



PROJECT PROFILE

Castlewood Canyon Bridge

Historic Restoration and Structural Repair | Castle Rock, CO



CLIENT

Restruction Corporation

BACKGROUND

Built in 1948, the Castlewood Canyon Bridge spans 232 feet across Cherry Creek near Franktown, Colorado. It features two 46-foot-deep concrete arches that span between concrete column piers and support a 35-foot-wide deck. It was once called the “bridge to nowhere” because, for nearly twenty years after it was built, the south end of the bridge was also the end of State Highway 83. Today, the bridge is considered a historic structure because of its distinctive arch design and its dramatic setting within Castlewood Canyon State Park.

The bridge had sustained extensive deterioration of the concrete and reinforcing steel as a result of chronic, long-term exposure to moisture and deicing salts. Repair required the removal of unsound concrete behind the reinforcing steel for substantial distances along the lengths of the arches, potentially weakening the affected members during construction. Repairs were further complicated by a requirement to keep the bridge open for limited public traffic during repairs and the need to support heavy construction equipment, such as cranes and concrete trucks.



SOLUTION

WJE performed structural analyses of the arches and determined critical dimensional limitations for staged demolition and repair. Based on these results, recommendations were provided for staggering and sequencing the work in a manner that would maintain the structural integrity of the bridge while safely supporting the required traffic and construction loads. During construction, WJE developed supplemental field modification details to address conditions encountered as the repair work progressed.

