

United States Department of the Interior
National Park Service

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National Register of Historic Places
Registration Form

NATIONAL
REGISTER

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 Gilead Brook Bridge
other names/site number N/A

2. Location

street & number Route 12 N/A not for publication
city, town Bethel N/A vicinity
state Vermont code VT county Windsor code VT 027 zip code 05032

3. Classification

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

[Signature] SHPD August 22, 1990
Signature of certifying official Date
Vermont
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. Entered in the National Register
 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] 10/11/90
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: Warren truss deck bridge

Materials (enter categories from instructions)

foundation CONCRETE

walls

roof

other Steel

Describe present and historic physical appearance.

See continuation sheet for description.

See continuation sheet

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Continuation Sheet

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Located in the Town of Bethel, Windsor County, Vermont, the Gilead Brook Bridge is an example of the metal truss bridges constructed after Vermont's 1927 flood. This four-span, 326' long, Warren deck truss bridge was built in 1928 using the standardized methods and modern techniques characteristic of Vermont's extensive rebuilding program, which was responsible for constructing 1600 bridges between 1928-30. The Gilead Brook Bridge survives today in its original role as a highway bridge in a relatively unaltered state. The bridge retains its integrity of location, setting, design, materials, workmanship, feeling and association.

The Gilead Brook Bridge is a vehicular bridge that carries Vermont Route 12 across the Gilead Brook in the Town of Bethel, Windsor County, Vermont. This deck truss bridge is located approximately 2 miles north of Bethel's town center in rolling, primarily agricultural terrain containing scattered residences. Route 12, along with Route 14, was a primary north/south route from southeast Vermont to the greater Montpelier area before Interstate 89 was built.

This structure is a steel Warren truss deck bridge with riveted construction, a standard structural type for the longer spans built during the 1928-30 reconstruction period in Vermont. This four-span, two-lane bridge is 326' long, 26' wide and carries Vermont Route 12 33' above the Gilead Brook. The bridge consists of a concrete slab floor and curb with railings atop floor beams. The deck and floor system are supported by two identical, 7 panelled, 120' long deck trusses with truss depths of 20' and two 40' long, I-beam approach spans at either end. The bridge is supported by two poured concrete piers. The bridge is inclined with the north end higher than the south end.

The upper chord and end diagonals of the truss spans consist of a top and bottom latticed box girder with an overall dimension of 13" x 18". The lower chord is made of paired channels with stay plates spaced 30" apart. Full-depth crossed angles form the sway bracing. Crossed angles also serve as the top and bottom lateral bracing. The bottom struts are made of lattice-girder I-section beams. Rolled I-beams form the verticals and diagonals of the truss spans.

Each of the approach spans is comprised of five 12" x 28" dimension rolled I-beams with an extra plate welded to the lower flange and T-section reinforcing placed every 10' on the outer beams. The floor system consists of rolled I-section floor beams with no stringers. The guardrail is made of angles and channels with a latticed upper railing supported on T-section stanchions. The

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bridge deck and abutments are made of poured concrete. The abutments are rectangular in plan with rustication. The north concrete abutment was replaced in 1971 and the concrete deck was replaced in approximately 1985, both due to deterioration.

A Warren truss with verticals makes up the Gilead Brook Bridge's structural system. As in a simple Warren truss without verticals, the diagonals in this variant form alternate between being in compression or tension. The verticals add strength to the structure.

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

1928

Significant Dates

1928

Cultural Affiliation

N/A

Significant Person

N/A

Architect/Builder

Unknown

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

Bethel, Vermont. Vermont Historic Sites and Structures Survey, Survey Number 1404-34. Vermont Division for Historic Preservation. Montpelier, Vermont.

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 18 689000 4860300
 Zone Easting Northing

C _____

B _____
 Zone Easting Northing

D _____

See continuation sheet

Verbal Boundary Description

The boundary for this property is the bridge and its abutments. The bridge carries Vermont Route 12 across the Gilead Brook in the town of Bethel at the UTM Reference Point: 18/689000/4860300. It is 326' in length and 26' 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 Stephanie Jacon
 organization UVM Historic Preservation Program date 4-20-90
 street & number Wheeler House telephone 802-656-3180
 city or town Burlington state VT zip code 05405

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The Gilead Brook Bridge, built in 1928, is significant for its contribution to bridge engineering and construction, as well as being one of only four Warren deck truss bridges built during Vermont's reconstruction program following the 1927 flood. The Warren truss was the standard structural type for the longest spans built during the reconstruction program. The need to replace 1600 bridges as rapidly as possible made standardization necessary and brought Vermont to the forefront of bridge engineering. 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 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. The bridge retains its original function and siting with its significant original materials intact. The identifiable truss system functions and the structure retains all qualities of historic integrity.

The physical features of this location allowed for the construction of a relatively inexpensive deck truss bridge. Deck trusses were usually selected where the natural elevation of the roadway above the river made such an arrangement possible. A deck truss was desirable because it minimized the expense of building the necessary piers and abutments (they could be made lower than a through truss would require) and because it allowed an unobstructed roadway.

This bridge uses the standardized design and economical construction which characterized Vermont's efforts to rebuild a large number of bridges as quickly as possible after the disastrous 1927 flood. The Warren truss system was standard for the longest spans built during the reconstruction period from 1928-30. The bridge makes extensive use of rolled I-beams, saving fabrication time and expense over the earlier practice of using built-up members. The riveting and concrete pouring required in this bridge's construction could be performed on-site.

This bridge type economically and efficiently met the challenges of this particular site where a long, inclined span was required. It is a measure of the period's standardization that this bridge is identical, except for the number and size of approach spans, to the United States Route 5 deck truss bridge in Hartland, Vermont.

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PROPERTY OWNER

State of Vermont
Agency of Transportation
Montpelier, VT 05602

Attn: William Sargent