracts have helped the designers customize specifications for the current contract and optimize success. However, it is clear that even if treatment types such as temporary erosion control are included in the specifications, they will not be implemented unless there is a specific pay item for the work. **SWS**

**For more information related to this article, visit [www.estormwater.com/lm.cfm/110802](http://www.estormwater.com/lm.cfm/110802). For more information, write in 5002 on this issue's Reader Service Card.**