Southeast Connector Arch Bridge over the Des Moines River Concept Study

The proposed Southeast (SE) Connector is an arterial roadway construction project developed by the City of Des Moines. The purpose of the project was to construct a major, multi-lane roadway connecting the Martin Luther King Jr. Parkway (MLK) at Southwest 2nd Street to the US 65 bypass. The SE Connector improvements had to fulfill significant and far-reaching goals for the City of Des Moines and the greater metropolitan area. The overall aesthetics of the bridge had to be aligned with similar types of bridge already built as part of stage I of the MLK project and with other arch-themed projects in downtown Des Moines.

Ciorba was included in a team that was already selected for the project upon a specific request from the City of Des Moines as Ciorba's staff was the lead structural designer on a similar project previously completed for the City. The project team was led by consultant Kirkham Michael. Ciorba Group developed a concept study for a 360 foot signature-type tied through-arch bridge over the Des Moines River in the City downtown. The tied-arch featured two steel arch ribs laterally unbraced and a concrete deck continuous with the arch post tensioned tie. The post-tensioning continued in the approach spans that go over the River levees and the new riverwalk multi-use trail.

Different concepts were presented to the client and the advisory committee established for the project to cover the different aspects related to structural functionality, aesthetics and sensitivity to the context. Structural members were preliminarily sized to support a detailed cost estimate. A full three-dimensional model was developed for the structural analysis and to support renderings, animations, lighting and color palette studies. The proposed concept priced at around $12 million was not selected because of budget constraints. A multi-span Precast Prestressed Concrete I-beam bridge was selected instead.