

TECHNICAL REPORT TITLE PAGE

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Reinforced Slope With Geogrids	Final Report 7-89 to 3-97
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8. ABSTRACT	
<p>The objective of this research study is to evaluate the performance, maintenance requirements and cost effectiveness of constructing reinforced slope along a concrete bikeway overpass with a Geogrid system such as manufactured by Tensar Corporation or Reinforced Earth Company.</p> <p>This final report consists of two separate reports - construction and performance. An earlier design report and work plan was submitted to the Iowa DOT in 1989. From the Design Report, it was determined that the reinforced slope would be the most economical system for this particular bikeway project. Preliminary cost estimates for other design alternatives including concrete retaining walls, gabions and sheet pile walls ranged from \$204/L.F. to \$220/L.F.</p> <p>The actual final construction cost of the reinforced slope with GEOGRIDS was around \$112/L.F. Although, since the reinforced slope system was not feasible next to the bridge overpass because of design constraints, a fair cost comparison should reflect costs of constructing a concrete retaining wall. Including the concrete retaining wall costs raises the per lineal foot cost to around \$122/L.F.</p> <p>In addition to this initial construction cost effectiveness of the reinforced slope, there has been little or no maintenance needed for this reinforced slope. It was noted that some edge mowing or weed whacking could be done near the concrete bikeway slab to improve the visual quality of the slope, but no work has been assigned to city crews. It was added that this kind of weed whacking over such steep slope is more difficult and there could possibly be more potential for work related injury.</p> <p>The geogrid reinforced slope has performed really well once the vegetation took control and prevented soil washing across the bikeway slab. To that end, interim erosion control measures might need to be considered in future projects. Some construction observations were noted. First, there is no specialized experience or equipment required for a contractor to successfully build a low-to-medium geogrid reinforced slope structure. Second, the adaptability of the reinforced earth structure enables the designer to best fit the shape of the structure to the environment and could enhance aesthetic quality. Finally, a reinforced slope can be built with relatively soft soils provided differential settlements between facing are limited to one or two percent.</p>	
9. KEY WORDS	10. NO. OF PAGES
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