

State Highway 183 Bridge Over MacArthur Boulevard

IRVING, TEXAS

SUBMITTED BY SIKA CORPORATION

State Highway 183 is a major east/west highway between Dallas and Fort Worth, and a major route to the south entrance of DFW Airport. The highway carries three lanes of traffic in each direction. MacArthur Boulevard is a major north/south arterial



route carrying two lanes of traffic in each direction through Irving.

The State Highway 183 bridge over MacArthur Boulevard, constructed in 1953, consists of two abutments and three bents that support a series of parabolic beams. The beams are further strengthened by diaphragms that support the concrete deck with an asphalt overlay. The bridge was widened in 1969



to include 2-36 ft (11 m) wide roadways with 12 ft (3.7 m) shoulders and a center traffic barrier. All elements are cast-in-place, reinforced-concrete.

On the morning of Saturday, May 28, 2005, the start of a Memorial Day weekend, a fuel tanker heading east on State Highway 183 barreled through a guardrail, spiraled off the bridge, and exploded several times. There was extensive heat, and as a result, concrete on the bridge columns and beams spalled and “popped.”

Emergency investigations were completed by the end of Memorial Day Weekend. Significant concrete removal and replacement at beams, columns, decks and diaphragms as well as strengthening of columns, pier caps and beams were required. Three separate concrete repair contractors were utilized to work around the clock in order to meet the aggressive deadline and avoid liquidated damages.

Repairs done on this project ten years ago in extremely challenging conditions have now withstood the test of time.

State Highway 183 Bridge Over MacArthur Blvd

OWNER

Dallas NW Area Office
Texas Department of Transportation
Dallas, TX

PROJECT ENGINEER/DESIGNER

TXDOT Dallas District 18
Dallas, TX

REPAIR CONTRACTOR

Gibson & Associates
Balch Springs, TX

MATERIALS SUPPLIERS/

MANUFACTURERS

Sika Corporation
Lyndhurst, NJ

Mobile Enterprises, Inc.

Fort Worth, TX