

HAER
ILL
99-JOL,
7-

ROCK ISLAND RAILROAD,
DESPLAINES RIVER BRIDGE
I&M Canal National Heritage Corridor
Crossing the DesPlaines River
South of Jefferson Street
Joliet
Will County
Illinois

HARR No. IL-60

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
P.O. Box 37127
Washington, D.C. 20013-7127

HISTORIC AMERICAN ENGINEERING RECORD
ROCK ISLAND RAILROAD, DESPLAINES RIVER BRIDGE
I&M Canal National Heritage Corridor

HAER
ILL
99-JOL,
7-

HAER No. IL-60

Location: I & M Canal National Heritage Corridor
Crossing the DesPlaines River south of
Jefferson Street
Joliet, Will County, Illinois

UTM: 16 E.409260 N.4596880
Quad: Joliet

Date of Construction: 1932

Builder: Substructure, American Bridge Company

Superstructure, Ketler-Elliott
Construction Company

Present Owner: State of Illinois

Present Use: Railroad Bridge

Significance: The DesPlaines bridge is one of four
vertical lift bridges built over the
Illinois Waterway; however, its
designers, borrowing from a lift bridge
constructed in DeValls Bluff, Arkansas,
incorporated the lift machinery into the
two towers instead of placing it
directly on the lift span.

Project Information: The Illinois and Michigan Canal was
designated a National Heritage Corridor
in 1984. The following year HABS/HAER
embarked on an extensive inventory and
documentation project of the 100 mile-
long corridor. Field work for this
project was concluded in 1988. Final
editing of the documentation was
completed in 1992.

Historians: Gray Fitzsimons, Joseph DeRose, Carolyn
Brown, and Charles Scott, 1986.

This bridge, replacing a five span through truss bridge built in 1900, was designed to accommodate the navigational need for increased vertical clearance on the DesPlaines River section of the Illinois Waterway. The American Bridge Company furnished and fabricated the steel and the Ketler-Elliott Construction Company of Chicago erected the bridge. Placed in operation in 1932, the DesPlaines River Bridge is one of four vertical lift railroad bridges crossing the Illinois Waterway. All four bridges were erected on the sites of existing fixed through truss bridges. However, the DesPlaines River Bridge in Joliet featured an innovative design for the location of its lifting machinery. Instead of the common method of placing the lifting machinery on top of the movable span, the machinery was installed on the lift towers. Importantly, this placement relieved the main span of the weight of the lifting machinery while simplifying the cable lift configuration. The precedent for this design was a Rock Island Railroad bridge erected in 1927 across the White River in DeValls Bluff, Arkansas.

The construction is a subdivided Warren through truss. The vertical lift bridge measures 302' long and 32' wide. There are two through truss approach spans; the east span measures 100' long, the west span measures 150' long. The bridge carries two tracks and rests on concrete piers and abutments. The lift span has a 9'-6" vertical clearance when lowered and a 59'-6" vertical clearance when raised. Atop each lift tower are two thirty-seven ton, 13' diameter sheave wheels with sixteen, 2-1/4" diameter steel lift cables. Bridge counterweights are of pig iron and concrete. The bridge tender's cabin is on the east bank of the DesPlaines River.

SOURCES:

"Convert Old Fixed Spans Into Vertical Lift Spans," Railway Age, v. 97 (August 11, 1934): 168-171.

"Direct Hoist Lift Bridge; Rock Island Lines," Engineering News-Record, v. 99 (November 3, 1927): 705-708.

"Rock Island Lift Bridge Erected on Old Fixed Spans," Engineering News-Record, v. 109 (August 25, 1932): 227-230.