

United States Department of the Interior
National Park Service

For NPS use only

National Register of Historic Places
Inventory—Nomination Form

received FEB 13 1984

date entered

See instructions in *How to Complete National Register Forms*
Type all entries—complete applicable sections

1. Name

historic The Great Bridge

and/or common ~~The Whittier Bridge (preferred)~~ ✓

2. Location

street & number ^{NH} ~~Old Route~~ 25 N/A not for publication

city, town Ossipee N/A vicinity of

state New Hampshire code 33 county Carroll code 03

3. Classification

Category	Ownership	Status	Present Use	
<input type="checkbox"/> district	<input checked="" type="checkbox"/> public	<input checked="" type="checkbox"/> occupied	<input type="checkbox"/> agriculture	<input type="checkbox"/> museum
<input type="checkbox"/> building(s)	<input type="checkbox"/> private	<input type="checkbox"/> unoccupied	<input type="checkbox"/> commercial	<input type="checkbox"/> park
<input checked="" type="checkbox"/> structure	<input type="checkbox"/> both	<input type="checkbox"/> work in progress	<input type="checkbox"/> educational	<input type="checkbox"/> private residence
<input type="checkbox"/> site	Public Acquisition	Accessible	<input type="checkbox"/> entertainment	<input type="checkbox"/> religious
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input type="checkbox"/> yes: restricted	<input type="checkbox"/> government	<input type="checkbox"/> scientific
	<input type="checkbox"/> being considered	<input checked="" type="checkbox"/> yes: unrestricted	<input type="checkbox"/> industrial	<input checked="" type="checkbox"/> transportation
	N/A	<input type="checkbox"/> no	<input type="checkbox"/> military	<input type="checkbox"/> other:

4. Owner of Property

name Town of Ossipee

street & number c/o Town Offices, Main Street

city, town Ossipee N/A vicinity of state New Hampshire

5. Location of Legal Description

courthouse, registry of deeds, etc. Not Available (see continuation sheet)

street & number

city, town state

6. Representation in Existing Surveys

title Ossipee Historical Resources Inventory has this property been determined eligible? yes no

date 1982 federal state county local

depository for survey records Lakes Region Planning Commission

city, town Meredith state New Hampshire

7. Description

Condition excellent good fair deteriorated ruins unexposed**Check one** unaltered altered**Check one** original site moved

date

N/A

Describe the present and original (if known) physical appearance

Whittier Bridge is a wooden covered bridge on Old Route 25 in the town of Ossipee. It spans the Bearcamp River, just west of the village of West Ossipee. The bridge, which sits on abutments of rough split granite blocks, reinforced by concrete buttresses, is supported by two Paddleford trusses, supplemented by a pair of laminated arches. It has walls of vertical boarding, overhanging portals, and a wooden shingled gable roof. Whittier Bridge has an overall length of 144 feet and an outside width of 20 feet. The roadway itself, within the bridge, is 132 feet long and 15 feet wide. The clear span of the bridge, as measured between the abutments, is 110 feet.

The Paddleford truss is a panel truss, which was developed by Peter Paddleford from the Long truss. In the Long truss, the horizontal upper and lower chords are separated by widely spaced vertical posts. Between the posts are two diagonal timbers jointed into the posts--a brace (slanting towards the midpoint of the bridge) and a counterbrace (slanting towards the nearest end of the bridge). (Each such section of the truss between two vertical posts is called a panel.) In the Paddleford truss, the counterbrace, usually lighter than the brace, is extended into the next panels, overlapping the posts at both ends, to stiffen the truss by, in effect, superimposing the panels.

The sixteen panel Paddleford trusses of the Whittier Bridge were built with their counterbraces jointed into the upper and lower chords. The counterbrace was deleted from the end panels. The vertical posts extend through the upper chords to support the roof trusses. The upper chords are extended six feet at each end to support the overhanging portals. Heavy portal braces, from the end posts, support these extensions of the upper chords. Short vertical timbers were suspended from the ends of the upper chords, so that braces could be added from the short timbers to the roof trusses of the gable ends.

The trusses have seen some changes. In the 1940's, the deteriorated lower chords of both trusses were replaced by new, but similar chords, each four members wide, like the older upper chords. The lower ends of the counterbraces and the posts, which were probably also deteriorated, were then cut off. Splices were added to tie the posts into the new chords. But, the counterbraces were left unattached at the lower ends. Subsequently, the newer lower chord of the downstream (southeastern) truss again deteriorated and eventually broke. It was replaced in the recent (1982-83) restoration by a stronger, but still compatible, five member chord. The restorer, feeling that the former post splices were not as strong as they should be, connected the posts to the chord by bolting to the side of each post a short but heavy timber which extends through and is firmly tied into the new lower chord. (Short braces were also added to strengthen eight of the post splices of the lower upstream chord.) A few rotten members in the upper chords of both trusses were also replaced during the restoration. But for these repairs and minor alterations, the trusses retain their original appearance and design, and most of their original timbers.

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Continuation sheet #1 DESCRIPTION

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The present floor of the bridge also dates from the renovations of the 1940's. The heavy transverse floor beams, which correspond to the posts of the trusses, are attached to the lower chords by metal hangers. Horizontal diagonal timbers, again attached by metal hangers, were added as braces between the floor beams. Longitudinal joists, which rest on the floor beams, support the floor's heavy transverse planks. The floor, however, does not cover the full width of the bridge. The narrow gaps left on each side for the arches are protected by low timbers placed on the edges of the roadway and by a simple waist-height railing supported by plain posts.

The laminated arches, which appear to have been added in the late 19th century, are both fifteen planks thick. They spring from the concrete buttresses, and rise through the narrow gaps on the insides of the bridge trusses, reaching in the center almost to the bottom of the tiebeams of the roof trusses. Modern tie rods connect the arches to the floor beams. (As some of the planks in the arches were rotten, they also were replaced during the recent restoration.)

The sides of the bridge are sheathed with plain vertical boarding. The sheathing stops a foot and a half below the upper chord in the four panels at each end, and at about waist height in the central eight panels. Horizontal boarding sheathes the faces of the portal braces and the portal gables themselves, which are trimmed with only plain boards. A painted wooden sign is found in each gable, the north-eastern sign naming the bridge and giving the rules for its use, the southeastern sign stating the vehicle and speed limitations.

The roof trusses extend over the sides of the bridge, beyond the bridge truss posts which support them. They are also supported by braces from the inner faces of the posts and, in some cases, the arches, to the tiebeams. (None of the roof braces are original, as surviving notches in the truss posts and roof tiebeams indicate that the original roof braces were replaced by shorter and higher braces, which left more clearance for tall vehicles.) The kingpost roof trusses are each composed of a tie-beam, two rafters, a kingpost, two supplementary struts and a light collar beam. Between the tiebeams are diagonal horizontal timbers, designed to stiffen the roof structure. The roof trusses support the new purlins of the wooden shingled roof, built during the recent restoration to replace a metal roof that was not an original feature of the bridge.

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The description of a highway right-of-way would normally be found in the Town Records, as roads, in the State of New Hampshire, are usually laid out by Town Selectmen. But, in the case of the Whittier Bridge, the highway was built before the incorporation of the Town of Ossipee, by Capt. John Dudley for the Masonian Proprietors, the owners of the township. There is no precise description of Capt. Dudley's road now surviving. This, however, poses no real legal problem, as the road has been a public way for two centuries. The nominated property, the bridge and its abutments, is clearly owned by the Town of Ossipee.

8. Significance

Period	Areas of Significance—Check and justify below			
<input type="checkbox"/> prehistoric	<input type="checkbox"/> archeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture	<input type="checkbox"/> religion
<input type="checkbox"/> 1400–1499	<input type="checkbox"/> archeology-historic	<input type="checkbox"/> conservation	<input type="checkbox"/> law	<input type="checkbox"/> science
<input type="checkbox"/> 1500–1599	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> literature	<input type="checkbox"/> sculpture
<input type="checkbox"/> 1600–1699	<input type="checkbox"/> architecture	<input type="checkbox"/> education	<input type="checkbox"/> military	<input type="checkbox"/> social/
<input type="checkbox"/> 1700–1799	<input type="checkbox"/> art	<input checked="" type="checkbox"/> engineering	<input type="checkbox"/> music	humanitarian
<input checked="" type="checkbox"/> 1800–1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	theater
<input type="checkbox"/> 1900–	<input type="checkbox"/> communications	<input type="checkbox"/> industry	<input type="checkbox"/> politics/government	<input checked="" type="checkbox"/> transportation
		<input type="checkbox"/> invention		<input type="checkbox"/> other (specify)

Specific dates c. 1870 **Builder/Architect** Uncertain (see below)

Statement of Significance (in one paragraph)

Whittier Bridge is significant as one of the most important highway bridges of the nineteenth century still standing in Carroll County, and as one of the few surviving Paddleford truss bridges in the United States.

Transportation. The topography of eastern central New Hampshire has always dictated that the major north-south transportation routes will pass through the "gap" between the Ossipee Mountains and Ossipee Lake, and that those routes will cross the Bearcamp River, which flows across this "gap". Beginning in 1770's, when Capt. John Dudley built a road for the Masonian Proprietors who owned the township of Ossipee, the site of the Whittier Bridge was an important river crossing on the major north-south highway through what is now Carroll County. As early as 1796, deeds refer to a bridge at the site. The importance of the Great Bridge, as it was then called, was reinforced by the development of a major east-west highway along the north side of the Ossipee Mountains, which connected with the north-south highway near the bridge.

It is unclear how many bridges have stood on the site. And the origins of the present bridge are somewhat uncertain, as no contemporary documents or newspapers survive to describe its construction. There are, however, seemingly reliable oral traditions. Our two best sources on the bridge's construction are interviews of four elderly men published in the 1930's.

Apparently, the previous bridge was washed away in the great flood of 1869, that destroyed so many Carroll County bridges. The contract for the new bridge is said to have been awarded to Henry Banks, who owned a hotel in West Ossipee from 1866 until his death in 1873.² Banks, in turn, hired bridge builders who erected the bridge, probably in 1870.³ Unfortunately, the identity of the master builder is uncertain. Most sources have credited the bridge to Jacob Berry of Conway, without specifying whether the builder was Jacob E. Berry (1802-1870) or his son Jacob H. Berry (1827-1892). One of the men interviewed in the 1930's attributed the bridge to Jacob and Horace Berry.⁴ (Horace W. Berry (1831-1921) was Jacob E. Berry's son and Jacob H. Berry's brother. The two brothers did build a Paddleford truss bridge over the Saco

¹An interview with Emery Moody, 83, was the basis of a short item "Ossipee's Old Covered Bridge at West Ossipee", Carroll County Independent, February 22, 1935. James Welch interviewed Alfonzo Mason, 78, Levi Moody, 84, and Charles Evans, 79, for his article "Covered Bridge at West Ossipee", Carroll County Independent, March 27, 1936.

²The bridge now bears the name of the hotel's most famous guest, the poet John Greenleaf Whittier, who stayed there during several summers in the 1870's.

³The three men interviewed by James Welch all agreed on this date. Emery Moody preferred "1864 or thereabouts". But, that date would be inconsistent with the great flood of 1869, as well as Henry Banks' residence in West Ossipee, as for ten or twelve years before his purchase of the hotel, Banks lived in New York.

⁴Carroll County Independent, February 22, 1935.

9. Major Bibliographical References

(see continuation sheet)

10. Geographical Data

Acreeage of nominated property .07 acres

Quadrangle name Ossipee Lake, NH

Quadrangle scale 1:62500

UTM References

A

1	9	3	2	3	0	9	0	4	8	5	4	0	6	0
Zone		Easting						Northing						

B

Zone		Easting						Northing						

C

Zone		Easting						Northing						

D

Zone		Easting						Northing						

E

Zone		Easting						Northing						

F

Zone		Easting						Northing						

G

Zone		Easting						Northing						

H

Zone		Easting						Northing						

Verbal boundary description and justification The nominated property consists only of the Whittier Bridge and its abutments. The boundaries of the nominated property are shown by shading and the dashed lines on the enclosed sketch map.

List all states and counties for properties overlapping state or county boundaries

state N/A code county code

state N/A code county code

11. Form Prepared By

name/title David Ruel

organization Lakes Region Planning Commission date August 31, 1983

street & number Main Street telephone 279-8171

city or town Meredith state New Hampshire

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

national state local

As the designated State Historic Preservation 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.

State Historic Preservation Officer signature 

Commissioner, Dept. of Resources and Economic Development
title State of New Hampshire Historic Preservation Officer

date JAN 26 1984

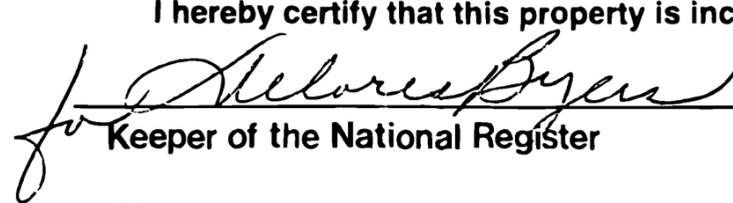
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I hereby certify that this property is included in the National Register

Entered in the
National Register

date

3/15/84


Keeper of the National Register

Attest:

date

Chief of Registration

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River for the Town of Conway in 1875.) The author of the other 1930's article stated that the bridge was built by "Berry and Broughton of Conway"⁵, raising the possibility that Charles A. Broughton (1835-1909), another important Conway bridge builder, may have played a major role in its construction. It is even possible that all four men worked on the bridge, but it is obviously difficult, without better evidence, to say who the master builder was.

The new bridge played an important role in the Carroll County transportation system throughout the rest of the nineteenth century and the first half of the twentieth century. Its importance as a link in the major north-south highway diminished, when the Portsmouth, Great Falls and Conway Railroad was completed from North Berwick, Maine, to North Conway in 1875, and disappeared in the early twentieth century, when the State of New Hampshire developed a major north-south automobile highway, Route 16, which crossed the Bearcamp River on a more modern bridge two miles downstream of the Whittier Bridge. These developments, however, reinforced the importance of the bridge as a component in the major east-west highway. The new railroad station in the village of West Ossipee attracted a good deal of local traffic, much of which, particularly from southern Tamworth and Sandwich, crossed the bridge. And, in the twentieth century, the state highway department laid out Route 25, still one of the region's major east-west highways, over Whittier Bridge. It was not until the construction of a new Route 25 bridge about 1955, downstream of the covered bridge, that Whittier Bridge was relegated to its present relatively minor role, serving a West Ossipee village street.

The heavy use that the bridge received was, in part, responsible for the many renovations and repairs that have been made to it over the years. A pair of laminated arches were added to strengthen it, probably in the late nineteenth century. After the 1936 flood, the abutments were reinforced with concrete buttresses. The lower chords of the trusses and the floor were rebuilt in the 1940's. Later neglect led to such serious deterioration that the bridge had to be closed to traffic in 1981. Gordon Pope, a longtime Ossipee summer resident, decided to restore the bridge as a memorial to his late wife. His very generous gift, supplemented by gifts from friends, was matched by the State of New Hampshire. The restoration, placed in the capable hands of the covered bridge specialists, Graton Associates of Ashland, included a new downstream lower chord, the replacement of rotten timbers in both upper chords and both arches, a new wooden shingled roof, and other repairs. The restoration, begun in November 1982, was dedicated and the bridge reopened for traffic on August 19, 1983. Despite these renovations and repairs, the Whittier Bridge retains its basic design and integrity, surviving as a good example of a major nineteenth century covered highway bridge.

⁵Carroll County Independent, March 27, 1936.

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Engineering. The Paddleford truss was developed by Peter Paddleford (1785-1859), a prominent and experienced New Hampshire bridge builder. Paddleford had built several bridges using the Long truss, a panel truss patented in 1830 by another New Hampshireman, army engineer, Col. Stephen H. Long (1784-1864). Paddleford modified the Long truss by extending the counterbraces, thus superimposing the panels and stiffening the truss. As Peter Paddleford never patented or promoted his truss, knowledge of the truss spread slowly from builder to builder. Paddleford erected at least four bridges in the Conway-Fryeburg area. And the two Conway families of covered bridge builders, the Berrys and the Broughtons, both used the Paddleford truss for their surviving bridges--the Berrys for the Swift River Bridge in Conway and the Durgin Bridge in Sandwich, the Broughtons for the Saco River Bridge in Conway and the Jackson Bridge in Jackson. So, it is not surprising to find the Paddleford truss used for the Whittier Bridge, which is associated with these Conway bridge builders. However, use of the Paddleford truss was limited to a relatively small region in northern New England. The Paddleford truss never became as popular as any of the patented trusses. And, many examples of the truss have since disappeared, including all of the bridges attributed to Peter Paddleford himself. Today, there are only twenty-two remaining Paddleford truss bridges in the world, five in northwestern Maine, fourteen in northern New Hampshire and three in northeastern Vermont. The Whittier Bridge and those other few survivors should be recognized as examples of an interesting American bridge design, and as reminders of a significant episode in American Engineering history.

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Continuation sheet #5 BIBLIOGRAPHICAL DATA Item number 9

Page 1

Richard Sanders Allen, COVERED BRIDGES OF THE NORTHEAST (Brattleboro, Vt., 1957).

Shelly Gregoire, "Restoring A Covered Bridge", Granite State News, (Wolfeboro),
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John Howe, "Builders Restoring Famed Bridge", Laconia Evening Citizen, January 20,
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"Ossipee's Old Covered Bridge at West Ossipee", Carroll County Independent, (Center
Ossipee), February 22, 1935.

James Welch, "Covered Bridge at West Ossipee", Carroll County Independent, (Center
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W. Edward White, COVERED BRIDGES OF NEW HAMPSHIRE, (Plymouth, N.H., 1942).

"Whittier Covered Bridge Reopened", Laconia Evening Citizen, August 25, 1983.

Correspondence - Audrey Berry, Tamworth, N.H.

Correspondence - Alvah Carver, Conway Historical Society, Conway, N.H.

Correspondence - Marion Nickerson, Chocorua, N.H.

Interview - Roger Blaisdell and John Moore, Bridge Design Division, N.H. Dept. of
Public Works and Highways, August 24, 1983.

Interviews - Edward Cook and Edward Cook, Jr., July 25 and August 19, 1983.

Interview - Arnold Graton, August 22, 1983.

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Continuation sheet #6 SKETCH MAP

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