NPS Form 10-900
(Rev. 8-86)

OMB No. 1024-0018

United States Department of the Interior
National Park Service

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 Bloomfield-Nulhegan River Route 102 Bridge
other names/site number Bloomfield Bridge

2. Location

street & number Route 102/Nulhegan River [na] not for publication
city, town Bloomfield [na] vicinity
state Vermont code VT county Essex code 009 zip code 05901

3. Classification

Ownership of Property	Category of Property	Number of Resources within Property	
		Contributing	Noncontributing
[ ] private	[ ] building(s)		buildings
[ ] public-local	[ ] district		sites
[x] public-State	[ ] site	1	structures
[ ] public-Federal	[x] structure		objects
	[ ] object	1	0 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 [X] 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 [X] meets [ ] does not meet the National Register criteria. [ ] See continuation sheet.

Signature of certifying official — Date 9/26/91

Vermont State Historic Preservation Officer
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. [ ] See continuation sheet. — Beth L. Savage — 11-14-91
[ ] determined eligible for the National Register. [ ] See continuation sheet.
[ ] determined not eligible for the National Register.
[ ] removed from the National Register.
[ ] other, (explain:) _____

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)

Other: Pratt Through Truss

Materials (enter categories from instructions)

foundation Concrete
walls
roof
other Steel

Describe present and historic physical appearance.

See Continuation Sheet

☒ See continuation sheet

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Bloomfield-Nulhegan River Route 102 Bridge
Bloomfield, Vermont

This bridge is located in Bloomfield Village, Vermont, on Vermont Route 102, over the Nulhegan River, near where it empties into the Connecticut River. This single span steel Pratt truss with riveted construction six panels rests on poured concrete abutments. The entire length of the bridge is 134 feet and the width is 24 feet. It clears the water by 10 feet and has a portal clearance of 15 feet. Still in use as a highway bridge in its original setting, the structure also maintains its integrity in engineering, materials, design, workmanship, feeling, association, and setting.

All of the connections on this span are hydraulically riveted, and most of the structural elements are rolled I-beams. Theses two characteristics are representative of the technological advanced and standardization associated with bridge construction in Vermont after 1927. The top chord has a latticed underside and its four panels are bisected diagonally by I-beams, which divide the panels into triangles. The center panels are bisected again, from the center of the diagonals to the lower corners.

The six panels consist of vertical, diagonal and sub-diagonal beams. The twoend panels are triangular truss portal braces with channeled verticles. The four middle panels are bisected diagonally; the northern diagonals descend right to left, and the southern diagonals descend left to right. Sub-diagonals bisect the center panels from the center of the diagonals; the north panel has sub-diagonals from right to left, and the south has sub-diagonals from left to right.

There is a cross bracing at the top of each portal entrance, which connects both sides of the portal bracing. The braces consist of top and bottom chords connected by vertical and diagonal I-beams.

The floor system consists of I-beams mounted above the lower chord and riveted to the verticles. Four I beam stringers connect the beams and support a concrete slab floor. The guard rail is built up of angles and channels, with a pipe top rail. The horizontal rail spans the entire bridge, and is supported by vertical, waist high, evenly spaced beams. The entire structure rests on a poured concrete abutments which are located in the river banks, about ten feet above the water.

Bloomfield-Nulhegan River Route 102 Bridge
Bloomfield, Vermont

The bridge on Vermont Route 102 over the Nulhegan River, near the Connecticut River, is located in Bloomfield, a small village in the northeast corner of Vermont. A steel truss bridge built in 1937, it is an excellent example of the Pratt through truss design, which was so popularly employed by Vermont state engineers in rebuilding the bridges that washed away in the disastrous flood of 1927. The structure qualifies at a state level under criterion "C" of the National Register because of its engineering significance. It represents the style, appearance, materials and engineering methods of industrial architecture in Vermont in the 1920's and 1930's. This bridge also signifies state historical patterns in government and transportation, making it eligible under National Register criterion "A". Vermont state government standardized the transportation industry after the flood, in an attempt to rebuild roads and bridges throughout the state as quickly and efficiently as possible. Prior to the disaster, local governments were responsible for bridge and road construction and repair. Nominated as part of a Multiple Property Submission, for Metal Truss, Masonry, and Concrete Bridges in Vermont, this bridge represents the steel truss bridge property type. Because it is an exceptional example of the Pratt through truss, and because it maintains its integrity in location, workmanship, design, materials, setting, feeling and association, the Bloomfield-Nulhegan Route 102 Bridge meets National Register requirements for listing as a steel truss property type.

The Bloomfield-Nulhegan Route 102 bridge represents the culmination of the technological and engineering advances made in 1927, ten years before its construction. About 1200 bridges in the state had been destroyed by the 1927 flood, and the repair and reconstruction of these overpasses was an enormous project which had to be undertaken immediately. It was decided that steel truss bridges were the most expedient and practical to build, and so this became the standard type for all bridges in the state. Though metal truss bridge construction had been patented in the late 1800's, the engineering technology was still evolving in 1927, and Vermont became a national leader in the development of bridge technology and a laboratory for new construction and materials.

The truss bridge took many forms and designs, but the most popular type, and the type that was built in Bloomfield, was the Pratt truss. This type of truss was the most adaptable, and weight and stress distribution was most easily calculated for these bridges since they were so simple in design. The fact that the Pratt truss was so highly favored makes the Bloomfield-Nulhegan Route 102 bridge no less significant. In reality, the popularity of the Pratt truss represents its significant role in engineering history.

The arrangement of diagonal, sub-diagonal, and verticle beams and the designation of certain members as load and stress bearing sections in this bridge make it an excellent example of the Pratt truss design, It also uses the standard methods of construction that were used in 1927, when repairs were being made after the flood, and when the Pratt truss was at its

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)	Period of Significance	Significant Dates
Engineering	1937	1937
Transportation		

Cultural Affiliation
n/a

Significant Person
n/a

Architect/Builder
n/a

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

See Continuation Sheet

☒ See continuation sheet

9. Major Bibliographical References

Historic Sites And Structures Survey, December 5, 1984, Bridge Survey Inventory Form, Survey Number 0501-22, conducted by Matt Roth, Historic Resource Consultants, on file at Vermont Division For Historic Preservation.

☐ See continuation sheet

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 # _____

Primary location of additional data:

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

Specify repository:
State of Vermont, Agency of Transportation

10. Geographical Data

Acreage of property less than one acre

UTM References

	Zone	Easting	Northing
A	19	290500	4958670
B			
C			
D			

☐ See continuation sheet

Verbal Boundary Description

The boundary for this property is the bridge and its abutments. The bridge carries Vermont Route 102 over the Nulhegan River at UTM point: 19/290500/4958670.

The bridge is bounded on the north and south by Vermont Route 102, and on the east and west by the Nulhegan river.

☐ See continuation sheet

Boundary Justification

The boundary is established by the perimeter of the bridge itself.

☐ See continuation sheet

11. Form Prepared By

name/title Betsy Loftus
organization University of Vermont Historic Preservation date 4/1/91
street & number Wheeler House, South Prospect Street telephone (802) 656-3180
city or town Burlington state Vermont zip code 05405

Bloomfield-Nulhegan River Route 102 Bridge
Bloomfield, Vermont

height of popularity in Vermont. The flat chord Pratt truss was easier and more economical to build than the more complex and expensive curved Parker truss, and was the most practical type for Bloomfield.

Early truss bridges were assembled in a factory and then shipped to the site. Technological advances, such as rolled I-beams and hydraulic riveting machines enabled bridges to be entirely put together on site, which facilitated construction. These were recent innovations in the 1920's, and Vermont was one of the earliest places in the nation to utilize this technology so frequently and effectively.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number _____ Page _____

PROPERTY OWNER

Agency of Transportation
State of Vermont
Montpelier, VT 05602

Attn: William Sargent