

PROJECT DESCRIPTION

Evaluation of Metal Tensioned Systems



Location:
Throughout US

Client:
D'Appolonia
Engineers for
National
Cooperative
Highway
Research
Program

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Application of Recommended Practice to Evaluate Rock Bolts Supporting the Mt. Barron Rock Cut Along I-93 Near Woodstock, NH.

Since the early 1970's transportation agencies have been using prestressed ground anchors (strands and bars), soil nails, and rock bolts for the construction and repair of foundations and retaining walls, and for supporting excavated and natural soil and rock slopes. The condition of aging existing systems is uncertain since the anticipated service life for these systems is approximately 50 years, and because, generally, elements have not been inspected due to difficult access. As part of a cooperative research effort, McMahon & Mann Consulting Engineers, P.C, D'Appolonia Engineers, P.C, and the University at Buffalo developed a recommended practice that addresses the challenges associated with access, and provides a valuable tool for condition assessment and estimating remaining service life for these systems (see NCHRP Project 24-13 "Evaluation of Metal Tensioned Systems in Geotechnical Engineering," at <http://www4.trb.org/trb/crp.nsf/All+Projects/NCHRP+24-13>). The recommended practice includes a suite of non-destructive and invasive tests that can be conducted on elements installed underground to assess their condition.

The protocol and recommended practice were applied to a number of field studies as part of NCHRP 24-13. Since the project was completed, the test methods have been implemented on projects for the New Hampshire Department of Transportation (see the above photograph) and for the Nevada Department of Transportation.