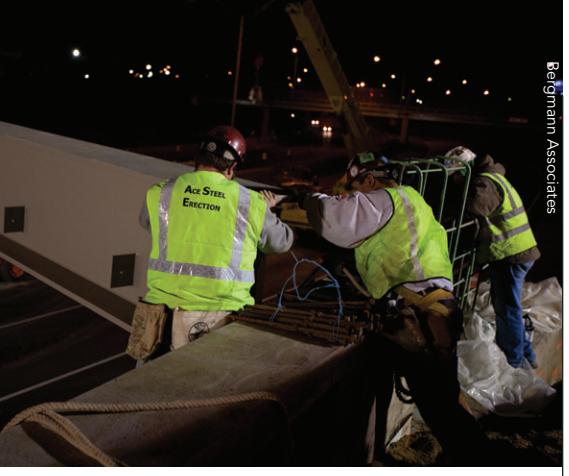


All the beams for the 9 Mile Road replacement bridge were set on three consecutive November nights, with one direction of the Interstate below closed to traffic.

beams were set during three consecutive nightly, single-bound closures of I-75.

With the structural steel being one of the major critical path items of work, pressure was immediately on the design team. "We had our design team working day and night in order to complete the steel design as quickly as possible. Design plans were completed within two weeks of the notice of award," said Jeremy Hedden, Bergmann Associates Project Manager. "I catered the dinners each night to keep everyone working as efficiently as possible."

The shop drawing review process was streamlined by the fact that High Steel and Bergmann Associates coordinated details during their development. In the end, High Steel fabricated 317 tons of steel girders, representing $1.1 million of the $12 million bridge replacement and freeway reconstruction project.

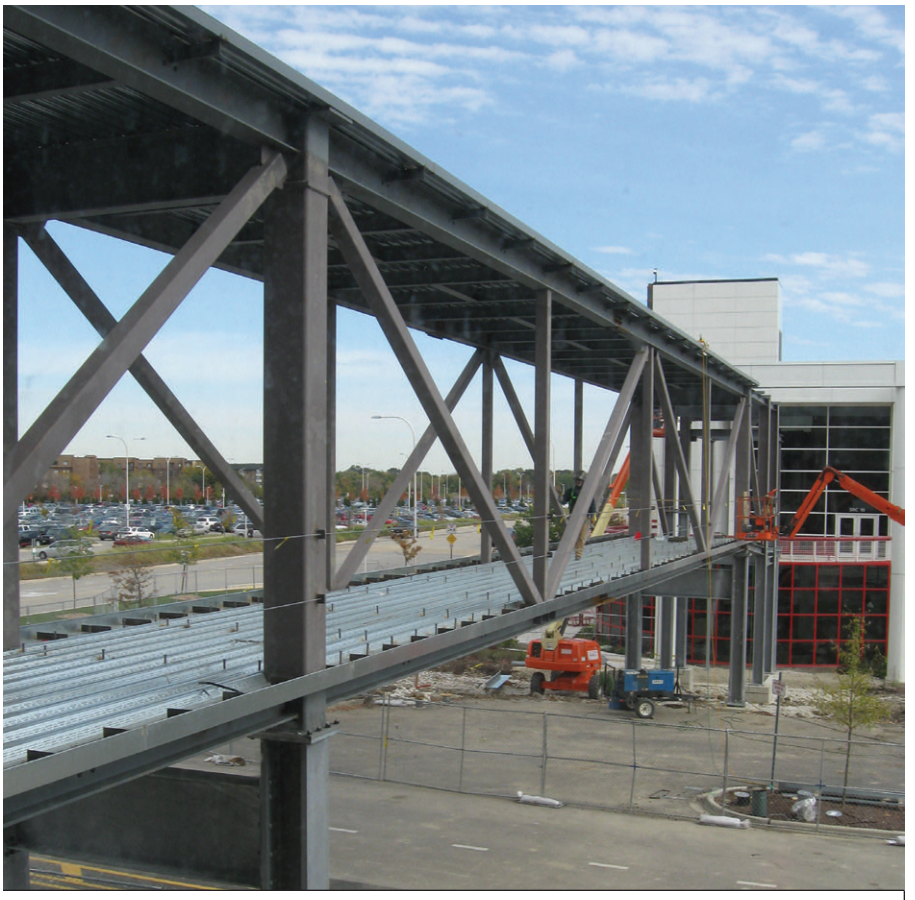
Possibly the most important participant during the whole project was Mother Nature. Unseasonably warm temperatures and dry weather assisted the contractor with completing the work quickly. Placement and curing of the cast-in-place concrete deck was completed with the use of heaters from below and insulation above. With good weather and long hours by all involved, the bridge was opened to traffic on December 11, 2009, only 65 days after the project team's notice of award. MSC

Owner
Michigan Department of Transportation

Structural Engineer
Bergmann Associates, Lansing, Mich. (AISC Member)

Steel Fabricator
High Steel Structures, Lancaster, Pa. (AISC and NSBA Member)

General Contractor
Walter Toebe Construction, Wixom, Mich.



Caption: Architecturally exposed HSS sections form the verticals and diagonals of the trusses on this bridge linking the Health Careers and Natural Sciences building to the student union at the College of DuPage.

Going West

One of the newest and most featured building additions to the College of DuPage, in the Chicago suburb of Glen Ellyn, Ill., has been integrated into the existing campus using a 96-ft clear-span pedestrian bridge. The bridge links the new Health Careers and Natural Sciences building to the existing student union. It consists of two traditional Warren type trusses supported at each end on steel columns. Truss verticals and diagonals are composed of architecturally exposed HSS sections. An AESS criterion was specified for the truss elements and connections to ensure a finished look for the exposed portions.

Our specifications required members indicated as AESS to be in compliance with the AISC *Code of Standard Practice for Steel Buildings and Bridges*, Chapter 10. In addition we have unique specification language regarding the fabrication, connection, surface preparation, and finishing of AESS members to satisfy the architect's desired look.

The pedestrian bridge began as an alternate, but thanks to a favorable bidding environment, it was able to become a reality. It is clad in alternating clear and translucent glass panels that match the exterior of the adjacent building and provide a distinctive addition and contemporary look to the growing College of DuPage campus.

The many pedestrian bridges on college campuses, although sometimes overlooked among the buildings themselves, can prove to be a visually dramatic and functional addition. Each of these bridges has become a signature aspect of the buildings to which it connects, and all have improved the overall connectivity of the schools themselves, providing an easier means of transporting students and faculty across campus, but also providing a more unified campus environment overall. From the structural engineer's perspective, the pedestrian bridge is an opportunity to provide design services for elements such as long spans and trusses that may not be encountered in typical building construction. MSC

Opposite page: The first shipment of steel arrived on the job just three weeks after the fabricator was given the notice to proceed, and two months later the bridge was back in service.

Right: Deterioration of concrete girders forced the closing of one of only two bridges crossing from the mainland to Ocean City, Md. Using a steel superstructure enabled its quick replacement and reduced the cost of repairs.

drawings approval process. A fabrication project manager was assigned to shepherd the project through fabrication.

In addition to the quick fabrication and delivery of the replacement superstructure, the SHA credits several additional factors for the project's early turnaround, including the contract's incentive/disincentive clause and a powerful nor'easter that tore through the area in early November. The crew raced to place the concrete deck a day before the storm struck, averting a potential one-week delay.

The contractor built the replacement span using the "Cape Fear," a 150-ton water rig friction crane. The crane, mounted on a 68-ft-wide barge, accessed the bay through careful navigation through the 78-ft drawbridge span of the Route 50 Harry Kelley Memorial Bridge, the only other bridge access to the Ocean City barrier island from the mainland. The strong currents and meandering channel at the Route 50 Bridge provided even more of a challenge than the narrow clearance.

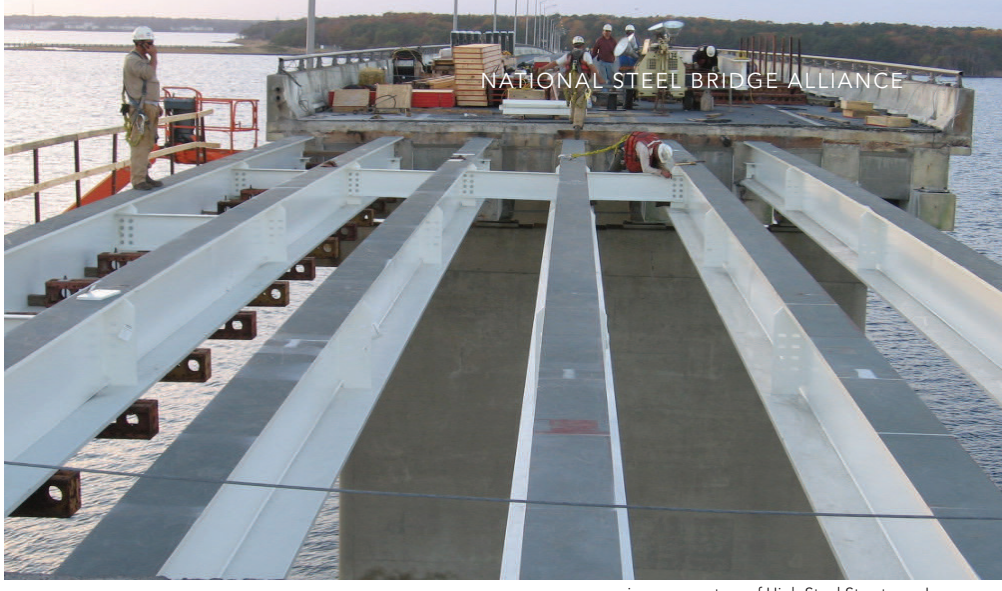
By mobilizing the large floating crane, the contractor was able to expedite removal of the span by lifting it out in just five pieces. Its high capacity allowed removal of pieces with girders, deck and parapets still intact. The crane also allowed erection of the fascia girders in pairs with all of the deck overhang formwork pre-installed.

In a letter to High Steel's president, Jeffrey Sterner, P.E., , Earle Freedman, director of SHA's Office of Structures, thanked High Steel for its fast response, citing a similar situation on the Old Severn River Bridge that occurred in 1979.

"It is extremely comforting to have a relationship with a firm like yours," wrote Freedman. "We called upon High Steel then, as we did now. A positive reaction by your firm to a similar problem, 30 years later, is a true example of why your firm continues to have such a fine reputation." MSC

Owner
State of Maryland

Steel Fabricator
High Steel Structures Inc., Lancaster, Pa. (AISC and NSBA Member)



images courtesy of High Steel Structures, Inc.

The contractor's use of a large crane expedited removal of the deteriorated span and allowed placement of the steel fascia girders in pairs with the deck overhang formwork pre-installed.