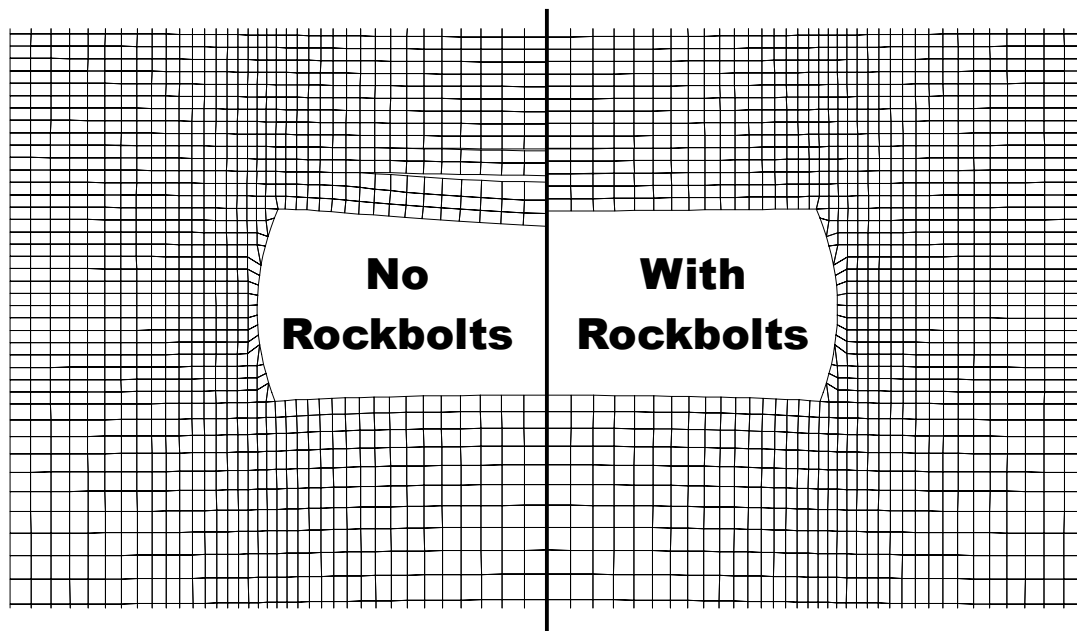


Minnesota Library Access Center FLAC Analysis

Minneapolis, MN

Construction for the Minnesota Library Access Center (MLAC), located on the University of Minnesota West Bank Campus in Minneapolis, started in June 1997 and will be completed in July, 1999.

This University of Minnesota project consists of two storage caverns, a 4-story conventional surface building, two vertical shafts, and a mined portal entrance. The mined caverns and tunnels will have a footprint of 106,000 square feet and an excavated volume of 95,000 cubic yards. Each cavern is 600-feet long, 25-feet high, and 65-feet wide. The shafts will provide vertical circulation between the surface and mined space and emergency egress. The mined portal will provide a drive-in entrance for vehicles as large as semi-trailer trucks.



The graphic illustrates predicted differences (using FLAC from Itasca Consulting Group) in cavern roof behavior with and without rockbolts. The deformed shapes of the cavern, with deformations magnified 50x, are shown. Without rockbolts, the limestone roof beds separate at bedding planes present in the limestone. With untensioned rockbolts, bed separation is practically eliminated, and overall deformation of the roof is substantially reduced.

Owner — University of Minnesota

Completion Date — July 1999

Construction Cost — \$10 million

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