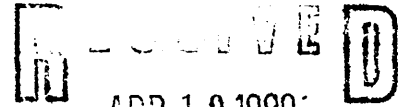


United States Department of the Interior  
National Park Service



APR 19 1990

NATIONAL REGISTER

National Register of Historic Places  
Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

1. Name of Property

historic name Winooski River Bridge  
other names/site number Checkered House Bridge

2. Location

street & number Vermont Route 2 N/A not for publication  
city, town Richmond N/A vicinity  
state Vermont code VT county Chittenden code 007 zip code 05477

3. Classification

<p>Ownership of Property</p> <input type="checkbox"/> private <input type="checkbox"/> public-local <input checked="" type="checkbox"/> public-State <input type="checkbox"/> public-Federal	<p>Category of Property</p> <input type="checkbox"/> building(s) <input type="checkbox"/> district <input type="checkbox"/> site <input checked="" type="checkbox"/> structure <input type="checkbox"/> object	<p>Number of Resources within Property</p> <table border="0"> <tr> <td>Contributing</td> <td>Noncontributing</td> </tr> <tr> <td>_____</td> <td>_____ buildings</td> </tr> <tr> <td>_____</td> <td>_____ sites</td> </tr> <tr> <td><u>1</u></td> <td>_____ structures</td> </tr> <tr> <td>_____</td> <td>_____ objects</td> </tr> <tr> <td><u>1</u></td> <td><u>0</u> Total</td> </tr> </table>	Contributing	Noncontributing	_____	_____ buildings	_____	_____ sites	<u>1</u>	_____ structures	_____	_____ objects	<u>1</u>	<u>0</u> Total
Contributing	Noncontributing													
_____	_____ buildings													
_____	_____ sites													
<u>1</u>	_____ structures													
_____	_____ objects													
<u>1</u>	<u>0</u> Total													

Name of related multiple property listing: Metal Truss, Masonry, and Concrete Bridges in Vermont Number of contributing resources previously listed in the National Register 0

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this  nomination  request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property  meets  does not meet the National Register criteria.  See continuation sheet.

Emilie B. [Signature] SHPD 4/12/90  
Signature of certifying official Date

State or Federal agency and bureau \_\_\_\_\_

In my opinion, the property  meets  does not meet the National Register criteria.  See continuation sheet.

\_\_\_\_\_  
Signature of commenting or other official Date

State or Federal agency and bureau \_\_\_\_\_

5. National Park Service Certification

I, hereby, certify that this property is:

entered in the National Register. Beth [Signature] 5/30/90  
 See continuation sheet.

determined eligible for the National Register.  See continuation sheet.

determined not eligible for the National Register.

removed from the National Register.

other, (explain:) \_\_\_\_\_

[Signature] Signature of the Keeper Date of Action

**6. Function or Use**

Historic Functions (enter categories from instructions)  
TRANSPORTATION/road-related

Current Functions (enter categories from instructions)  
TRANSPORTATION/road-related

**7. Description**

Architectural Classification  
(enter categories from instructions)

Materials (enter categories from instructions)

OTHER: Pennsylvania through truss bridge

foundation concrete

walls

roof

other Steel

Describe present and historic physical appearance.

See continuation sheet for description.

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Located in an area of scattered residential, commercial, and agricultural buildings in Richmond, Vermont, the Checkered House Bridge is an example of the metal truss bridges constructed after Vermont's 1927 flood. This large single-span, steel through truss, 356' long, was built in 1929, utilizing riveted construction and the standardization methods employed in Vermont during the flood reconstruction program. Of the standardized trusses built, this one is unusual in that it required a specialized design to fit the site requirements. The bridge retains its integrity of location, setting, design, materials, workmanship, feeling, and association.

The Checkered House Bridge, named for a nearby house, is a vehicular bridge that carries Vermont Route 2 across the Winooski River in Richmond, Vermont. The truss is located just north of Interstate 89 in an agricultural area dotted with several residential and commercial buildings. Before Interstate 89 was built, Route 2 was the primary east/west highway between Burlington and Montpelier, Vermont. The bridge is a steel Pennsylvania through truss (a variant of a Parker truss) that utilizes riveted construction and derives its name from extensive use on the Pennsylvania Railroad. The Pennsylvania truss has a polygonal top chord and sub-struts that stiffen the structure under heavy moving loads. The single-span, two-lane bridge carries the roadway 32' above the river, has 18 panels with a truss depth of 34', a portal clearance of 17', and is 356' in length and 21' in width.

The polygonal top chord of this truss consists of latticed girders with double plates at the sides. Angles form the lacing on the underside of the chord, which has an overall dimension of 27" x 23". The bottom chord is made of built-up channels of side plates with angles, and has stay plates spaced every three feet at the top and bottom. Paired angles with lacing bars form the horizontal stiffener members in the truss. The remainder of the truss members are made-up of rolled I-sections. The floor system consists of floor beams of four plates with angles at the corners, and I-beam stringers. On the inside of the truss structure, there is a guardrail and a pipe railing on a framework of riveted plates and angles. Poured concrete forms the bridge's abutments.

The Pennsylvania is a variant of the Parker truss; the Parker is a Pratt truss with a polygonal top chord. Both

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the Parker and the Pennsylvania are strengthened by their polygonal top chords, enabling them to carry heavier loads than the Pratt. The structure of the Pennsylvania is stiffened and further strengthened by the addition sub-struts, making it ideal for carrying heavy moving loads.

By 1929 when the Checkered House Bridge was constructed, standardized steel members were used exclusively for metal truss bridges. Pneumatic field riveting had been perfected and riveted construction was the accepted standard in the industry. As required by its location on a major highway, the polygonal top chord, sub-struts, and through truss design all are characteristic of a bridge constructed to carry heavy traffic loads. Due to the site and the length of the span required, a special design effort was needed to fit the bridge site requirements. Particularly striking is this bridge's massive profile against the surrounding open land, which further emphasizes its scale. This through truss is the longest single span built in Vermont during the flood reconstruction program. The bridge survives today in its original condition, without any structural reinforcement. An identical New Hampshire truss can be found crossing the Connecticut River at Bradford, Vermont.

**8. Statement of Significance**

Certifying official has considered the significance of this property in relation to other properties:

nationally  statewide  locally

Applicable National Register Criteria  A  B  C  D

Criteria Considerations (Exceptions)  A  B  C  D  E  F  G

Areas of Significance (enter categories from instructions)

Engineering  
Transportation

Period of Significance

1929

Significant Dates

1929

Cultural Affiliation

NA

Significant Person

NA

Architect/Builder

American Bridge Company

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

See continuation sheet for statement of significance.

See continuation sheet

**9. Major Bibliographical References**

Vermont Highway Commission, Biennial Report, 1928, table facing p.60; 1934 photograph facing p. 17.

Richmond, Vermont. Vermont Historic Sites and Structures Survey, Survey Number 0411-18. Vermont Division for Historic Preservation.

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # \_\_\_\_\_
- recorded by Historic American Engineering Record # \_\_\_\_\_

See continuation sheet

Primary location of additional data:

- State historic preservation office
- Other State agency
- Federal agency
- Local government
- University
- Other

Specify repository: \_\_\_\_\_

**10. Geographical Data**

Acreage of property Less than one acre.

UTM References

A 

1	8
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6	5	7	8	5	5
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4	9	2	0	5	9	0
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Zone Easting Northing

C 

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B 

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Zone Easting Northing

D 

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See continuation sheet

Verbal Boundary Description

The boundary for this property is the bridge and its abutments. The bridge carries Vermont Route 2 across the Winooski River in the town of Richmond at the UTM Reference Point: 18/656855/4920575. It is 356' in length and 21' in width.

See continuation sheet

Boundary Justification

This boundary includes all the land historically associated with this bridge.

See continuation sheet

**11. Form Prepared By**

name/title Heather Rudge  
organization Vermont Division for Historic Preservation date November 30, 1989  
street & number 58 East State Street, c/o Pavilion Building telephone (802) 828-3226  
city or town Montpelier state Vermont zip code 05602

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The Checkered House Bridge, built 1929, is significant for its contribution to bridge engineering and construction, as well as being one of only five Pennsylvania through trusses (a variant of the Parker truss) constructed for vehicular traffic in Vermont. Of the five, only two went up in the aftermath of the 1927 flood, a time in which design standardization methods were employed to replace the great number of bridges lost across the state. The building of over 1,600 bridges in three years was a massive undertaking, and one that placed Vermont at the forefront of bridge construction. Vermont achieved a degree of standardization far in advance of other states. This truss is the longest single span erected during the flood reconstruction program. This bridge is also significant to Vermont's transportation history at the state and local level as a part of the road, bridge and railway network that increased inter-regional transport, trade, commerce and travel.

As part of a multiple property submission, this bridge is being nominated under the historic context "Metal Truss, Masonry, and Concrete Bridges in Vermont." The property type is metal truss bridges. This bridge clearly meets the registration requirements for this property type. It is intact with an identifiable truss system, the majority of which are original members. The truss system is functioning, and the structure retains all qualities of historic integrity.

The Checkered House Bridge, like the others constructed after the flood, used the latest technology of rolled rather than "built-up" members for the verticals and diagonals of the structure. In the standardized designs of the post-flood reconstruction, the Pennsylvania truss was used for very long crossings because its sub-verticals within panels stiffened the structure and allowed the use of intermediate floor beams between main verticals, thereby affording considerable economy in steel costs by permitting longer and fewer panels. Because it was constructed on a principal highway, Vermont Route 2, the Pennsylvania truss is ideal for meeting the load requirements of that site.

With standardization, the most difficult fit between the standard plans and the actual site conditions was in the alignments, since standards permitted only limited variations of skew. Due to the height of the embankments and the length of the span required, this bridge was one of only a very few in the state that required a specialized design effort.

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The builder of this truss, American Bridge Company, was the most prolific bridge firm in Vermont before, during, and since the flood. During the flood reconstruction program, American Bridge sent one of their engineers to aid the state in the design of bridges after the great catastrophe. The presence of the engineer gave the state access to expert advice, particularly since U.S. Steel, the parent company of American Bridge, ranked as the foremost source of rolled structural steel.