

# CASE HISTORY

**Project:** *Fall River, Massachusetts Rt 79 Exchange*

Site Condition: Cracks in the intrados from the water line to keystone

This stone arch bridge over Quequechan River on Central Street in Fall River, Massachusetts was built in 1903 and has a span: 25.9 ft. length: 34.1 ft. and deck width: 26.2 ft.

The bridge currently has an operating rating 102.3 tons (93.0 metric tons) an inventory rating 102.3 tons (93.0 metric tons). The evaluation is structurally deficient with a rating of 52.2. This rating warranted a remedial repair in conjunction with the rebuilding of the RT 79 interchange.

North Side Elevation



Within the barrel of the bridge seven cracks have developed over the years with crack separation from .25 inches to 3 inches in various locations. (See: Vertical Crack) The owner decided not to replace the tidal waterway but to consolidate the ring granite stones in place. Ramboll Engineers in calibration with Cintec America designed a remedial repair scheme which would allow the bridge to retain its original look and stay in service while the repairs were being done to the bridge. During the drilling and anchors inflation the bridge stayed in use with an average traffic flow of 6,000 cars a day.

The remedial repair consisted of wet core drilling 8, 2" diameter holes into the face arch ring stones from the North and South direction. The drilled 18 drilled hole lengths were 18.4", 27.4" or 16.4". The length were designed so they intersected the cracks and extended 8' last the last crack. After the holes were drilled Cintec anchors which, are number 8 stainless steel rebar grade 2205 (1") encased in a patented sock were inserted to the holes and Cintec grout pumped into the sock. The cementious grout inflates the sock and locks the stainless steel rebar in place thought the full length of the drilled hole through the arch stones.

The drilling and installation of the Cintec anchors was performed by Cintec directly.

**Owner** Massachusetts Department of Transportation

**Engineer of Record** Cintec Repair Ramboll UK and Structures North

**General Contractor** Barletta Heavy /O7G, Joint Venture