

# Questa Mine

## Retention System for New Building Construction – Questa, New Mexico

### HISTORY

The Questa Mines have gone through some ups and downs over the years. Established in 1916 to mine molybdenum from the earth in New Mexico, the mines have seen times of both boom and bust.

Molybdenum is not found as a free metal, but rather in varying oxidation states within other minerals. It has the sixth-highest melting point of any element and easily forms hard, stable carbides in alloys. It is used in the making of steel alloys, including high strength alloys and super alloys.

Nicholson Construction Company, a Pennsylvania-based firm, was awarded a contract to design and build a retention system for a new construction project in Questa, NM. Nicholson designed a 29,846 square feet reinforced shotcrete wall, with 36,540 linear feet of steel anchors.

### PROBLEM

The schedule was extremely tight on this project. There were many difficult conditions on the project, including soil conditions and a crowded jobsite. The Nicholson team had the task of installing a multi-tiered wall and the additional challenges of using conventional drilling to install solid bar products and the unknown depths of competent materials.

### SOLUTION

Nicholson's design team chose Nucor Skyline's hollow bar anchors because of the ease of their installation and improved speed to install. Another reason was the ability to drill the hollow bar anchors through varying depths of



sub-surface conditions. Nucor Skyline provided R38 hollow bar anchors, totaling over 4,200 galvanized, 3-meter bars. The design load of the hollow bar piles was 13.6 kips and was tested to 27.2 kips.

Nicholson's on-site crew was well organized and were able to efficiently install the hollow bar anchors and shotcrete wall. They were able to meet their client's tough deadlines. Nucor Skyline was instrumental in meeting that deadline due to their large inventory of materials that were needed to complete the project in a timely manner.

### PROJECT PARTNERS

#### Owner

Nicholson Construction Company –  
Canonsbury, PA

#### Project Manager

Paul Krumm, Operations Manager

### PRODUCT

4,200 3-meter R38N hollow bar  
600 3" cross cut carbide bits

### PROJECT TIME FRAME

September 2014