



1996 MERIT BRIDGE AWARD: RECONSTRUCTED PULASKI ROAD OVER I-55 SPUDI



THE PULASKI ROAD OVER THE STEVENSON EXPRESSWAY (I-55) interchange, located in one of Chicago's most heavily traveled corridors, was in need of major structural rehabilitation and traffic improvements to remove a traffic bottle neck. The solution was a \$12 million, 18-month modification to include the state's first Single Point Urban Diamond Interchange (SPUDI) to accommodate the 30,000 vehicles using the interchange each day.

This project represents an innovative blend and extensive meshing of new structure and existing, which was mandated both by cost and site constraints. Fortunately, the existing steel superstructure was in good shape; the main problem was an inefficient configuration. In particular, the original interchange design subjected traffic exiting and entering I-55 via a left turn to delays from a two traffic light system. This, combined with insufficient ramp storage capacity for vehicles, often resulted in backed-up traffic, which often spilled onto and affected the expressway. The SPUDI arrangement provides four new ramps, carried over the expressway, that could then be controlled by a single traffic light.

The new design included a new steel superstructure, most notably a complex arrangement of steel framing that was situated within the existing overpass and ramps to carry the four new curved SPUDI ramps up to the Pulaski Road Bridge. The new ramps span between 80' and 100'.

Considerable structure widening also was required along the existing I-55 exist ramps to increase the traffic storage capacity. The design addressed: the complexity of carrying the new ramps on both longitudinal and transverse steel framing; the necessary bracing for the considerable torsion induced by some of the many framed superstructure connections utilized; and the extensive use of expansion joints to isolate

Project Data

Steel wt./sq. ft. of deck:
35 lbs.

Cost:
\$12 million

Steel Tonnage:
825



the new and existing structure for bi-directional thermal and vibrational movements. The design also provided for live and dead load temporary support for the retained existing steel superstructure during construction.

Project Team

Designer:
Collins Engineers, Inc.
Chicago

General Contractor:
Lorig Construction Co.
Des Plaines, IL

Fabricator:
PDM Bridge
Eau Claire, WI*

Erector:
S&J Construction Co.,
Inc.
South Holland, IL

Owner:
Illinois Department of
Transportation

Judges Comments:

***“An innovative
intersection
expansion”***

***“An excellent
solution in a tight
urban setting”***

****Please note
that red text
denotes an
AISC member***