

NATIONAL REGISTER OF HISTORIC PLACES  
INVENTORY - NOMINATION FORM

(Type all entries - complete applicable sections)

STATE:	Vermont
COUNTY:	Franklin
FOR NPS USE ONLY	
ENTRY DATE	MAR 21 1974

1. NAME

COMMON:  
Douglas & Jarvis Patent Parabolic Truss Iron Bridge

AND/OR HISTORIC:

2. LOCATION

STREET AND NUMBER:  
Junction of State Aid Route 2 and the Missisquoi River

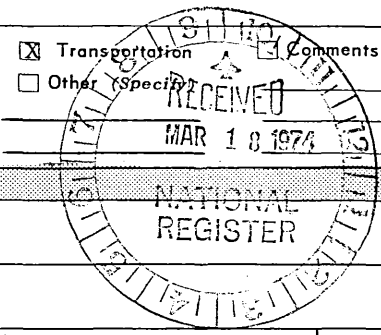
CITY OR TOWN:  
Highgate Falls vic.

CONGRESSIONAL DISTRICT:  
Vt. District Rep. Richard Mallary

STATE	CODE	COUNTY:	CODE
Vermont	50	Franklin	011

3. CLASSIFICATION

CATEGORY (Check One)	OWNERSHIP	STATUS	ACCESSIBLE TO THE PUBLIC
<input type="checkbox"/> District <input type="checkbox"/> Building <input type="checkbox"/> Site <input checked="" type="checkbox"/> Structure <input type="checkbox"/> Object	<input checked="" type="checkbox"/> Public <input type="checkbox"/> Private <input type="checkbox"/> Both	Public Acquisition: <input type="checkbox"/> In Process <input type="checkbox"/> Being Considered	Yes: <input type="checkbox"/> Restricted <input checked="" type="checkbox"/> Unrestricted <input type="checkbox"/> No
PRESENT USE (Check One or More as Appropriate)			
<input type="checkbox"/> Agricultural <input type="checkbox"/> Commercial <input type="checkbox"/> Educational <input type="checkbox"/> Entertainment	<input type="checkbox"/> Government <input type="checkbox"/> Industrial <input type="checkbox"/> Military <input type="checkbox"/> Museum	<input type="checkbox"/> Park <input type="checkbox"/> Private Residence <input type="checkbox"/> Religious <input type="checkbox"/> Scientific	<input checked="" type="checkbox"/> Transportation <input type="checkbox"/> Other (Specify)



4. OWNER OF PROPERTY

OWNER'S NAME:  
Town of Highgate

STREET AND NUMBER:  
(no street number)

CITY OR TOWN:  
Highgate

STATE:  
Vermont

CODE:  
50

5. LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC.:  
Town Clerk's Office

STREET AND NUMBER:  
(no street number)

CITY OR TOWN:  
Highgate

STATE:  
Vermont

CODE:  
50

6. REPRESENTATION IN EXISTING SURVEYS

TITLE OF SURVEY:  
Historic American Engineering Record

DATE OF SURVEY:  
1973     Federal     State     County     Local

DEPOSITORY FOR SURVEY RECORDS:  
Library of Congress

STREET AND NUMBER:

CITY OR TOWN:  
Washington, D.C.

STATE:

CODE:  
11

STATE:	Vermont
COUNTY:	Franklin
ENTRY NUMBER	MAR 21 1974
DATE	

FOR NPS USE ONLY

SEE INSTRUCTIONS

*This structure has not been recorded by NPS 3/19/74*

7. DESCRIPTION

CONDITION	(Check One)					
	<input type="checkbox"/> Excellent	<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Fair	<input type="checkbox"/> Deteriorated	<input type="checkbox"/> Ruins	<input type="checkbox"/> Unexposed
	(Check One)			(Check One)		
	<input checked="" type="checkbox"/> Altered	<input type="checkbox"/> Unaltered	<input type="checkbox"/> Moved	<input checked="" type="checkbox"/> Original Site		

DESCRIBE THE PRESENT AND ORIGINAL (if known) PHYSICAL APPEARANCE

The Douglas and Jarvis Patent Parabolic Truss Iron Bridge carries State Aid Route 2 across the falls of the Missisquoi River between the villages of Highgate Center and Highgate Falls in northwestern Vermont.

The structure consists of a 215 foot main through-truss span with an 80 foot secondary pony-truss span at its south end. The ends of the bridge are supported by stone abutments. A rusticated stone block pier supports the bridge at the point over the river where the two spans meet. Each span is supported by two flanking "lense shaped" trusses. Due to this distinctive truss design, the terms parabolic truss, lenticular truss or pumpkin seed truss are frequently used to describe this bridge type.

The top chord of the trusses of the main span consist of a series of riveted box beam segments. The bottom chords are formed of a series of iron eye bars. Vertical iron lattice compression posts are pin connected to the corresponding segment joints of the top and bottom chords. Each end of the iron I beams which support the deck are suspended by iron rods from the eye bar connecting pins of the bottom chords. As a result, the structure, when loaded, acts as a self-contained arch.

Iron lattice top chord bracing connects opposing segment joints between the top chords. Additional iron lattice bracing extends between the trusses, connecting alternating pairs of compression posts. Iron rod diagonal counter braces, fitted with turn buckles, are located in the panels. The deck is flanked by iron lattice guard rails. Heavy iron I beam portal posts support each of the four ends of the trusses of the main span. The north portal posts bear directly on the north abutment while the south portal posts bear directly on the pier. Both pairs of portal posts are capped by ornamental finials and are connected at the top by lattice cross bracing in the form of a segmental arch surmounted by an iron filigree railing.

The main span portals formed by the combination of these elements are each crowned by a plaque reading:

1887  
 Built By  
 The Berlin Iron Bridge Company  
 East Berlin, Conn.  
 Douglas & Jarvis      Pat. Apr. 16, 1878  
    & Apr. 7, 1885  
 H. W. Varnum, Commissioner  
 J. B. Sanderson }  
 S. S. Stevens    } Selectmen  
 C. R. Cummings }

SEE INSTRUCTIONS

**NATIONAL REGISTER OF HISTORIC PLACES  
INVENTORY - NOMINATION FORM**

STATE Vermont	
COUNTY Franklin	
FOR NPS USE ONLY	
ENTRY NUMBER	DATE
	MAR 21 1974

Section 7

(Continuation Sheet)

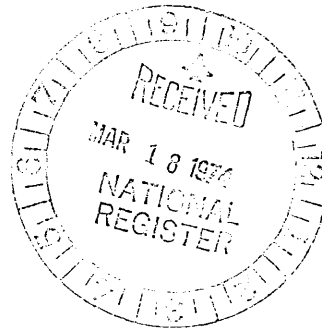
(Number all entries)

A sign below the plaque reads:

Speed Limit  
Horse at a Walk  
Motor Vehicles  
10 Miles Per Hr.

The pony-truss span is much smaller but of similar construction, lacking only portals and top chord bracing.

The only major alteration to the structure was the probable replacement of a wood plank deck with steel and concrete. Some of the iron filigree is missing above the portals. Many of the buildings, including a large three story mill, once clustered at the south end of the structure have now disappeared.



**8. SIGNIFICANCE**

PERIOD (Check One or More as Appropriate)

<input type="checkbox"/> Pre-Columbian	<input type="checkbox"/> 16th Century	<input type="checkbox"/> 18th Century	<input type="checkbox"/> 20th Century
<input type="checkbox"/> 15th Century	<input type="checkbox"/> 17th Century	<input checked="" type="checkbox"/> 19th Century	

SPECIFIC DATE(S) (If Applicable and Known) 1887

AREAS OF SIGNIFICANCE (Check One or More as Appropriate)

<input type="checkbox"/> Aboriginal	<input type="checkbox"/> Education	<input type="checkbox"/> Political	<input type="checkbox"/> Urban Planning
<input type="checkbox"/> Prehistoric	<input checked="" type="checkbox"/> Engineering	<input type="checkbox"/> Religion/Philosophy	<input type="checkbox"/> Other (Specify) _____
<input type="checkbox"/> Historic	<input type="checkbox"/> Industry	<input type="checkbox"/> Science	_____
<input type="checkbox"/> Agriculture	<input type="checkbox"/> Invention	<input type="checkbox"/> Sculpture	_____
<input type="checkbox"/> Architecture	<input type="checkbox"/> Landscape Architecture	<input type="checkbox"/> Social/Humanitarian	_____
<input type="checkbox"/> Art	<input type="checkbox"/> Literature	<input type="checkbox"/> Theater	_____
<input type="checkbox"/> Commerce	<input type="checkbox"/> Military	<input checked="" type="checkbox"/> Transportation	_____
<input type="checkbox"/> Communications	<input type="checkbox"/> Music		
<input type="checkbox"/> Conservation			

STATEMENT OF SIGNIFICANCE

The Douglas and Jarvis Patent Parabolic Truss Iron Bridge at Highgate Center, Vermont is one of the longest known single spans of this structural type left in the northeast and probably in the nation.

Exclusive rights to the Douglas and Jarvis Patent were owned by the Berlin Iron Bridge Company of East Berlin, Connecticut. The company introduced their parabolic truss in the late 1870's as an improvement over the Whipple Bow String Truss, a truss type commonly used during the mid 19th century. The Berlin works built many parabolic truss bridges throughout the northeast during the 1870's and 80's but the design was phased out by the turn of the 20th century.

Due to its size and predominantly original condition, the Highgate Center Bridge is one of the finest examples of the parabolic truss remaining in the northeast and is one of Vermont's most prominent iron civil engineering landmarks. The structure was also one of the first town-owned bridges in the state to be built with state-aid funds.

It is the intent of Vermont's official Historic Preservation Plan to promote the retention of significant historic resources. Part of this goal is to afford significant civil engineering landmarks, from all periods, the recognition and protection of the National Register.



SEE INSTRUCTIONS

9. MAJOR BIBLIOGRAPHICAL REFERENCES

Berlin Iron Bridge Company. Catalog. East Berlin, CT: Berlin Iron Bridge Company, c. 1888.

Allen, Richard Sanders; Plowden, David (photographer) "Iron Bridges (in Vermont)", Vermont Life, Volume XVIII, No. 2, Winter 1963.

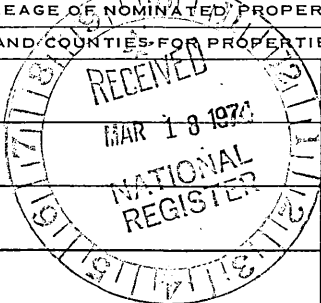
10. GEOGRAPHICAL DATA

LATITUDE AND LONGITUDE COORDINATES DEFINING A RECTANGLE LOCATING THE PROPERTY			O R	LATITUDE AND LONGITUDE COORDINATES DEFINING THE CENTER POINT OF A PROPERTY OF LESS THAN TEN ACRES		
CORNER	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE	
	Degrees Minutes Seconds	Degrees Minutes Seconds		Degrees Minutes Seconds	Degrees Minutes Seconds	
NW	° ' "	° ' "		44° 56' 03"	73° 02' 53"	
NE	° ' "	° ' "				
SE	° ' "	° ' "				
SW	° ' "	° ' "				

APPROXIMATE ACREAGE OF NOMINATED PROPERTY: less than one acre

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

STATE:	CODE	COUNTY	CODE



11. FORM PREPARED BY

NAME AND TITLE:  
Chester H. Liebs, Supervisor

ORGANIZATION: Vermont Division of Historic Sites DATE: 3/12/74

STREET AND NUMBER:  
Pavilion Building

CITY OR TOWN: Montpelier STATE: Vermont CODE: 50

12. STATE LIAISON OFFICER CERTIFICATION NATIONAL REGISTER VERIFICATION

As the designated State Liaison 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. The recommended level of significance of this nomination is:

National  State  Local

Name William B. Pinney

Title Director of Historic Sites  
State Historic Preservation  
Officer

Date 3/13/74

I hereby certify that this property is included in the National Register.

[Signature]  
Director, Office of Archeology and Historic Preservation

Date 3/11/74

ATTEST:

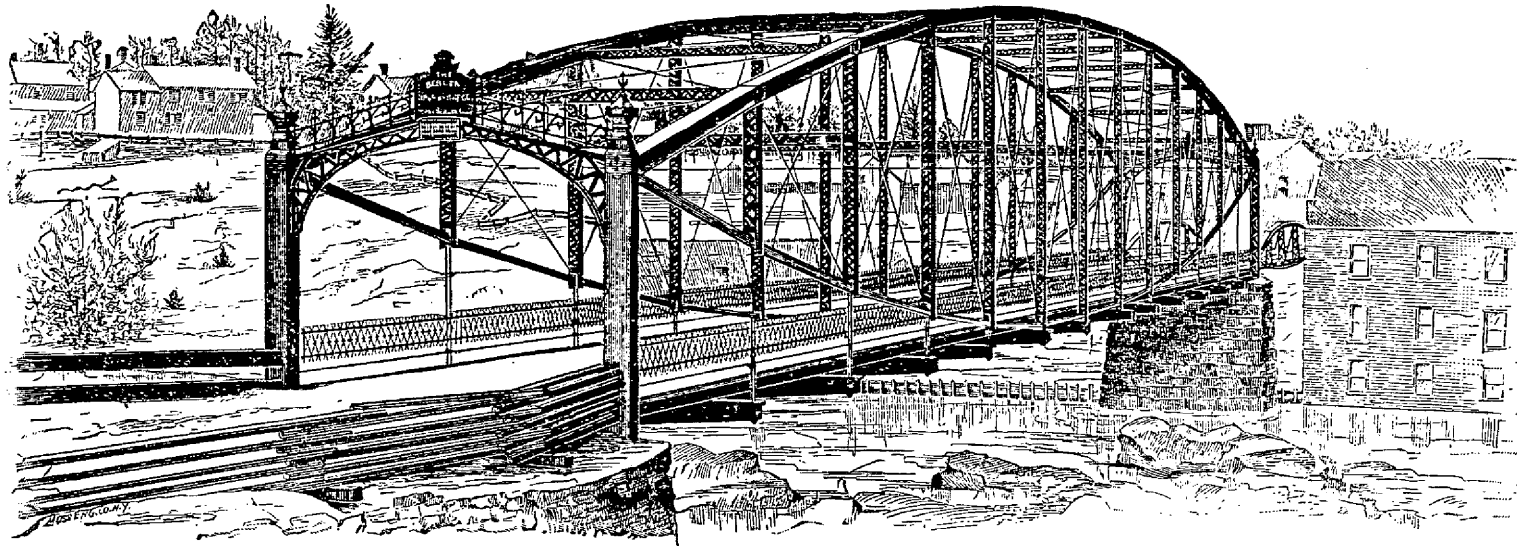
[Signature]  
Keeper of The National Register

Date 3-20-74

UTM REF 18/654030/4977080 10-1-75 0001

SEE INSTRUCTIONS

THE BERLIN IRON BRIDGE COMPANY,

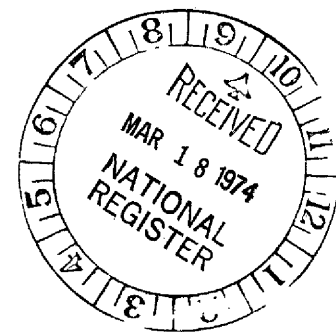


BRIDGE AT HIGHGATE, VT.

One Span of 215 feet, and one Span of 80 feet. Roadway, 20 feet wide.

EAST BERLIN, CONNECTICUT, U. S. A.

15

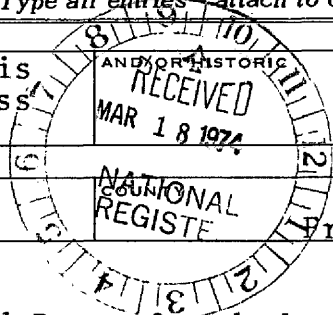


UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES  
PROPERTY PHOTOGRAPH FORM

(Type all entries attach to or enclose with photograph)

1. NAME COMMON <u>Douglas &amp; Jarvis</u> <u>Patent Parabolic Truss</u> <u>Iron Bridge</u>		NUMERIC CODE (Assigned by NPS)  <u>MAR 21 1974</u>
2. LOCATION STATE <u>Vermont</u>		TOWN <u>Franklin</u> <u>Highgate Falls</u>
STREET AND NUMBER <u>Junction of State Aid Route 2 and the Missisquoi River</u>		



3. PHOTO REFERENCE		
PHOTO CREDIT <u>Engraver un-</u> <u>known for Berlin Iron</u> <u>Bridge Company</u>	DATE  <u>c. 188</u>	NEGATIVE FILED AT <u>original cata-</u> <u>log from collection of</u> <u>Victor Darnell, Berlin</u> <u>Steel Construction Co.,</u> <u>Berlin, CT.</u>
4. IDENTIFICATION DESCRIBE VIEW, DIRECTION, ETC.		

Engraving from Berlin Iron Bridge Company catalog c. 1888. View looking south with north portal in foreground.