

UNITED STATES DEPARTMENT OF THE INTERIOR
 NATIONAL PARK SERVICE

 NATIONAL REGISTER OF HISTORIC PLACES
 INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

 SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
 TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS
1 NAME

HISTORIC Arkwright Bridge

AND/OR COMMON

2 LOCATION
 STREET & NUMBER 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 #2 - Hon. Edward Beard
CONGRESSIONAL DISTRICT

 STATE Rhode Island CODE 44 COUNTY Cranston, Providence County CODE 007
NOT FOR PUBLICATION
3 CLASSIFICATION

CATEGORY	OWNERSHIP	STATUS	PRESENT USE
<input type="checkbox"/> DISTRICT	<input checked="" type="checkbox"/> PUBLIC	<input type="checkbox"/> OCCUPIED	<input type="checkbox"/> AGRICULTURE <input type="checkbox"/> MUSEUM
<input type="checkbox"/> BUILDING(S)	<input type="checkbox"/> PRIVATE	<input type="checkbox"/> UNOCCUPIED	<input type="checkbox"/> COMMERCIAL <input type="checkbox"/> PARK
<input checked="" type="checkbox"/> STRUCTURE	<input type="checkbox"/> BOTH	<input type="checkbox"/> WORK IN PROGRESS	<input type="checkbox"/> EDUCATIONAL <input type="checkbox"/> PRIVATE RESIDENCE
<input type="checkbox"/> SITE	PUBLIC ACQUISITION	ACCESSIBLE	<input type="checkbox"/> ENTERTAINMENT <input type="checkbox"/> RELIGIOUS
<input type="checkbox"/> OBJECT	<input type="checkbox"/> IN PROCESS	<input type="checkbox"/> YES: RESTRICTED	<input type="checkbox"/> GOVERNMENT <input type="checkbox"/> SCIENTIFIC
	<input type="checkbox"/> BEING CONSIDERED	<input checked="" type="checkbox"/> YES: UNRESTRICTED	<input type="checkbox"/> INDUSTRIAL <input checked="" type="checkbox"/> TRANSPORTATION
		<input type="checkbox"/> NO	<input type="checkbox"/> MILITARY <input type="checkbox"/> OTHER:

4 OWNER OF PROPERTY

NAME City of Cranston Town of Coventry

STREET & NUMBER City Hall Town Hall

CITY, TOWN Cranston, RI VICINITY OF Coventry, RI STATE

5 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 Cranston, RI 02910 Coventry, RI 02816 STATE

6 REPRESENTATION IN EXISTING SURVEYS

TITLE Coventry Preliminary Survey

DATE 1977-1978

 FEDERAL STATE COUNTY LOCAL

DEPOSITORY FOR SURVEY RECORDS Rhode Island Historical Preservation Commission

CITY, TOWN Providence STATE Rhode Island

See continuation sheet 1

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input type="checkbox"/> EXCELLENT	<input checked="" type="checkbox"/> DETERIORATED	<input checked="" type="checkbox"/> UNALTERED	<input checked="" type="checkbox"/> ORIGINAL SITE
<input type="checkbox"/> GOOD	<input type="checkbox"/> RUINS	<input type="checkbox"/> ALTERED	<input type="checkbox"/> MOVED DATE _____
<input type="checkbox"/> FAIR	<input type="checkbox"/> UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

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.

B SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
<input type="checkbox"/> PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY-PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> ARCHEOLOGY-HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input type="checkbox"/> SCIENCE
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> ARCHITECTURE	<input type="checkbox"/> EDUCATION	<input type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> ART	<input checked="" type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input type="checkbox"/> THEATER
<input checked="" type="checkbox"/> 1800-1899	<input type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION/SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input type="checkbox"/> TRANSPORTATION
<input type="checkbox"/> 1900-	<input type="checkbox"/> COMMUNICATIONS	<input type="checkbox"/> INDUSTRY	<input type="checkbox"/> POLITICS/GOVERNMENT	<input type="checkbox"/> OTHER (SPECIFY)
		<input type="checkbox"/> INVENTION		

SPECIFIC DATES 1888

BUILDER/ARCHITECT Dean and Westbrook

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.

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CONTINUATION SHEET

1

ITEM NUMBER 6

PAGE

2

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.

9 MAJOR BIBLIOGRAPHICAL REFERENCES

Condit, Carl W. American Building. 1968.

Condit, Carl W. American Building Art; The Nineteenth Century. 1960.

Coventry Town Council Records. May 16, 1887; June 6, 1887; June 18, 1888; and January 28, 1889.

See Continuation sheet 1

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY less than one

UTM REFERENCES

A 19 28,816,0 4,622,77,0
ZONE EASTING NORTHING

B
ZONE EASTING NORTHING

C

D

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

STATE Rhode Island CODE 44 COUNTY Kent CODE 003

STATE Rhode Island CODE 44 COUNTY Providence CODE 007

11 FORM PREPARED BY

NAME / TITLE Vivienne F. Lasky, Consultant DATE September, 1978

ORGANIZATION R.I. Historical Preservation Commission DATE

STREET & NUMBER 150 Benefit St. TELEPHONE

CITY OR TOWN Providence STATE Rhode Island

12 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.

FEDERAL REPRESENTATIVE SIGNATURE *[Signature]*

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

DATE

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

ATTEST:

DATE

KEEPER OF THE NATIONAL REGISTER



Arkwright Bridge
Coventry and Cranston, Rhode Island

Warren Jagger, Photographer September, 1978
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

NORTH SCITUATE 6 MI
2 1/2 MI. TO R. I.

6667 I SE
(NORTH SCITUATE)

285 35'

286

288

32'30"

289

490 000 FEET



Arkwright Bridge
Coventry and Cranston, R. I.

19 288160 4622740