

United States Department of the Interior
National Park Service

LISTED ON:
VLR 06/18/2009
NRHP 09/16/2009

NATIONAL REGISTER OF HISTORIC PLACES
REGISTRATION FORM

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Crab Run Lane Truss Bridge
other names/site number VDHR File #s:045-0032; 045-5027-0002; VDOT Structure #6034

2. Location

street & number State Route 645 crossing Crab Run not for publication N/A
city or town McDowell vicinity _____
state Virginia code VA county Highland code 091 zip code 24458

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, 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. I recommend that this property be considered significant _____ nationally statewide _____ locally. (See continuation sheet for additional comments.)

Catherine A. Swason Signature of certifying official
July 31, 2009 Date
Virginia Department of Historic Resources
State or Federal Agency or Tribal government

In my opinion, the property _____ meets _____ does not meet the National Register criteria. (See continuation sheet for additional comments.)

Signature of commenting official/Title Date

State or Federal agency and bureau

4. National Park Service Certification

I, hereby certify that this property is:

- 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 of the Keeper _____

Date of Action _____

5. Classification

Ownership of Property (Check as many boxes as apply)

- private
- public-local
- public-State
- public-Federal

Category of Property (Check only one box)

- building(s)
- district
- site
- structure
- object

Number of Resources within Property

Contributing	Noncontributing	
<u>0</u>	<u>0</u>	buildings
<u>0</u>	<u>0</u>	sites
<u>1</u>	<u>0</u>	structures
<u>0</u>	<u>0</u>	objects
<u>1</u>	<u>0</u>	Total

Number of contributing resources previously listed in the National Register 0

Name of related multiple property listing (Enter "N/A" if property is not part of a multiple property listing.) N/A

6. Function or Use

Historic Functions (Enter categories from instructions)

Cat: Transportation Sub: Road-related (vehicular)

Current Functions (Enter categories from instructions)

Cat: Transportation Sub: Pedestrian-related

7. Description

Architectural Classification (Enter categories from instructions)

Other: Lane patent pony truss bridge

Materials (Enter categories from instructions)

foundation N/A

roof N/A

walls N/A

other Truss: steel railroad rails; Abutments: masonry w/concrete facing; Deck: wood plank

Narrative Description (Describe the historic and current condition of the property on one or more continuation sheets.)

8. Statement of Significance

Applicable National Register Criteria (Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

- ___ A Property is associated with events that have made a significant contribution to the broad patterns of our history.
___ B Property is associated with the lives of persons significant in our past.
[X] C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
___ D Property has yielded, or is likely to yield information important in prehistory or history.

Criteria Considerations (Mark "X" in all the boxes that apply.)

- ___ A owned by a religious institution or used for religious purposes.
___ B removed from its original location.
___ C a birthplace or a grave.
___ D a cemetery.
___ E a reconstructed building, object, or structure.
___ F a commemorative property.
___ G less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance (Enter categories from instructions)

Engineering

Period of Significance 1896

Significant Dates N/A

Significant Person (Complete if Criterion B is marked above) N/A

Cultural Affiliation N/A

Architect/Builder West Virginia Bridge Works, Wheeling, West Virginia

Narrative Statement of Significance (Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

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 # _____

Crab Rune Lane Truss Bridge

Highland County, Virginia

Primary Location of Additional Data

- State Historic Preservation Office
- Other State agency
- Federal agency
- Local government
- University
- Other

Name of repository: Virginia Department of Historic Resources; Virginia Transportation Research Council

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10. Geographical Data
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Acreage of Property Less than one acre

UTM References (Place additional UTM references on a continuation sheet)

Zone	Easting	Northing	Zone	Easting	Northing	Zone	Easting	Northing	Zone	Easting	Northing
1	17	4243847N	631986E	2		3		4			

___ See continuation sheet.

Verbal Boundary Description (Describe the boundaries of the property on a continuation sheet.)

Boundary Justification (Explain why the boundaries were selected on a continuation sheet.)

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11. Form Prepared By
=====

name/title Karen Brandt/Architectural Historian

Organization Virginia Department of Historic Resources date April 15, 2009

street & number 2802 Kensington Road telephone 804-367-2323

city or town Richmond state VA zip code 23221

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Additional Documentation
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Submit the following items with the completed form:

Continuation Sheets

Maps A USGS map (7.5 or 15 minute series) indicating the property's location.

A sketch map for historic districts and properties having large acreage or numerous resources.

Photographs Representative black and white photographs of the property.

Additional items (Check with the SHPO or FPO for any additional items)

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Property Owner
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(Complete this item at the request of the SHPO or FPO.)

name Commissioner, Virginia Department of Transportation

street & number 1401 East Broad Street telephone _____

city or town Richmond state VA zip code 23219

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Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance

with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.). A federal agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number.

Estimated Burden Statement: Public reporting burden for this form is estimated to average 36 hours per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the National Register of Historic Places, National Park Service, 1849 C St., NW, Washington, DC 20240.

NPS Form 10-900-a
(8-86)

OMB No. 1024-0018

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**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

**Crab Rub Lane Truss Bridge
Highland County, VA**

Section 7 Page 1

Narrative Description

The Crab Run Lane Truss Bridge is located on State Route 645 as it passes Crab Run, near the intersection of State Route 250 in McDowell, Virginia. The structure is a single-span, four-panel pony truss measuring thirty-nine feet long, twelve feet and six inches wide, and five feet and two inches tall. The top chords, end posts, and cutners are fabricated from bent steel railroad or trolley rails; the bottom chords are straight rails, and the posts and diagonals are made from rounded, looped tie rods. U-bolts are employed as connectors. The rails are stamped with the name and date 'Cambria 1896.' The abutments are limestone faced with concrete. The floor system is four-inch-thick wood planks on eight-inch-wide steel joists, which are continuous from abutment to abutment. Steel guardrails, installed in 1994 when the bridge was converted for pedestrian and bicycle use, sit on the north and south ends of the deck, but do not touch the trusses.

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**Crab Run Lane Truss Bridge
Highland County, VA**

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Summary Statement of Significance

Constructed in 1896 on State Route 645 near McDowell in Highland County, Virginia, the Crab Run Lane Truss Bridge embodies the distinctive characteristics of the patented Lane truss bridge construction and has a specialized and rare engineering design. This four-panel, pony truss bridge is the only surviving example of this unusual configuration in Virginia. Built by the West Virginia Bridge Works from Wheeling, West Virginia, the Crab Run Lane Truss Bridge has statewide significance. It retains integrity of those aspects most essential to conveying its engineering area of significance under National Register Criterion C: materials, design, and workmanship. The period of significance for the bridge is 1896, the year it was built. In 1994 the bridge was converted for pedestrian and bicycle use.

Historical Background

The Crab Run Lane Truss Bridge was fabricated by the West Virginia Bridge Works company of Wheeling, West Virginia. The bridge was constructed in 1896 to carry traffic on the original alignment of the Staunton to Parkersburg Turnpike, a predecessor of State Route 250, over Crab Run. When State Route 250 was built in 1927, this portion of the turnpike (now State Route 645) became a secondary road.

The Crab Run Lane Truss Bridge has a configuration that does not conform to conventional truss patterns. Ninety percent of trusses built after the Civil War were Pratt and Whipple trusses. These reliable truss types were more easily and economically replicated in steel than in iron by 1890. With this ease of manufacture, hundreds of new bridge companies formed in the last quarter of the nineteenth century, with most starting between 1880-1910.¹ The Crab Run Lane bridge design, specifying the use of straight and bent railroad and trolley rails, was patented by the Lane Bridge Company, in Painted Post, New York in 1894 (US Patent Serial No. 531,048). This patent improved upon a design patented by the company's proprietor, Daniel Lane, in 1890 (US Patent Serial No. 424,318), which resulted in stronger connections of the floor and truss beams, and reduced costs. Only two bridges of this design are known to have existed in Virginia. The other bridge, located on Route 704 in Rockingham County, collapsed following an overload in the early 1970s. It appears that very few Lane patent truss bridges survive outside of Virginia; because of the lack of information on this design in historical bridge literature, identification of these types of bridges is difficult.²

The Lane Bridge Company was not the only company manufacturing bridges from rails. Railroad truss bridge patents were also taken out by Jason C. Fenn of Connecticut in 1894, and J.E. Greiner of the Baltimore and Ohio (B&O) Rail Road, in 1895. (US Patent Serial No. 498,310).³ Although similar in materials, these bridges featured different truss configurations. Steel rail bridge construction was approved by a committee of the B&O Rail Road, charged with investigating the strength and performance of these types of bridges. Rail truss bridges were adopted by the B&O Rail Road as the standard bridge for overhead crossings of country roads in 1895; they were also considered to be useful for spanning small streams. The construction costs for rail truss bridges was lower than that of wooden bridges designed to carry the same load.⁴

Due to structural weaknesses, the Crab Run Lane Truss Bridge was taken out of service for vehicular traffic in 1994; it is now used to carry pedestrian and bicycle traffic. Guardrails were added to the deck in 1994. The bridge retains its original structural elements, save for the wood deck, which was replaced in 1994.

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**Crab Run Lane Truss Bridge
Highland County, VA**

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Bibliography

Deibler, Dan Grove
1975 *Metal Truss Bridges in Virginia: 1865-1932, Part II. The Staunton Construction District.* Virginia Transportation Research Council, Charlottesville.

Deibler, Dan Grove
1973 "Truss Bridge Survey and Inventory Form." Manuscript on file at the Virginia Transportation Research Council, Charlottesville.

Fenn, Jason C. (1894) *Bridge.* Serial No. 498,310, United States Patent Office.

Miller, Ann B., and Kenneth M. Clark
1975 *Survey of Metal Truss Bridges in Virginia.* Virginia Transportation Research Council, Charlottesville.

Miller, Ann B., Kenneth M. Clark, and Matthew C. Grimes
2001 *A Management Plan for Historic Bridges in Virginia.* Virginia Transportation Research Council, Charlottesville.

Lane, D. F., (1890) *Truss Bridge.* Serial No. 424,318, United States Patent Office.

Lane, Daniel F., (1894) *Truss-Bridge.* Serial No.531,048, United States Patent Office.

"Standard Highway Bridges of Steel Rails; Baltimore and Ohio R.R." *Engineering News*, November 28, 1895, p. 365.

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**NATIONAL REGISTER OF HISTORIC PLACES
CONTINUATION SHEET**

**Crab Run Lane Truss Bridge
Highland County, VA**

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Geographical Data

Verbal Boundary Description

The boundaries for the Crab Run Lane Truss Bridge are defined by the overall footprint of the bridge itself as erected: 39 feet long and 12 feet, 6 inches wide as shown on the accompanying map.

Boundary Justification

The boundaries for the Crab Run Lane Truss Bridge are defined as the overall footprint of the bridge itself as erected, as the significance of the structure is expressed in its engineering design.

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**NATIONAL REGISTER OF HISTORIC PLACES
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**Crab Run Lane Truss Bridge
Highland County, VA**

Section Photos/Additional Documentation Page 5

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Photographic Information

The following information is common to all photographs:

NAME OF PROPERTY: Crab Run Lane Truss Bridge

LOCATION: Highland County, Virginia

NAME OF PHOTOGRAPHER: Karen Brandt

DATE OF PHOTOGRAPH: May 2009

LOCATION OF NEGATIVES AND DIGITAL IMAGES: Virginia Department of Historic Resources, Richmond, Virginia.

VIEW: East

PHOTO: 1 of 7

VIEW: North East

PHOTO: 2 of 7

VIEW: North West

PHOTO: 3 of 7

VIEW: North

PHOTO: 4 of 7

VIEW: Rail with company name and date

PHOTO: 5 of 7

VIEW: Close up of rails and rods, view to East

PHOTO: 6 of 7

VIEW: Close up view of truss rails and rods, view to West

PHOTO: 7 of 7

Additional Documentation:

Figures 1 and 2. Drawings and plans of the D.F. Lane Truss Bridge, submitted with patent application, US Patent Serial No. 531, 048 (two pages).

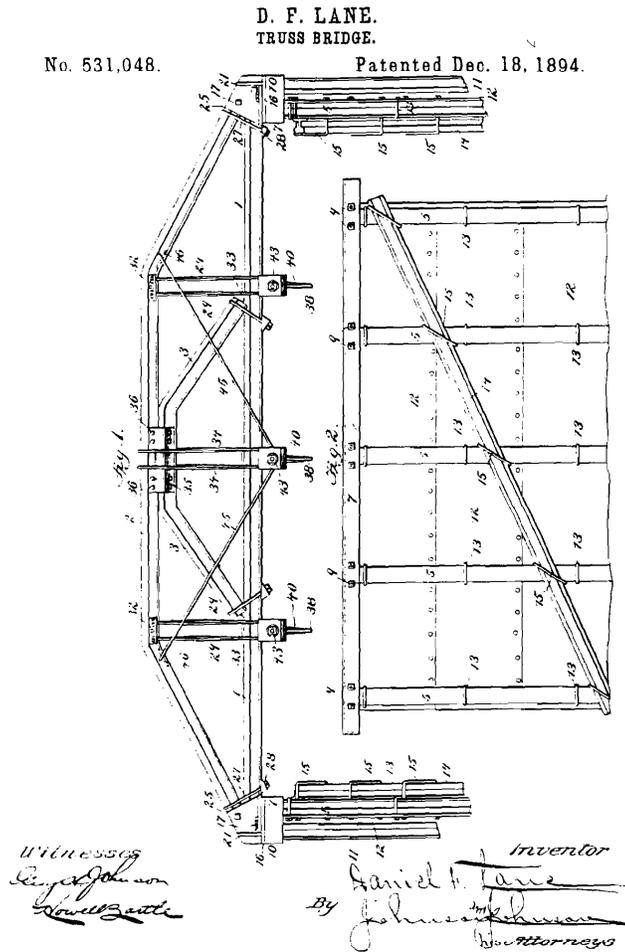
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CONTINUATION SHEET

Crab Run Lane Truss Bridge
Highland County, VA

Section Additional Documentation Page 7

Figure 1. Plan one of Crab Run Lane Truss Bridge.



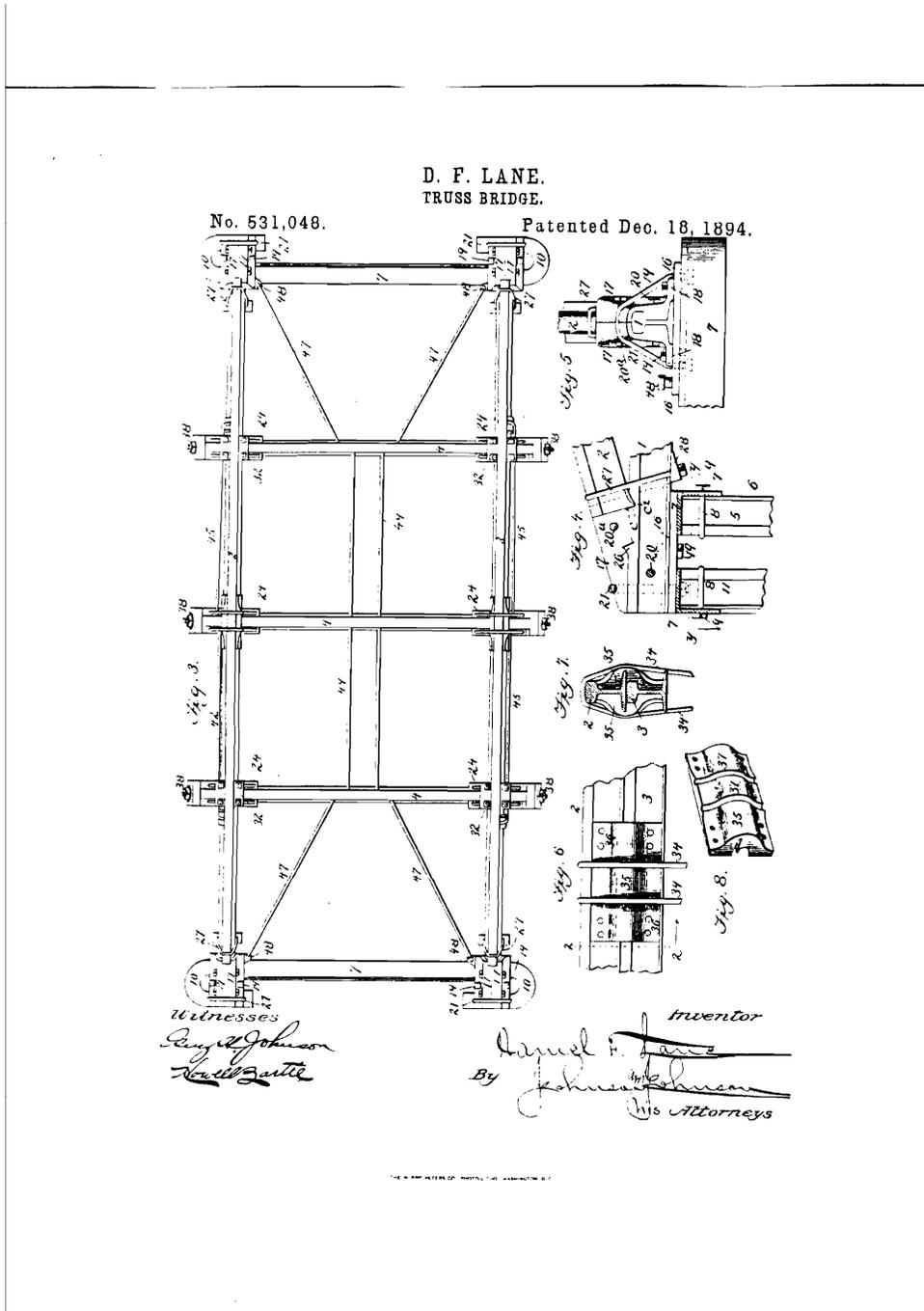
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Crab Rub Lane Truss Bridge
Highland County, VA

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Figure 2. Plan two of Crab Run Lane Truss Bridge.



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**Crab Rub Lane Truss Bridge
Highland County, VA**

Section Endnotes Page 6

Endnotes

¹ Deibler, Dan Grove, 1973. "Truss Bridge Survey and Inventory Form." Manuscript on file at the Virginia Transportation Research Council, Charlottesville: 13.

² Miller, Ann B., and Kenneth M. Clark. *Survey of Metal Truss Bridges in Virginia*. Virginia Transportation Research Council, Charlottesville:11-12.

³ *Engineering News* November 28,1895: 365.

⁴ Ibid.