

## Reinforcement of structures under a severe corrosive environment.

### Bridge Street Bridge

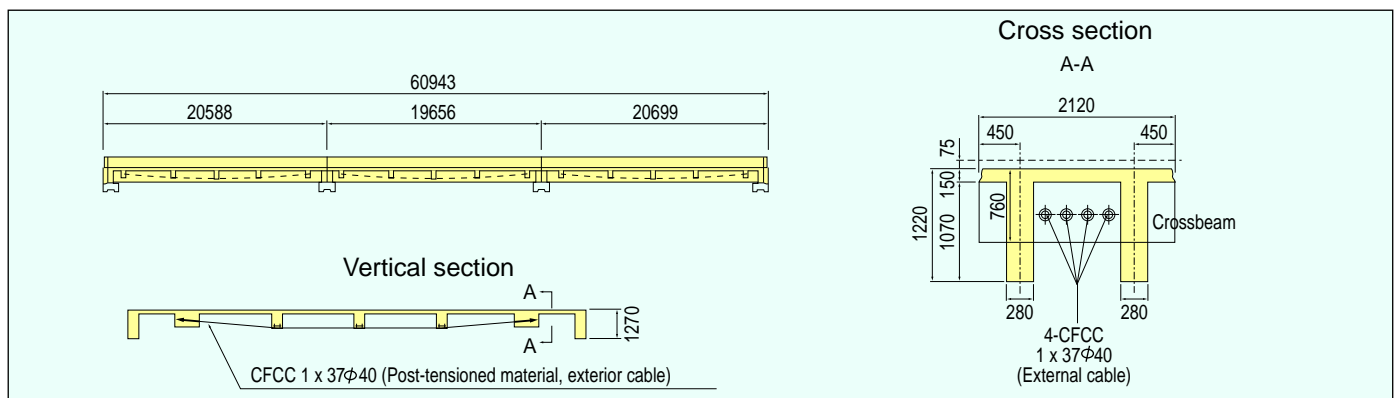
Bridge Street Bridge was constructed over the Rouge River in the U.S. (City of Southfield, Michigan) some 20 years ago, and needed rehabilitations because deicing salts caused the steel member to become in rust. Accordingly, construction of two parallel concrete bridges was planned as replacement of the failing bridge. Each bridge contains 3 spans over 63-meter length and 8.5-meter width. The second bridge was constructed of precast concrete DT beams that were reinforced, pre-stressed and post-tensioned with rods, tendons and strands produced from CFRP.

Funded by Federal Highway Administration (FHWA) and Michigan Department of Transportation (MDOT), the Bridge Street Bridge Deployment Project attracted much attention as the U.S. first bridge constructed using CFRP as the principal structural reinforcement against brine damage. The cutting edge technology that made the project innovative was a result of research conducted by Dr. Grace-led team in Lawrence Technological University. The project was awarded Harry H. Edwards Industry Advancement Awards 2002 in PCI Design Awards Program and other prizes.

Client	City of Southfield (Michigan, US)
Location	City of Southfield
Dimension	3 spans over 63-meter length and 8.5-meter width (beam length: 21 meters)
Material	CFCC 1 x 37 $\phi$ 40.0 CFCC 1 x 19 $\phi$ 21.8 CFCC 1 x 7 $\phi$ 17.8, $\phi$ 12.5, $\phi$ 10.5
Application	Post-tensioned exterior/side cables and tendons in precast concrete DT beams
Completed	May 2002



### Drawing



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