NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM

NAME

HISTORIC   Arkwright Bridge

AND/OR COMMON

LOCATION

Spanning the Pawtuxet River on the Cranston-Coventry Town Line, north of the Arkwright Mill; the bridge carries Hill Street.

CITY, TOWN

Coventry, Kent County VICINITY OF 003

STATE

Rhode Island

CLASSIFICATION

CATEGORY

- DISTRICT
- BUILDING(S)
- STRUCTURE
- SITE
- OBJECT

OWNERSHIP

PUBLIC
PRIVATE
BOTH

PUBLIC ACQUISITION
IN PROCESS
BEING CONSIDERED

STATUS

PUBLIC
PRIVATE
BOTH

UNOCCUPIED
OCCUPIED
WORK IN PROGRESS

PRESENT USE

AGRICULTURE
COMMERCIAL
EDUCATIONAL
ENTERTAINMENT
GOVERNMENT
INDUSTRIAL
MILITARY
MUSEUM
PARK
PRIVATE RESIDENCE
RELIGIOUS
SCIENTIFIC
TRANSPORTATION

OWNER OF PROPERTY

NAME

City of Cranston

Town of Coventry

STREET & NUMBER

City Hall

Town Hall

CITY, TOWN STATE

Cranston, RI

Coventry, RI

LOCATION OF LEGAL DESCRIPTION

COURTHOUSE REGISTRY OF DEEDS, ETC.

Cranston City Hall

Coventry Town Hall

STREET & NUMBER

869 Park Avenue

75 Main Street

CITY, TOWN STATE

Cranston, RI 02910

Coventry, RI 02816

REPRESENTATION IN EXISTING SURVEYS

TITLE

Coventry Preliminary Survey

DATE

1977-1978

FEDERAL X STATE COUNTY LOCAL

DEPOSITORY FOR SURVEY RECORDS

Rhode Island Historical Preservation Commission

CITY, TOWN STATE

Providence

Rhode Island

See continuation sheet 1
The Arkwright Bridge is located at the northern end of the village of Arkwright, on a very beautiful stretch of the Pawtuxet River, in the northeastern corner of the town of Coventry, at the Cranston border.

The bridge is 128 feet, 6 inches long; 19 feet, 7 inches wide; and has a depth of truss of 21 feet. The bridge is a single-span, through-Pratt truss, built using Phoenix columns, consisting of four flanged wrought-iron segments bolted together like barrel staves to form a square cylinder or box girder.

Composed of two six-panel parallel trusses of equal length, the upper chord consists of Phoenix columns of varying length riveted together, while the lower chord is made up of parallel wrought-iron bars pinned at 15½-foot intervals to each other, to the vertical members, and to hangers. The vertical compression members are also Phoenix columns, pinned to the upper and lower chords. The vertical tension members, as well as the diagonals, are parallel wrought-iron bars with dimensions varying to suit their particular locations. The top lateral bracing is formed by wrought-iron rods without a tensioning mechanism. The lower lateral bracing consists of six sets of two wrought-iron tie rods crossed diagonally forming an "X" shape connected at the pin locations. The portal bracing consists of rolled and wrought-iron angles, bars, and plates all riveted together, forming a decorative design. The struts are smaller-diameter Phoenix columns pinned to the upper chord. The floor beams, riveted plate girders pinned to the lower chord at panel intersections, support an asphalt-coated wooden deck.

Supported by rough-laid masonry abutments at either end, the bridge carries water and electric utility lines as well as auto and pedestrian traffic, protected by wooden railings. Recently, heavy traffic has been restricted because of the poor condition of the bridge caused by years of neglect.

The bridge is decorated by an ornate cast-iron builder's plate attached to the portal strut at each end. Both two-section plaques are surmounted by a stylized drape, executed in cast-iron, which, from a distance bears resemblance to a bird. The plates are inscribed with the name of the bridge builders, the date of erection, and the names of the members of the building committees involved in the project from the towns of Cranston and Coventry. The design of the plate was the distinctive Dean and Westbrook trademark.
SIGNIFICANCE

PERIOD

PREHISTORIC
1400-1499
1500-1599
1600-1699
1700-1799
1800-1899
1900-

AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW

ARCHAEOLOGY
ARCHAEOLOGY-HISTORIC
AGRICULTURE
ARCHITECTURE
ART
COMMERCE
COMMUNICATIONS
COMMUNITY PLANNING
CONSERVATION
ECONOMICS
EDUCATION
ENGINEERING
EXPLORATION/SETTLEMENT
INDUSTRY
INVENTION
LANDSCAPE ARCHITECTURE
LAW
LITERATURE
MILITARY
MUSIC
PHILOSOPHY
POLITICS/GOVERNMENT
RELIGION
SCIENCE
SCULPTURE
SOCIAL/HUMANITARIAN
THEATER
TRANSPORTATION
OTHER (SPECIFY)

SPECIFIC DATES .1888

STATEMENT OF SIGNIFICANCE

The Arkwright Bridge, with its unusually light members, is one of the finest surviving truss bridges in Rhode Island. It is the only Phoenix column bridge known to survive in the state. As such it is an engineering relic: the use of Phoenix columns as the main compression members provided a greater modulus of elasticity than cast-iron columns and they were widely used in buildings and bridges by the 1870s.

Metal truss bridges were the economic engineering solution to the problem of spanning small rivers and the many millstreams during the last half of the nineteenth century. Prefabricated, pin-connected trusses sent in pieces were easy to ship and then assemble at the site.

The first bridge to span the Pawtuxet River at this point was an early nineteenth-century wooden bridge, located in the city of Cranston. In 1887, a special resolution was passed changing the Coventry-Cranston border to the Pawtuxet River. The new iron bridge was commissioned in 1888 by a joint building committee from both Coventry and Cranston and the responsibility for maintenance of the new bridge was to be shared by the towns.

The approaches, piers and abutments were customarily built by local contractors, while the superstructure was designed, fabricated, shipped and then assembled at the site. The bridge components were manufactured at the Phoenix Bridge Company of Phoenixville, Pennsylvania, to the specifications of Dean and Westbrook of New York, a well-known bridge contractor. Dean and Westbrook's local agents in Providence, Graves and McCusker, an engineering firm, assembled the bridge at the site. Alonzo Croacher filled the approaches, James Ward painted the structure; supervision of the erection was conducted by Joseph A. Latham, the Cranston City Engineer.

The bridge is presently in poor condition because of neglect and lack of maintenance. Luckily, the traffic demands on it are minimal -- this factor has played a considerable part in its preservation.

The towns of Coventry and Cranston have recently recognized the historic value of the Arkwright Bridge and their obligation to maintain it; plans are being made for its rehabilitation.
Cranston Survey 1976-1978
Rhode Island Historical Preservation Commission

Historic American Engineering Record, Rhode Island Inventory
1977-1978

depository: HAER, Washington, D.C.; Old Slater Mill,
Pawtucket, Rhode Island; Rhode Island Historical
Preservation Commission.

Item 9     Page 2
Cranston City Treasurer's Report, 1888.
MAJOR BIBLIOGRAPHICAL REFERENCES
Coventry Town Council Records. May 16, 1887; June 6, 1887; June 18, 1888; and January 28, 1889. See Continuation sheet 1

GEOGRAPHICAL DATA
ACREAGE OF NOMINATED PROPERTY less than one
UTM REFERENCES

ZONE EASTING NORTHING
A 1 [148,8160] [46,7,0]
B 1 1 1 1
C 1 1 1 1
D 1 1 1 1

VERBAL BOUNDARY DESCRIPTION
Spanning the Pawtuxet River on the Cranston-Coventry Town Line, north of the Arkwright Mill, the bridge carries Hill Street.

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

<table>
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<th>STATE</th>
<th>CODE</th>
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<td>Kent</td>
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<tr>
<td>Rhode Island</td>
<td>44</td>
<td>Providence</td>
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FORM PREPARED BY
NAME / TITLE    Vivienne F. Lasky, Consultant
ORGANIZATION    R.I. Historical Preservation Commission
STREET & NUMBER 150 Benefit St.
CITY OR TOWN    Providence
STATE           Rhode Island

STATE HISTORIC PRESERVATION OFFICER CERTIFICATION
THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:
NATIONAL ___ STATE X LOCAL ___
As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

TITLE State Historic Preservation Officer
DATE September 29, 1978

FOR NPS USE ONLY
I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION
ATTEST
KEEPER OF THE NATIONAL REGISTER
Arkwright Bridge
Coventry and Cranston, Rhode Island

Warren Jagger, Photographer  September, 1976
Negative: Rhode Island Historical Preservation Commission

View of bridge looking northeast.

Photo #2
Arkwright Bridge
Coventry and Cranston, Rhode Island

Frederick Love, Photographer   February, 1977
Negative: Rhode Island Historical Preservation Commission

View toward bridge, looking east.

Photo #1