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Garvin--Connecticut River Bridges, Rev. 7/2009

### **LIST OF HIGHWAY BRIDGES ON THE CONNECTICUT RIVER BETWEEN VERMONT AND NEW HAMPSHIRE BY 1906, WITH NOTES ON LATER SPANS**

The basic information in this list was obtained from *Report of the Bridge Commissioners of the State of New Hampshire to the Legislature, Dec. 31, 1906* (Manchester, N.H.: John B. Clarke Company, 1906)

Existing bridges are identified by New Hampshire Department of Transportation bridge coordinates, as "042/044."

*[Bridges described in italics had disappeared by 1906.]*

1. Hinsdale to Brattleboro, Vermont. The first bridge was built in 1804 by the Hinsdale Bridge and Sixth New Hampshire Turnpike Corporation, chartered in 1802. Frederick J. Wood in his *The Turnpikes of New England* (1919) says that this company "appears to have been primarily a toll-bridge corporation, although it had authority to build about ten miles of turnpike through Hinsdale and Winchester to connect with a branch of the Fifth Massachusetts [Turnpike] which was built to the state line prior to 1806." The Hinsdale Bridge was apparently replaced several times. *Hinsdale, New Hampshire* (Hinsdale, N.H.: Bicentennial Committee [1976]) says that bridges here have "been carried away, by floods and ice, on the average of once in every ten years." The corporate name was shortened to "Hinsdale Bridge Corporation" in 1853, probably reflecting the relinquishment of any turnpike road the corporation had built.

In 1888, the towns of Hinsdale and Brattleboro joined together to purchase the property of the Hinsdale Bridge Corporation for \$15,000, freeing the crossing. In 1903, the wooden bridge at this crossing (illustrated in Glenn A. Knoblock, *New Hampshire Covered Bridges* [2002], p. 54) was replaced by a toll-free iron bridge at a cost of \$43,434.68. According to *Hinsdale, New Hampshire*, the Hon. Lemuel Franklin Liscom (1841-1916) "was active in securing the erection of a new iron bridge (320 foot single span) over the Connecticut opposite Brattleboro and was its

Inspecting Engineer. He drew specifications for the super and substructure.” Photographs of Liscom’s 1903 bridge appear in Richard P. Corey and Ellen R. Cowie, “Archaeological Phase IB Survey of the Brattleboro-Hinsdale Connecticut River Bridge Crossing Project, BRF 2000(19)SC, Cheshire County, New Hampshire, and Windham County, Vermont.” These photographs show that Liscom’s bridge was a Pennsylvania through truss span quite similar in design to the present bridge at the site.

Liscom’s bridge was replaced in 1920 by a 330-foot-long Pennsylvania truss (041/040), designed by John Storrs and built by the American Bridge Company. This is one of two single-span Pennsylvania truss bridges in New Hampshire, the other being the 352-foot span between Piermont and Bradford, Vermont (No. 17, below).

Connecting the island to the mainland on the Hinsdale shore is a 200-foot-long Parker truss with horizontal stiffeners (042/044; built in 1926), spanning a back channel of the Connecticut River. The archaeological report cited above illustrates several wooden covered bridges that had previously stood at or near the present back channel crossing, as well as several covered bridges that preceded the 1920 span across the main channel.

2. West Chesterfield to Brattleboro, Vermont. The first bridge at this crossing was a suspension bridge with steel stiffening trusses, built in 1888 and dedicated on June 4, 1889 (see HAER report on Bridge 040/095). In 1906, the Bridge Commissioners noted that “there is now a free bridge from Chesterfield to Brattleboro, built by those towns, and thrown open to the public in 1888 at a cost of \$12,500.” This bridge was built by the Berlin Iron Bridge Company; *Berlin Bridges and Buildings* (Vol. I, No. 7, October 1898) describes the bridge as a “Suspension Bridge consisting of one span 320 ft. long with a roadway 16 ft. wide.” Storrs made a number of photographs of the suspension bridge and its stone abutments in 1922. The suspension bridge was replaced by the present two-hinged arch in 1937. Its cables were salvaged to support a temporary pedestrian suspension bridge over the Merrimack River at the site of the MacGregor Bridge, which had been destroyed by the floods of 1936.

The Vermont abutment of the two-hinged arch bridge is ledge. The New Hampshire abutment is reinforced concrete on 96 steel H piles, standing on sand that contains some gravel (wash borings, 6/10/36). The present bridge (040/095) was designed by John H. Wells of the New Hampshire State Highway Department, who also designed the Orford-Fairlee Bridge (No. 16, below) and a smaller tied-arch bridge in Woodstock, N.H., in 1939. The Chesterfield-Brattleboro Bridge won an award of merit from the American Institute of Steel Construction as the “Most Beautiful Steel Bridge” in Class C in 1937; the Orford-Fairlee Bridge won second-place honors the same year. Sverdrup & Parcel note that “remains of an earlier structure [are] located about 75 ft. upstream.”

In 2003, a new steel arched bridge was completed adjacent to and upstream from the 1936 arch. The new bridge is half again as wide as the old; the old bridge will be rehabilitated for pedestrian use. No details are yet available on the new arched bridge.

3. *There was once a wooden bridge between Westmoreland and Putney, Vermont. It was destroyed about 1831 and was never replaced.* In 1914, Storrs & Storrs submitted designs for a one- and two-span Pennsylvania truss bridge at this crossing.
4. Walpole to Westminster, Vermont. This was initially a toll bridge, freed in 1870. It was a three-span Town lattice truss that stood on the site of a bridge that had been erected in 1807. The wooden bridge burned in 1910, and was replaced by a three-span through plate girder bridge designed by the firm of J. R. Worcester Company of Boston. See HAER report by Christopher Closs. Storrs made several photographs of the bridge circa 1922, showing it to have been a variable-section bridge with deepened haunches at the two stone piers that had supported the wooden bridge, even though the bridge was not structurally continuous (having a hinged middle span). The through plate girder bridge, in turn, was replaced by a bridge of steel stringers (132/062) in 1988.
5. Walpole to Bellows Falls (Rockingham), Vermont. This was the Tucker Toll Bridge, a Town lattice truss of 1840 that had replaced Enoch Hale's braced stringer bridge of 1785, the first span across the Connecticut River. Tucker's Bridge was a toll bridge until November, 1904, when it was purchased by the towns of Walpole and Rockingham for \$20,000 and freed. The covered bridge was replaced by the Vilas Bridge (062/052), a two-span open-spandrel concrete arched bridge, in 1930. Vilas Bridge was designed by the New Hampshire Highway Department and built by Robie Construction Company. Charles S. Vilas was a leading citizen of Alstead, New Hampshire, and donated \$66,931 for the construction of the span that bears his name. Vilas died before the bridge was completed and dedicated as a "Symbol of Friendship" between New Hampshire and Vermont.
6. North Walpole to Bellows Falls (Rockingham), Vermont. This was a three-hinged steel trussed arch, designed by J. R. Worcester and completed in 1905 at a cost of \$47,008.91. The bridge evidently stood at a location where there had never been a crossing. When new, the Bellows Falls Bridge was the longest arch in the United States, having a span of 540 feet. The arched bridge was demolished in 1982. It was replaced by a bridge of steel stringers (058/044).
7. Charlestown to Springfield, Vermont. This was the Cheshire Toll Bridge, a three-span Town lattice truss that was purchased in 1897 by the Springfield Electric Railway Company and replaced; the New Hampshire Historical Society owns photographs of the replacement process. The new span was described by the Bridge Commissioners in 1906 as a 600-foot-long three-span steel Pratt truss built at a cost of \$65,000 and capable of carrying both highway traffic and freight and

passenger cars of the electric railway. This bridge was apparently built by the Berlin Iron Bridge Company; *Berlin Bridges and Buildings* (Vol. I, No. 7, October 1898) describes a “Pratt Truss Bridge, consisting of three spans; one span 147 feet long and two spans 163 feet long with a roadway 20 ft. wide.”

The present bridge at this site (135/052) is a three-span high Pennsylvania truss built by McClintic-Marshall Company of Pittsburgh, Pennsylvania, in 1930. Each span differs in length from the others, apparently reflecting the spacing of the stone piers that supported the wooden Town lattice truss bridge. Spans are: 153’-6½”, 169’-2”, and 166’-6.”

8. *Claremont to Weathersfield, Vermont. The Claremont Bridge Company built and operated a wooden toll bridge here from 1839 until the bridge was destroyed by flood in March, 1904. The wreckage of the Claremont Toll Bridge is illustrated in Glenn A. Knoblock, New Hampshire Covered Bridges (2002), p. 55. In 1906, the location of a replacement bridge was still being debated. Storrs: A Handbook (1918) illustrates a three-span high Parker truss bridge at this location, stating that it “was designed by STORRS, BRIDGE ENGINEERS, [and] was built to take the place of an old toll bridge which was carried away by freshet.” No date of construction is given. The United Construction Company broadside reveals that this company fabricated the bridge, and refers to it as a “pin-connected truss” with two 180-foot spans and one 177-foot span. This appears to be the same bridge illustrated in New Hampshire Farms for Summer Homes (1909), described as a “New Steel Bridge over the Connecticut River at Claremont.” A post card carries a similar caption.*

The present bridge (065/134) is a steel stringer bridge built in 1969 to carry N.H. Route 103 across the Connecticut River. According to Frank J. Barrett, Jr., it crosses to Ascutneyville just south of the alignment of the bridge of c. 1906.

9. *Cornish to Windsor, Vermont (064/108). This is a two-span Town lattice truss built in 1866. It became a free bridge in 1943. It is the fourth bridge at this location, its three predecessors having been built in 1796, 1825, and 1849. The bridge of 1796 is reputed to have been an arched bridge, based on Timothy Palmer’s patent. The bridge of 1825 is illustrated in a watercolor by Edward Seager, painted in 1848. This picture suggests that the second bridge was a three-span structure with sheathed trusses but no roof, unlike the present two-span bridge. The Cornish-Windsor Bridge of 1866 is the longest historic covered bridge remaining in the United States and the longest two-span covered bridge in the world.*
10. *There was formerly a toll bridge between Plainfield and Hartland, Vermont. It was built in 1826 by David H. Sumner, and was destroyed by flood in 1840. It was rebuilt in 1840, but carried away again in 1856. It was never rebuilt. In 1908, John W. Storrs prepared drawings for a bridge at this site (one sheet in DHR files), but the proposed span was never built. The book Covered Bridges of New England (1956 edition) by Clare E. Wagemann includes a drawing of a Town lattice truss owned by the Vermont Historical Society which “may be a drawing for the side*

*[truss] of the toll bridge (1841-59) between Hartland, Vt. And Plainfield, N. H., built by David Sumner.” NHDHR has a photocopy of two photographs of the site of this bridge, taken by Richard Sanders Allen in 1965, and a report about the bridge compiled by Howland Atwood of Windsor, Vermont, in 1990 (see NHDHR Plainfield Historical Information file).*

11. West Lebanon to Hartford, Vermont. The Proprietors of the White River Falls Bridge, solely owned by Elias Lyman of Hartford, Vermont, after 1803, maintained a wooden toll bridge here from about 1804 until 1879, connecting the Fourth New Hampshire Turnpike with the White River Turnpike. In 1879, the towns of Lebanon and Hartford paid a total of \$4,557.98 to free the bridge. According to *Fifty Old Bridges of Lebanon, New Hampshire*, the first bridge (probably a stringer span) was replaced in 1836 by a three-span covered bridge, which is pictured in the book. The covered bridge was destroyed by flood in 1896. A new steel bridge was thereupon built by the two communities at a reported total cost of \$40,766.04. Total length of this bridge was 427 feet. This bridge appears to have been designed by Robert Fletcher, head of the Thayer School at Dartmouth College, who was employed as consulting engineer. It was built by the Berlin Iron Bridge Company; *Berlin Bridges and Buildings* (Vol. I, No. 7, October 1898) describes the bridge in Lebanon as a “Pratt Truss Bridge consisting of three spans, two 141 ft. long and one 83 ft. long with a roadway 20 ft. wide and one 6 ft. walk.” The photograph of the covered bridge shows that the piers and abutments of the covered bridge were replaced by a new stone substructure in 1897, but suggests that the new stone piers were placed at the same locations as those of the covered bridge of 1836. The first steel bridge at this crossing was destroyed by the flood of 1936.

The present bridge between West Lebanon and Hartford on Route 4 (058/127) is composed of two high Pratt spans and one low Warren span. It was built by the American Bridge Company in 1936. It stands on the substructure of 1897, although the bridge elevation was raised by the addition of concrete bridge seats atop the stone. The recorded span lengths of the 1936 bridge are 88’-0”, 143’-6”, and 148’-9”.

12. Lebanon to Wilder Village, Hartford, Vermont. This was a free bridge built at an expense of \$12,000, bequeathed to the two communities under the will of Mr. Wilder of Lebanon, New Hampshire. According to Frank J. Barrett, Jr., the bridge was taken down when the Wilder Dam (completed in the fall of 1950) was constructed. There is no crossing here now, but the abutments of the old bridge remain visible. Storrs made at least two photographs of the Lebanon-Wilder bridge on November 1, 1922, showing it to have been a two-span crossing. A low Pratt truss spanned a canal or dam impoundment on the Vermont end, and a high double-intersection Warren truss (lattice) bridge spanned the main channel.
13. Hanover to Norwich, Vermont. The first bridge at this location was built in 1796 by the White River Falls Bridge Company, and was the second bridge over the Connecticut River between New Hampshire and Vermont. The bridge of 1796,

built by a local contractor on Timothy Palmer's design, fell of its own weight in 1804. The second bridge had two spans, but was not roofed. A third bridge was built here in 1839, also without a roof. It was destroyed by fire in August, 1854. The fourth bridge, the Ledyard Bridge, was built by the two towns at a total cost of \$10,500. It opened in 1859 and was a free bridge. It was a two-span Town lattice truss, with a total length of 402 feet. According to Frank J. Barrett, Jr., surviving blueprints show that arches were added to the trusses in 1927. Storrs made at least two photographs of Ledyard Bridge on November 1, 1922. These show no arches, but seem to show sheathed diagonal braces extending upward from both sides of the central pier. The bridge was taken down in the fall of 1934, occasioning the writing of at least two poetic laments by Dartmouth students, published in the *Dartmouth Alumni Magazine*. It was replaced by a three-span continuous deck plate girder bridge (026/056), having girders of variable section, in 1934-5. The steel bridge, in turn, was replaced in 1999.

14. Lyme to East Thetford, Vermont. This was a steel bridge, built in 1896 to replace an earlier wooden covered bridge destroyed by a freshet. The steel bridge was described in the 1906 Bridge Commissioners' Report as 420 feet long. New Hampshire Highway Department records of 1936 indicate that the bridge had three spans measuring 131 feet, 134 feet, and 131 feet, but that its overall length was 421.03 feet. A Storrs photograph shows that this bridge was a three-span Pratt truss built by the Canton Bridge Company of Canton, Ohio.

The bridge was replaced after its middle span was destroyed in the flood of March, 1936. The present bridge at this location (053/112) is a two-span high Parker truss designed by Clifford Broker and G. R. Whittum of the New Hampshire Highway Department, and fabricated by the American Bridge Company in 1937. Each of its spans is 232 feet long.

15. Lyme to North Thetford, Vermont. This was another steel bridge, 380 feet long, built as a toll bridge in 1896 by the North Thetford Bridge Company. It was purchased by the two towns in 1899 at a total cost of \$7,900, and freed. Storrs photographs show that this bridge was a two-span, double-intersection Warren truss with vertical members at mid-panels, making it a form of Petit truss. According to Frank J. Barrett, Jr., the North Thetford Bridge was closed to traffic in the late 1950s. The Vermont span collapsed in the winter of 1972 or 1973.
16. Orford to Fairlee, Vermont. In 1906, this was a two-span wooden bridge dating from about 1856, a Town lattice truss with added braces that are recorded in HABS drawings of circa 1936. It was damaged in the floods of 1936 and replaced by the present steel tied arch bridge in 1936-8. The first bridge at this location was built by the Orford Bridge Company in 1800-2, and was described by Timothy Dwight as a "neat bridge, consisting of one very obtuse arch supported by trestles." This bridge was destroyed by floods in 1809. The second bridge at this crossing was supported on three stone piers. Like its predecessor, the bridge had no roof. It survived until 1856 when the third bridge, described as a Town lattice truss with a

single central stone pier, was constructed. This bridge was freed in 1896 at a total cost of \$6,000. The Bridge Commissioners' report of 1906 notes that this bridge "is in danger every spring of being swept away by ice and high water." The Historic American Buildings Survey took two exterior photographs of the blockaded bridge in 1936, showing a damaged sidewalk on the upstream side, and an interior photograph, showing that the bridge was of heavy, notched Town lattice design, with no arches.

The present bridge (062/124) was designed by John H. Wells of the New Hampshire Highway Department, who designed a similar but smaller tied-arch bridge in Woodstock, N.H., in 1939. The Orford-Fairlee Bridge was named the "Samuel Morey Memorial Bridge" at its dedication on June 29, 1938. It won an award from the American Institute of Steel Construction in 1937 as second-best in its class; Wells' Chesterfield-Brattleboro Bridge won first-place honors in Class C the same year.

17. Piermont to Bradford, Vermont. This bridge was built by the Piermont Bridge Company, and Storrs photographs show it to have been a two-span Town lattice truss. Its eastern (Piermont) abutment was a 1908 concrete replacement for the original stone abutment. The bridge is also illustrated in Glenn A. Knoblock, *New Hampshire Covered Bridges* (2002), p. 59. It was freed by the two towns in 1901 at a total cost of \$6,000.

The present span at this location (032/103) is a 352-foot single-span Pennsylvania truss with horizontal stiffening members at the centers of the high posts near the center of the span; the tallest of these posts are 52 feet long. The Boston Bridge Works built the bridge in 1928. The eastern abutment is a concrete structure designed by John Storrs in 1908; the western abutment is granite. After being employed to support the center of the steel bridge during construction, the old central pier of the wooden bridge was removed. Its base remains visible in the bed of the river. The current bridge at this location is the longer of two single-span Pennsylvania truss bridges in New Hampshire, the other such bridge being the 330-foot bridge (1920) between Hinsdale and Brattleboro, Vermont (No. 1 [041/040], above).

18. Haverhill Corner to South Newbury, Vermont. This was the Bedell Bridge, a two-span, 396-foot Burr truss bridge built in 1866. This was the fifth bridge at this location; the first was built in 1806. The bridge was acquired by the towns of Haverhill and Newbury in 1916 and freed. It was photographed by Storrs on November 1, 1922. Additional arches of laminated planks were inserted in the bridge around 1927. The last Bedell Bridge blew down in 1979, shortly after having been rehabilitated by bridge builder Milton Graton and reopened to traffic. There is now no bridge at this location.
19. Haverhill to Newbury, Vermont. Built in 1834 by the Haverhill Bridge Company at a cost of \$10,000 on the site of a bridge of 1796 built by Moody Bedell, this 300-

foot wooden toll bridge was of a unique two-lane design. A wood engraving reproduced in Richard Wood's *Stephen Harriman Long* (1966), p. 173, and in Glenn A. Knoblock, *New Hampshire Covered Bridges* (2002), p. 61, shows the bridge to have been built on Stephen Long's patent. It was purchased about 1906 by Henry W. Keyes of Haverhill and closed to the public because of structural problems. Keyes offered to give the bridge to the towns of Haverhill and Newbury if they would correct its structural deficiencies and make it a free bridge. The towns accepted the offer. This span was damaged by spring floods and ice jams in 1913. The towns thereupon erected a new steel structure, known as the Keyes Bridge. Storrs photographs show a two-span Parker truss, on concrete abutments and pier, at this location. The bridge is pictured in *Flood Waters, New Hampshire, 1936*. The present bridge from Haverhill to Newbury (099/149) is an I-beam stringer span with a concrete deck, built in 1970 just south of the location of the earlier Keyes Bridge.

20. Haverhill (Woodsville) to Newbury (Wells River), Vermont. The first bridge at this crossing was built in 1805. The Boston, Concord & Montreal Railroad reached Woodsville in 1853. Their bridge across the Connecticut River was a double-deck covered wooden Burr span, said to have been the longest single-span bridge in the country (DHR survey files). The covered bridge had a highway deck at the bottom of the truss and railroad tracks on the roof. The railroad corporation collected tolls from users of the highway bridge.

In 1903, the Boston & Maine Railroad employed the American Bridge Company of New York to build a still-extant pin-connected steel Baltimore truss bridge. As built, this bridge carried the highway below the tracks (but at a level above the bottom chords), and the railroad continued to collect tolls from highway users. The bridge ceased to carry highway traffic in 1917 and was no longer used by rail traffic in 2001, when it was returned to temporary highway use. It was adapted to carry rerouted highway traffic on a new deck placed on its *top* chords while the adjacent arched bridge was being rehabilitated.

The highway crossing was separated from the railroad crossing when John W. Storrs designed a three-span Warren deck truss just downstream from the railroad bridge in 1917. Named the "Ranger Bridge" and built at a cost of about \$65,000, this span was destroyed by a flood which undermined its piers in 1922.

The Ranger Bridge was replaced by the present three-hinged arch truss bridge (219/178) in 1923. The present arched bridge was designed by J. R. Worcester Company of Boston, the same firm that had designed the three-hinged arched truss at North Walpole and Bellows Falls in 1905. It was rehabilitated in 2001-3.

21. Monroe to Barnet (McIndoe Falls), Vermont. The first bridge was built here in 1803 and was destroyed by a flood in 1833. A new bridge was built in 1834 by the Lyman Bridge Corporation. Storrs photographs of June 23, 1921 show it to have been a two-span Paddleford truss bridge, with arches. Joseph Conwill has stated



that “the bridge at McIndoe’s is quite significant as being, supposedly, an 1834 product of Peter Paddleford, and the first known instance of his truss. I wonder if it was really the 1834 bridge that survived into the 20<sup>th</sup> century, however.”

The present bridge at McIndoe Falls (081/106) is a single-span 305-foot Parker truss built in 1930 by the American Bridge Company. The bridge has horizontal stiffeners between the four tallest posts in the center of the span. It was rehabilitated by the New Hampshire Department of Transportation in 2005-7.

22. North Monroe to Barnet, Vermont. The first bridge built here was constructed by the Stevens Village Bridge Company in 1828. Three different bridges were built there between 1850 and 1906. The bridge that stood in 1906 was a one-span Town lattice bridge with added arches, as shown by Storrs photographs taken on October 31, 1922. According to Glenn A. Knoblock, *New Hampshire Covered Bridges* (2002), p. 62, this bridge was built in 1877 and stood until 1937. Its length was given variously as 210, 225, and 230 feet. Frances Ann Johnson, in her *The History of Monroe, New Hampshire, 1761-1954* (1955) states that this bridge was built by Henry Paddleford of Littleton in 1877 and that “it was 210 feet long and was claimed to be the longest one-span covered wooden bridge in the world” (p. 151).

The present bridge at this location (110/125) is a single-span 268-foot Parker truss, built in 1937. The bridge has horizontal stiffeners between the four tallest posts in the center of the span. Adjacent to the main bridge on the Vermont end is a low (pony) Parker truss bridge that conveys the approach road over railroad tracks on that end.

23. Littleton to Waterford, Vermont. The bridge at this location in 1906 was a one-span Pennsylvania (Petit) truss, as shown in several Storrs photographs taken on June 23, 1921 and in *Flood Waters, New Hampshire, 1936*. The bridge was built about 1890 as a private toll bridge by the Littleton Bridge Company at a cost of \$11,000. One Storrs photograph shows that the bridge was posted for a 4- or 6-ton live load (photo is unclear) in 1921. The Bridge Commissioners reported that it was about to be freed in 1906. Due to damage from the 1927 flood, the span was condemned about 1931 and closed to all traffic except single vehicles, being replaced by a new Route 18 deck plate girder bridge (109/134) built in 1934 about a mile downstream. The bridge was destroyed by ice floes during the flood of 1936. There is no bridge at this location today. Route 93 crosses the Connecticut River east of the former bridge site, and N.H. Routes 18 and 135 cross the river easterly of Route 93, on Bridge 109/134.

24. *Dalton to Concord and Lunenburg, Vermont. As reported in 1906, a bridge had crossed the Connecticut here “many years ago,” and its franchise was still held by the Littleton Bridge Company. No span stood there in 1906.*

The present bridge between Dalton and Lunenburg (090/130) is a three-span steel Pratt deck truss built in 1928 by the Berlin Construction Company of Berlin,

Connecticut. NHDOT records state that in 1927 there was “no present structure; bridge in new location.” As of 1997, this span was scheduled to be preserved as a historic structure and bypassed by a new span downstream.

25. *South Lancaster to North Lunenburg, Vermont. As reported in 1906, a toll bridge built by the Union Bridge Company had stood at this location “for many years,” but had been washed out in 1905 and had not yet been replaced.*

The present Mount Orne covered bridge (039/105), a two-span Howe truss built in 1911, appears to have been built at the same location as the former toll bridge. The National Register nomination states that the Mount Orne covered bridge was built by the Berlin Iron Bridge Company, but the fabricator must have been the Berlin Construction Company of Berlin, Connecticut, which came into being around 1900 when the American Bridge Company acquired the old Berlin Iron Bridge Company. This bridge is composed of two simple spans and is not continuous across the central concrete pier. Storrs photographed the bridge on October 2, 1922.

26. *Lancaster to Guildhall, Vermont. A bridge had been chartered in this location as early as 1804. In 1894, the towns of Lancaster and Guildhall freed the existing bridge, which had then stood for over fifty years, at a total cost of \$2,200. In 1902, a new wooden bridge was built at a cost of upwards of \$7,000. Storrs photographs of October 2, 1922 seem to show this to have been a two-span Howe truss bridge standing on abutments of split and mortared granite (the pier is obscured), although the Storrs photographs of the Lancaster-Guildhall Bridge and the South Lancaster-Lunenburg (Mount Orne) Bridge may have been partly mislabeled by Storrs. A post card photograph reproduced in Glenn A. Knoblock, *New Hampshire Covered Bridges* (2002), p. 63, also seems to indicate that this was a Howe truss bridge.*

The present bridge between Lancaster and Guildhall on US Route 2 (111/129) is a two-span high Parker truss built in 1950; this may not be in the location of a historic bridge.

27. *Northumberland to Guildhall, Vermont. The Northumberland Bridge Company was chartered in 1802. Its bridge was destroyed by a tornado in 1854, and the company presumably built an entirely new span. The bridge was described in 1906 as a “wooden, covered structure, of one span.” By contrast, a photograph in Glenn A. Knoblock, *New Hampshire Covered Bridges* (2002), p. 63, shows this to have been a two-span Paddleford truss bridge, with arches, which measured 300 feet in length and remained in service until 1918. Storrs photographs of circa 1922 show the wreckage of a recently destroyed two-span wooden bridge. It was replaced by a two-span Parker truss bridge on a concrete substructure, shown in two Storrs photographs dated October 2, 1922. The truss bridge was, in turn, replaced in 1984 by a steel stringer bridge (141/059).*

28. *Stratford Hollow to Maidstone, Vermont. The free bridge in this location (098/064) was built in 1893 by the two towns in cooperation with the State of New*

Hampshire, at a total cost of \$3,500. It is a 151-foot-long pin-connected Pratt truss built by the Berlin Iron Bridge Company. The bridge survives as the oldest metal truss bridge across the Connecticut River between New Hampshire and Vermont. It was photographed by Storrs on October 3, 1922, and was rehabilitated in 2004-5. Because of the instability of the New Hampshire granite abutment and the eastward motion of the Vermont granite abutment, the bridge was placed on a new concrete substructure that moved the entire span slightly eastward and provided a short new approach span on the Vermont end.

29. North Stratford to Bloomfield, Vermont. In 1889, the State of New Hampshire reportedly appropriated \$4,000 to free a bridge in this location. This was the Baldwin Bridge, a wooden covered bridge built in 1852 by the Baldwin Bridge Company (E. A. & W. L. Baldwin), chartered in 1850. In 1893, state legislation authorized the town of Stratford to purchase the property of the Baldwin Company and build a bridge in this location (as well as the Stratford Hollow bridge described above), and appropriated up to \$4,000 of state monies to reimburse the town for one-third of the costs of these two bridges. The bridge of 1893 was a two-span lenticular truss. *Berlin Bridges and Buildings* (Vol. I, No. 7, October 1898) describes this bridge as a “Parabolic Truss Bridge consisting of two spans 130 feet long each with a roadway 18 ft. wide and one 6 ft. walk.” Storrs made two photographs of the bridge (incidentally showing an adjacent railroad bridge) on October 3, 1922.

The current bridge (029/206) crosses the Connecticut River upriver from the railroad bridge on a new “Bridge Street,” not downriver from the railroad bridge as did the 1889 span. The new bridge is a continuous deck plate girder bridge, with variable-section girders, constructed in 1947 (see HABS/HAER recordation for Bridge 029/206).

30. Columbia to Lemington, Vermont. In 1892 the Columbia Toll-Bridge Company built a one-span covered bridge to replace a former span that had been blown down.

The current bridge across the Connecticut River (077/140) is a covered wood-and-steel Howe truss. This bridge replaced the 1892 span when the latter burned in 1911. Storrs photographed the Columbia Bridge on October 3, 1922. The bridge remains as he photographed it except for the substitution of concrete abutments for stone. It is pictured in its current state in Glenn A. Knoblock, *New Hampshire Covered Bridges* (2002), p. 64.

31. Colebrook to Lemington, Vermont. In 1906 a single-span wooden bridge, built in 1855, crossed the Connecticut River at this point. The bridge had been a toll bridge, circumvented for a while by a pontoon bridge in the vicinity. After the courts ruled the pontoon bridge illegal, the two towns freed the wooden bridge at a cost of between \$1,500 and \$2,000. Storrs photographs record the bridge as it was on October 3, 1922. These photographs suggest that the bridge was a Long truss,

with arches. The bridge was taken down in 1947. It is illustrated in deteriorating condition in Glenn A. Knoblock, *New Hampshire Covered Bridges* (2002), p. 64.

The current bridge across the Connecticut River (039/107) is a steel stringer bridge built in 1953.

32. West Stewartstown to Canaan, Vermont. A former toll bridge, some sixty or seventy years old at the time, was bought and freed by the two towns in 1887 at a purchase price of \$1,560. A set of Storrs photographs, probably taken on October 3, 1922, show this to have been a three-span bridge. The two western Paddleford truss spans were reinforced by arches, and the short eastern span was apparently a structurally separate Howe truss, supported from below in 1922 by crude wooden horses. New Hampshire Highway Department records of c. 1927 give the span lengths as 69'-5", 106'-2", and 60'-0". A sketch dated November 20, 1927 by Walter R. Marden (Archives Box No. 049163) (following the floods of November 3-4, 1927) illustrates these features, and indicates that the New Hampshire abutment was in a state of collapse. The sketch indicates an old toll house on the New Hampshire end. This is visible in the Storrs photographs.

The wooden bridge was replaced in 1928 by a 220-foot steel Parker truss span with horizontal stiffeners between the tallest posts; posts at the center of the bridge were 33'-0" high.

The present bridge at this crossing (028/146) is a steel stringer bridge built in 1990.

33. Stewartstown to Canaan (Beecher's Falls), Vermont. Subscribers in Beecher's Falls, a village in the extreme northeastern corner of Canaan, built a free bridge about 1885. The bridge was 150 feet long and cost \$1,500. Storrs photographs of October 3, 1922 show it to have been a single-span Paddleford truss bridge with added laminated plank arches. It is also illustrated in Glenn A. Knoblock, *New Hampshire Covered Bridges* (2002), p. 65, and identified as a "Paddleford truss with added arch." The bottom of the Paddleford truss is exposed in the Knoblock photograph where an area of missing sheathing exposes the lower portion of the trusses and also shows that the laminated arch had split along the laminations in one area. The bridge served until the steel replacement was built.

The present bridge in this location (054/163) is a steel arch deck bridge built in 1930. The arch is two-hinged. The drawings for the structure in DHR files are unsigned, but the bridge was designed by Harold E. Langley of the New Hampshire Highway Department. It was fabricated by the American Bridge Company and erected by the Kittredge Bridge Company. The bridge won an award of merit from the American Institute of Steel Construction as the most beautiful steel bridge in Class C in 1931.

*Note: there are other bridges over the northerly portion of the Connecticut River that lies wholly in New Hampshire. These spans need to be studied. Notable*

*among them is a continuous two-span through plate girder bridge (030/066) between Clarksville and Pittsburg. Built in 1931, this and a similar bridge (189/129) in Bartlett are the oldest surviving continuous girder bridges in New Hampshire. Near the Clarksville-Pittsburg Bridge, and also crossing the Connecticut River, stands a bypassed covered bridge (088/037) with a Paddleford truss and arch, built about 1876.*