



## 2001 – Illinois Route 29 Bridge over Sugar Creek

### Description

#### Meta Fields

**Other Related Url 0 Other Related Link :** <http://www.fhwa.dot.gov/bridge/prefab/videos.cfm>

**Abc Construction Equipment :** None

**Miscellaneous Prefabricated :** CIP reinforced concrete closure joints, standard concrete overlay

**Prefabricated Bridge Elements :** Full-depth precast deck panel w/PT

**Project Delivery :** Design-bid-build

**Longitude :** -89.589744

**Latitude :** 39.780439

**State Id # :** 084-0039 (EB) & 084-0040 (WB)

**Construction Equipment :** Conventional

**Total Bridge Length Ft :** 253.1

**Max Span Length Ft :** 37.4

**Beam Material :** Steel

**Spans :** > Three-span

**Location :** Rural

**Owner :** State

**State :** IL

**Year Abc Built :** 2001

**Other Related Url :** 1

**Contract Plans :** 1

**Funding Source :** Other

**Costs :** The low bid for bridge pay items was \$1.08 million, and the total contract was \$6.77 million including roadwork and two additional bridges built with conventional decks. Cost was \$57 per sq ft of bridge deck area, compared to the average re-decking cost at that time of \$35 per sq ft. The additional costs can be attributed to first use; the Illinois DOT believes those costs will go down with increased usage and contractors becoming more accustomed to this type of work.

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**High Performance Material :** None

**Construction Method :** The existing decks of the two adjacent bridges were removed and replaced with full-depth precast post-tensioned concrete deck panels. The 7.5-inch thick, full-width precast concrete deck panels had a concrete strength of 5000 psi and were typically 7.6 - 8.2 ft long. The

eastbound bridge was re-decked with 29 panels, and the westbound bridge with 31 panels. The existing steel beams were reused and made composite with the panels. Shear keys were cast between the panels, and the panels were post-tensioned longitudinally with 1-in-diameter high-strength steel bars at 18-inch centers.

**Replacement Or New Bridge :** Deck replacement

**Existing Bridge Description :** The two adjacent four-span continuous steel superstructures on stub abutments and solid stem piers on steel piles were built in 1961. Their reinforced concrete decks were deteriorated and required replacement.

**Traffic Management :** If constructed conventionally: not available

**Average Daily Traffic At Time Of Construction :** 8650

**Dimensions :** Two adjacent bridges: (1) 253.1-ft long and 37.4-ft wide five-span eastbound bridge; (2) 251.0-ft long, 37.4-ft wide four-span westbound bridge

**Primary Drivers :**

- reduced onsite construction time
- reduced traffic impacts

**Impact Category :** Tier 5 (within 3 months)

**Project Location :** 1 mile east of Springfield