



RESEARCH NOTES HIGHWAY DIVISION RESEARCH SECTION

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RSN 85-7

LANDSLIDE REPAIRED WITH GEOGRID

In December 1981 a landslide occurred at Devil's Punch Bowl State Park on the Oregon Coast which severed the access road to the park. A geogrid wall was used successfully to retain the resulting vertical slope.

Alternatives considered for repairing the slide included using a tie-back soldier pile wall with precast concrete panels, an unwoven geotextile with a gunite facing, or a high-density polyethylene geogrid. The geogrid was chosen because of its low relative cost, its resistance to ultraviolet light, and its ability to provide a natural appearance when the exposed soil backfill was seeded.

The wall was constructed in 3-foot backfilled step forms with the geogrid between each lift and forming the face. As the wall gained its initial height it sagged and some of the backfill was lost through the geogrid when the forms were removed. The sagging was resolved by modifying the method of forming the wall face and the soil loss stopped when sod was placed between the geogrid and the backfill.

The geogrid wall appears to have stabilized the site. The sod placed behind the geogrid improved the appearance of the wall as well as retained the fines in the backfill. It is recommended, however, that provisions be made on future projects for watering the sod until it is well established, particularly if there is an absence of ground water or if the backfill is free-draining. Also, backfill material containing organics would be helpful to promote sod growth.

After assessing the problems of erecting a near-vertical wall, and the feasibility of establishing vegetation on a wall face, the geogrid wall has been termed a "permitted alternative" for Oregon.

Should you need information on geogrid reinforced walls contact the Research Section, Oregon Department of Transportation, and ask for:

"A GEOGRID REINFORCED SOIL WALL FOR LANDSLIDE CORRECTION ON THE OREGON COAST, Experimental Feature Final Report" by Thomas Szymoniak, Glen Thommen and Edgar Johnsen, Oregon State Highway Division, and J.R. Bell, Professor of Civil Engineering, Oregon State University, June 1985; OR 83-01.

SUMMARIES AND ABSTRACTS OF CURRENT HIGHWAY RESEARCH