



Stability Analysis of an Historic Dry Stack Masonry Dam in New Hampshire

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The authors have performed a stability evaluation of a dry stack (no mortar or grout) masonry dam using a modified two-dimensional gravity analysis method. Since the masonry is ungrouted, the authors concluded a traditional two-dimensional gravity analysis would not accurately assess the behavior of the dry masonry wall. Research was conducted on current literature regarding the analysis of dry stack masonry walls, and a modified gravity analysis was identified and applied. Four load cases were considered, including flood and seismic. The assessment concluded that parameters such as wall unit weight and vertical wall batter angle had significant effects on the analysis results and that additional information to better define these critical parameters was necessary to more accurately assess the dam's stability. Preliminary findings showed acceptable stability results for certain combinations of wall unit weight and vertical wall batter angle; however, many likely wall batter angles produced marginal-to-unacceptable stability results for flood and seismic load cases.