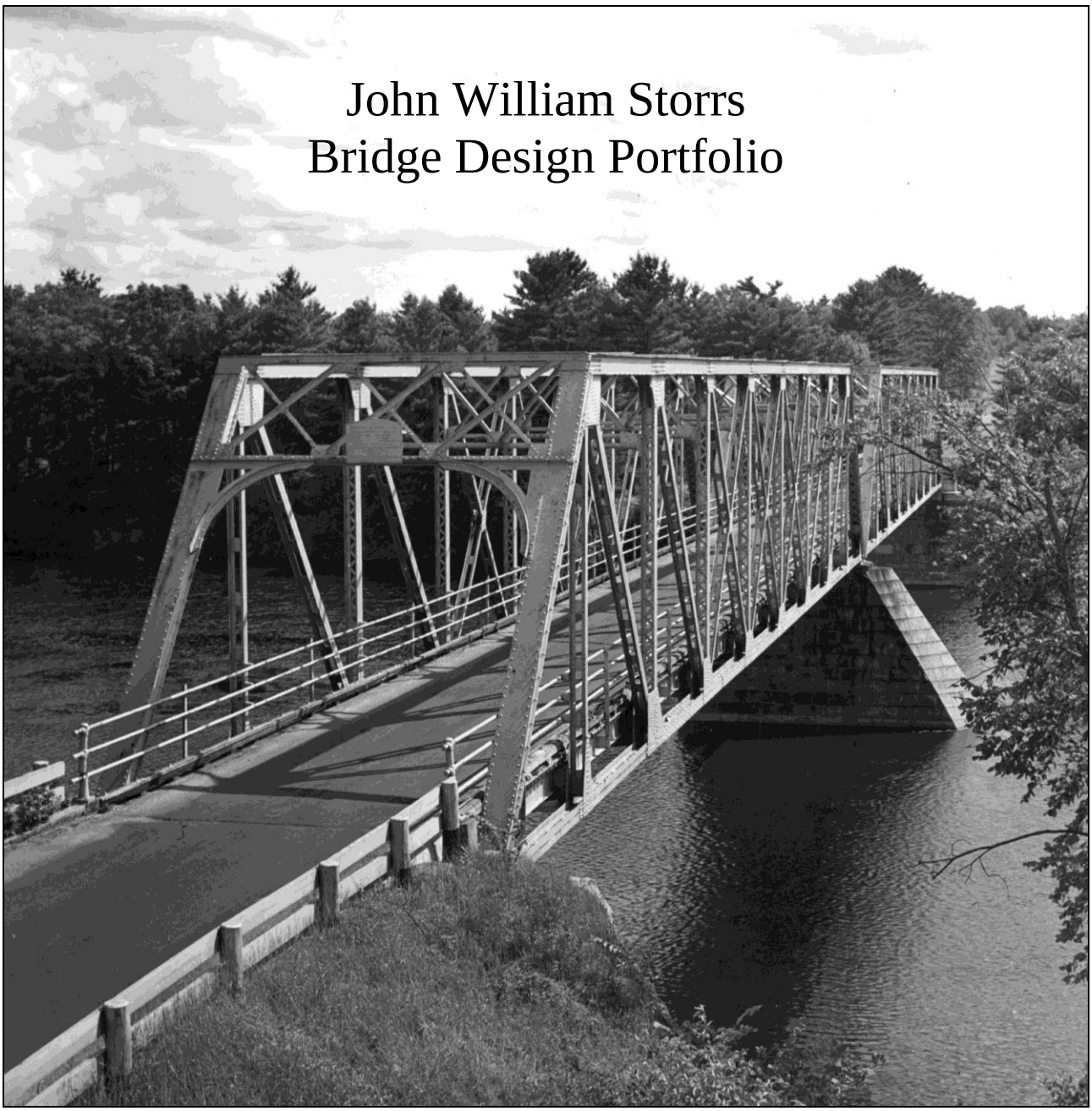
John William Storrs
Bridge Design Portfolio



Sewall's Falls Bridge over Merrimack River, Concord NH. Designed by John W. Storrs, built 1915, replaced 2016.

Prepared for

McFarland-Johnson, Inc.
Concord, New Hampshire

City of Concord, New Hampshire
Engineering Services Division

by

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Historic Documentation Company, Inc.
Portsmouth, Rhode Island

September 2017

This document has been prepared to fulfill a historic property mitigation requirement of the Sewall's Falls Bridge Replacement Project completed by the City of Concord in 2017. John W. Storrs (1858-1942), New Hampshire's preeminent bridge engineer, designed the Sewall's Falls Bridge in 1915. A companion document, *John William Storrs, Engineer & Public Servant, Concord New Hampshire*, provides additional information regarding many of his highway bridge designs depicted herein.

LIST OF FIGURES

FIGURE 1: Claremont 091/118, Plains Road over Sugar River. This single 131' span high Pratt truss was designed by John Storrs and built by United Construction Co. in 1906. Replaced in 1974. Photo August 26, 1942 (NHHD Bridge Inventory Card).

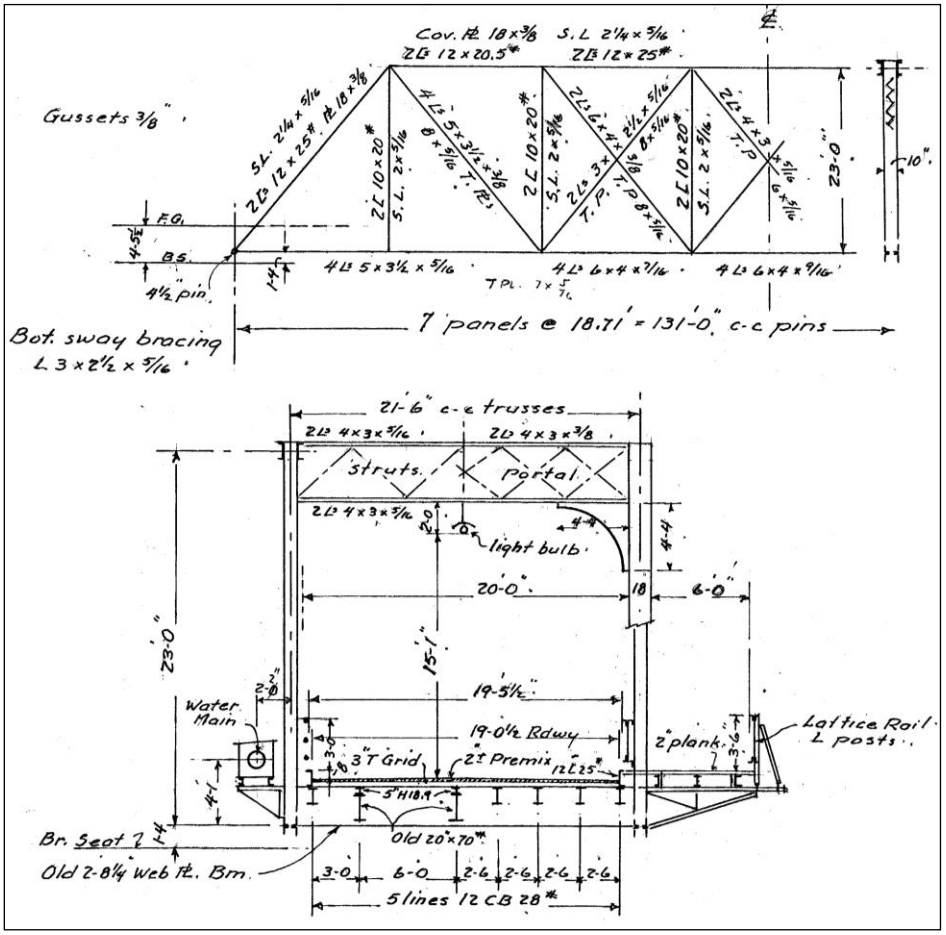


FIGURE 2: Claremont 091/118, Plains Road over Sugar River (1906). Section & elevation sketch (NHHD Bridge Inventory Card).

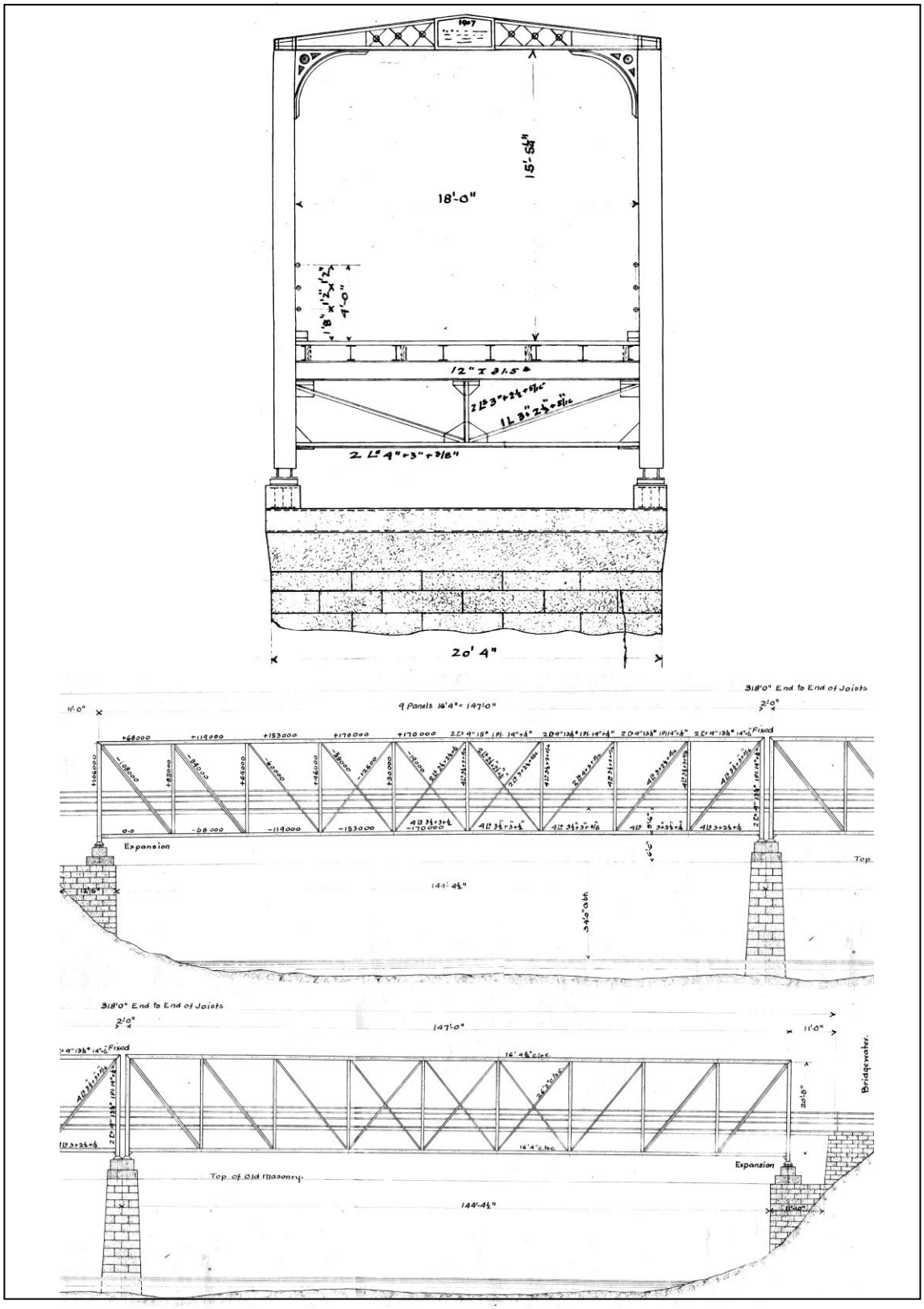


FIGURE 3: Ashland-Bridgewater, 076/080 over Pemigewasset River. An uncommon two-span, half-through, Pratt truss with vertical end posts. Designed by John Storrs and built by United Construction Co. in 1907. Replaced in 1937. Original plan drawings by John Storrs, 1907 (NHDOT Plan files).

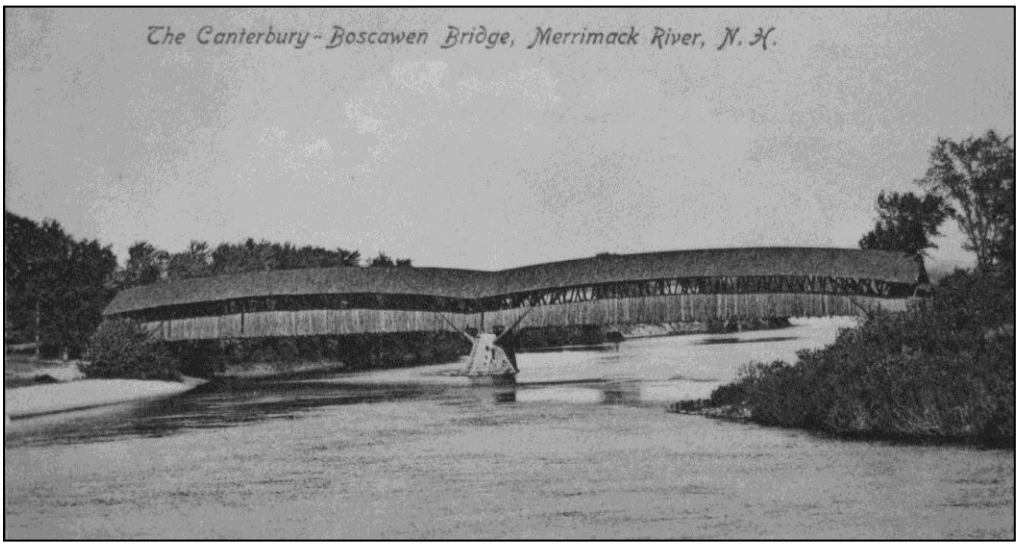


FIGURE 4: Boscawen-Canterbury Covered Bridge over Merrimack River, built in 1857 with unusual arched truss "humpback" design thought at the time to be only one one of its type in the US. Storrs inspected the bridge in October 1906 and recommended its replacement with a steel truss bridge. He was paid $30 for his inspection and report, $15 by each town. Postcard photo before 1907 (Canterbury Historical Society).

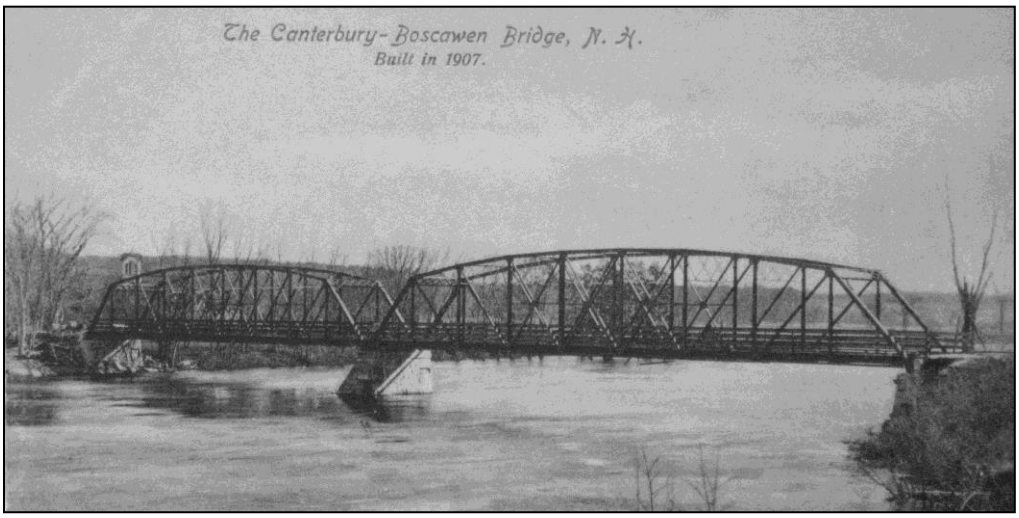


FIGURE 5: Boscawen-Canterbury 132/085, a 2-span riveted Parker truss designed by John Storrs, built by United Construction Company in 1907 to replace 1857 covered bridge. Demolished 2015. Postcard photo undated (Canterbury Historical Society).

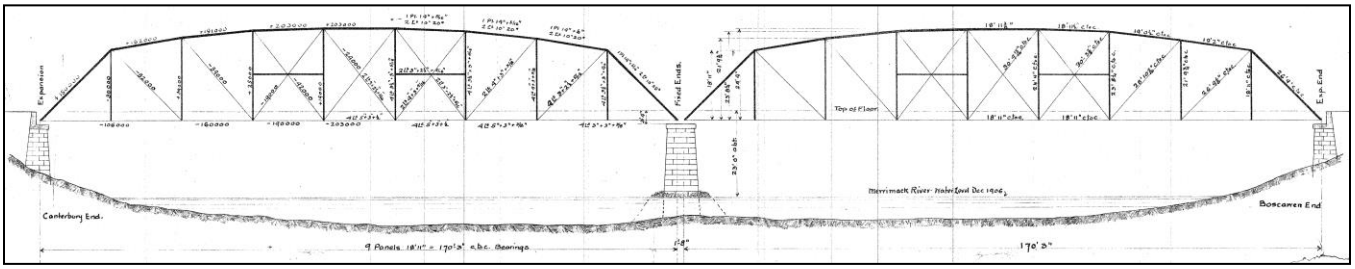


FIGURE 6: Boscawen-Canterbury 132/085 (1907). Clip from original plans by John Storrs, sheet 1 of 4, 1907 (NHDOT Plan files).

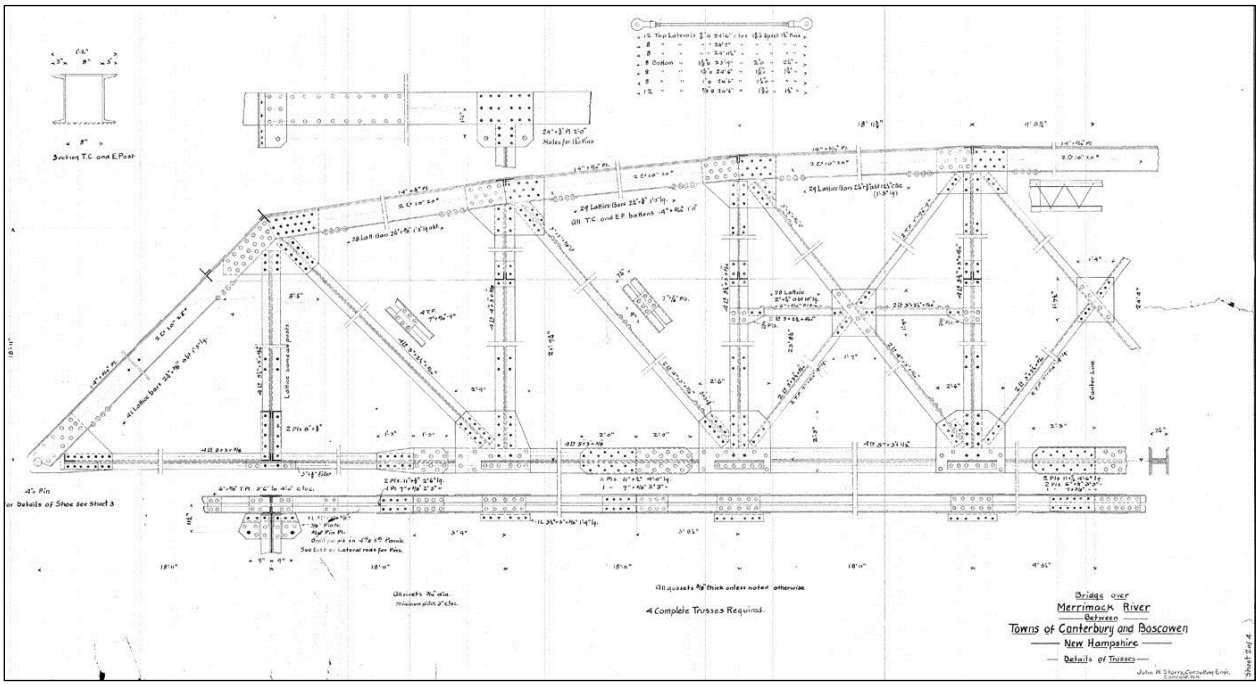


FIGURE 7: Boscawen-Canterbury 132/085 (1907). Clip from original plans by John Storrs, sheet 2 of 4, 1907 (NHDOT Plan files).

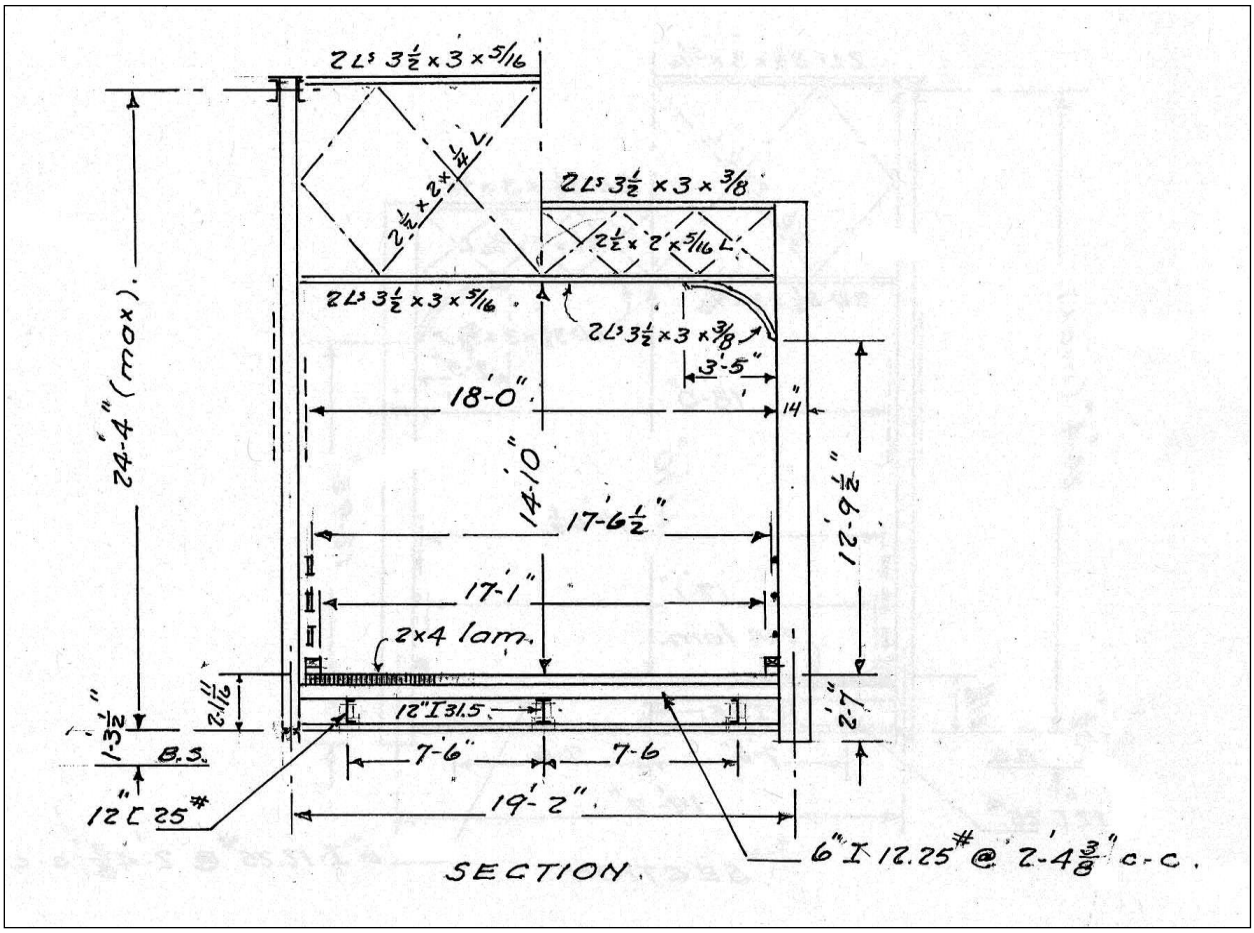


FIGURE 8: Boscawen-Canterbury 132/085 (1906). Section sketch (NHHD Bridge Inventory Card).

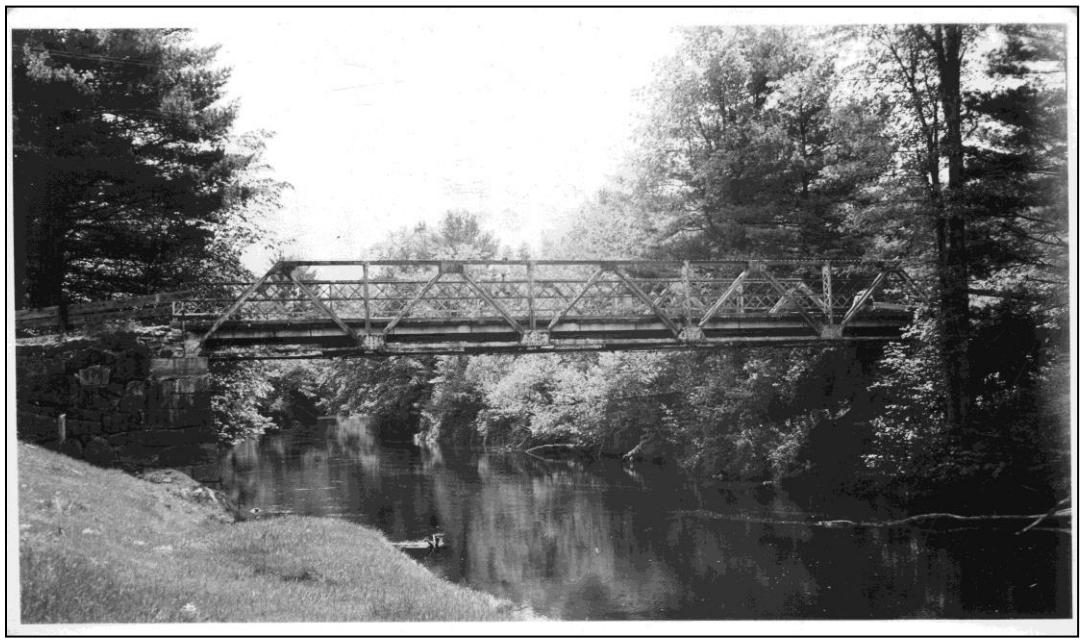


FIGURE 9: Hopkinton 134/166, East Penacook Road over Blackwater River. A single 70' span Warren pony truss, designed by John Storrs and built by United Construction Company, 1907. Replaced in 1967. This bridge replaced a covered bridge that Storrs inspected for Hopkinton Selectmen in April 1907. He reported that "To properly and effectively repair your bridge and put it into safe condition would cost from $500 to $600; this includes shingling the roof. The bridge would then probably be alright for several years. An estimate for a steel bridge to take the place of the present structure, would be from $1200 to $1500." The new bridge was chosen and set on reinforced concrete bridge seats cast atop the existing stone abutments. Photo May 27, 1942 (NHHD Bridge Inventory Card).

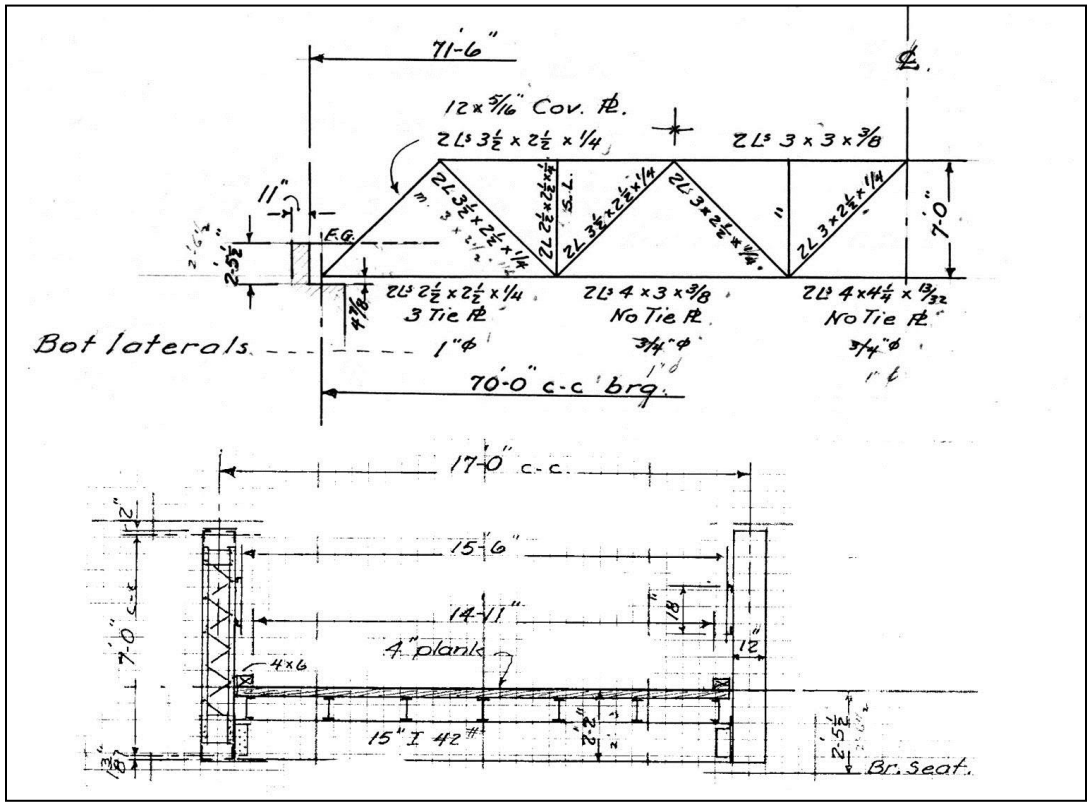


FIGURE 10: Hopkinton 134/166 East Penacook Road over Blackwater River (1907). Elevation and section sketch (NHHD Bridge Inventory Card).

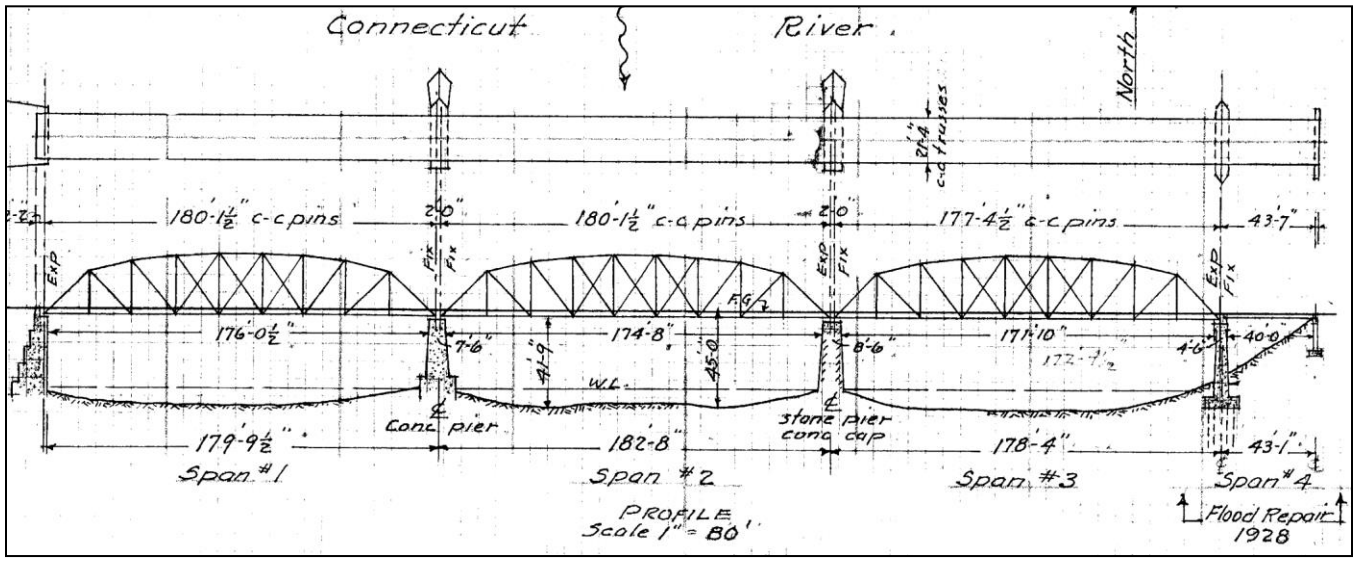


FIGURE 11: Claremont 065/137, "Ascutney Bridge" over Connecticut River between Claremont NH and Weathersfield VT. A 3-span pin-connected Parker truss designed by John Storrs, built by United Construction Company in 1908. Replaced in 1969. Plan & elevation sketch. (NHHD Bridge Inventory Card).

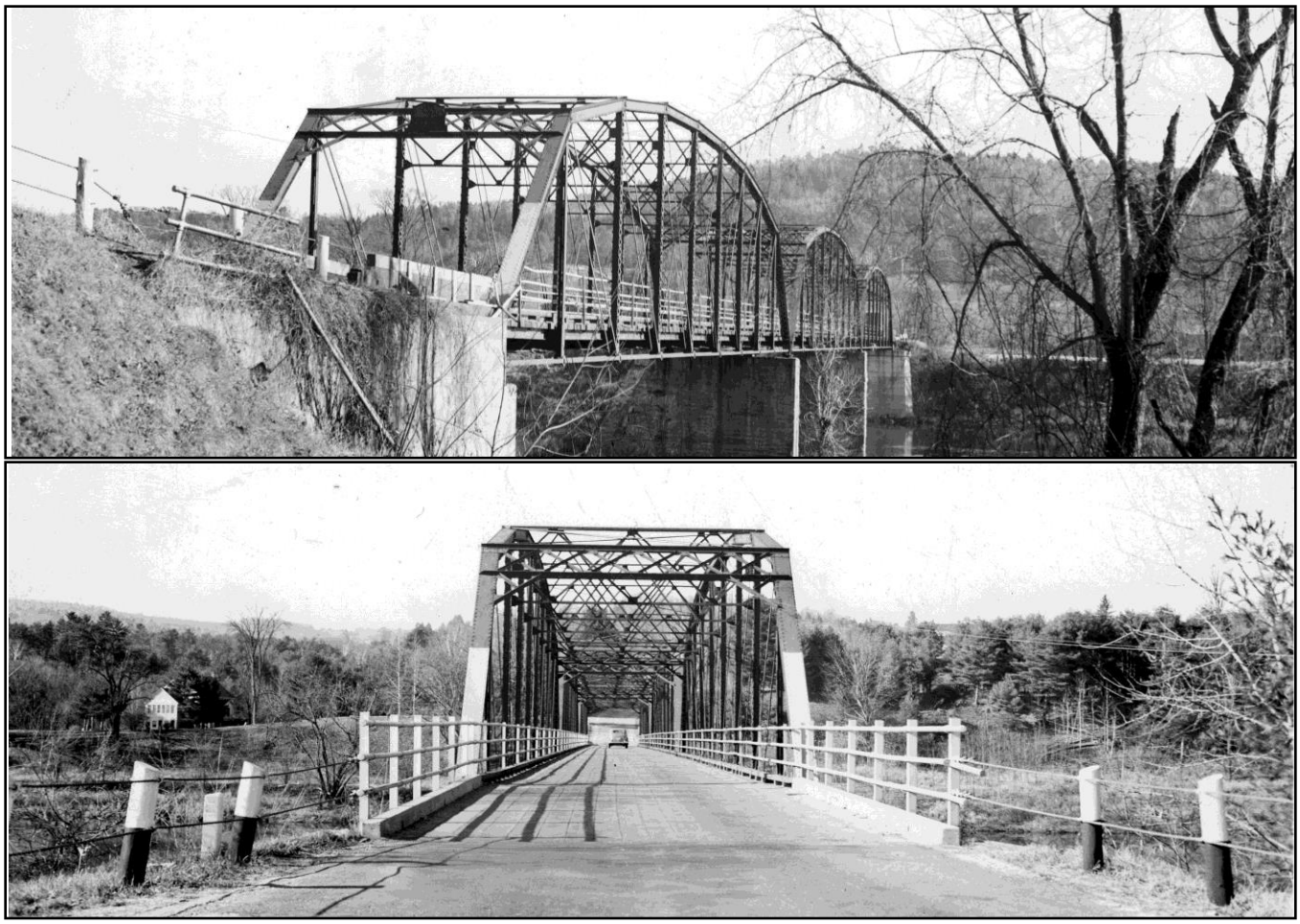


FIGURE 12: Claremont 065/137, "Ascutney Bridge" (1908). This bridge replaced the 1837 Claremont Toll Bridge, destroyed by freshet and ice in 1901. The east abutment was undermined in 1927 flood and replaced with a concrete pier and 40' I-beam approach span making it a 4-span bridge. Downstream side, top; east portal and 1928 approach span, bottom. Photos dated 11/19/1940 (NHHD Bridge Inventory Card).

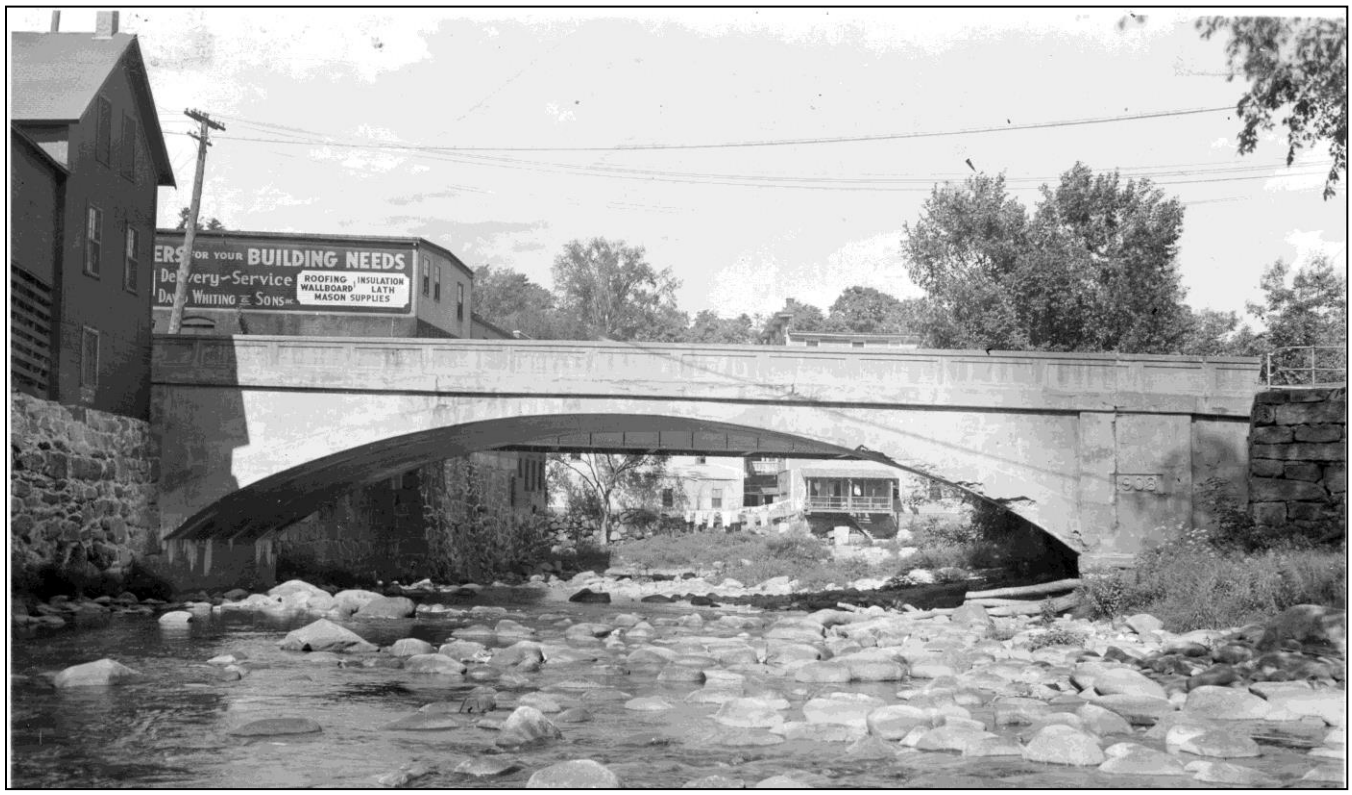


FIGURE 13: Wilton 129/126, single span concrete arch carrying NH 31 over Souhegan River. Designed by Storrs and built in 1908, contractor undetermined. Replaced in 1971. Clear span 77'-6". Photo July 14, 1941 (NHHD Bridge Inventory Card).

FIGURE 14: Claremont 106/120, NH 12/103 over Red River Brook. Designed by John Storrs and built by C. E. Walbridge, Plymouth NH in 1908. Replaced in 1997. This was a 30' span I-beam stringer bridge with a reinforced concrete slab deck. Photo November 19, 1940 (NHHD Bridge Inventory Card).

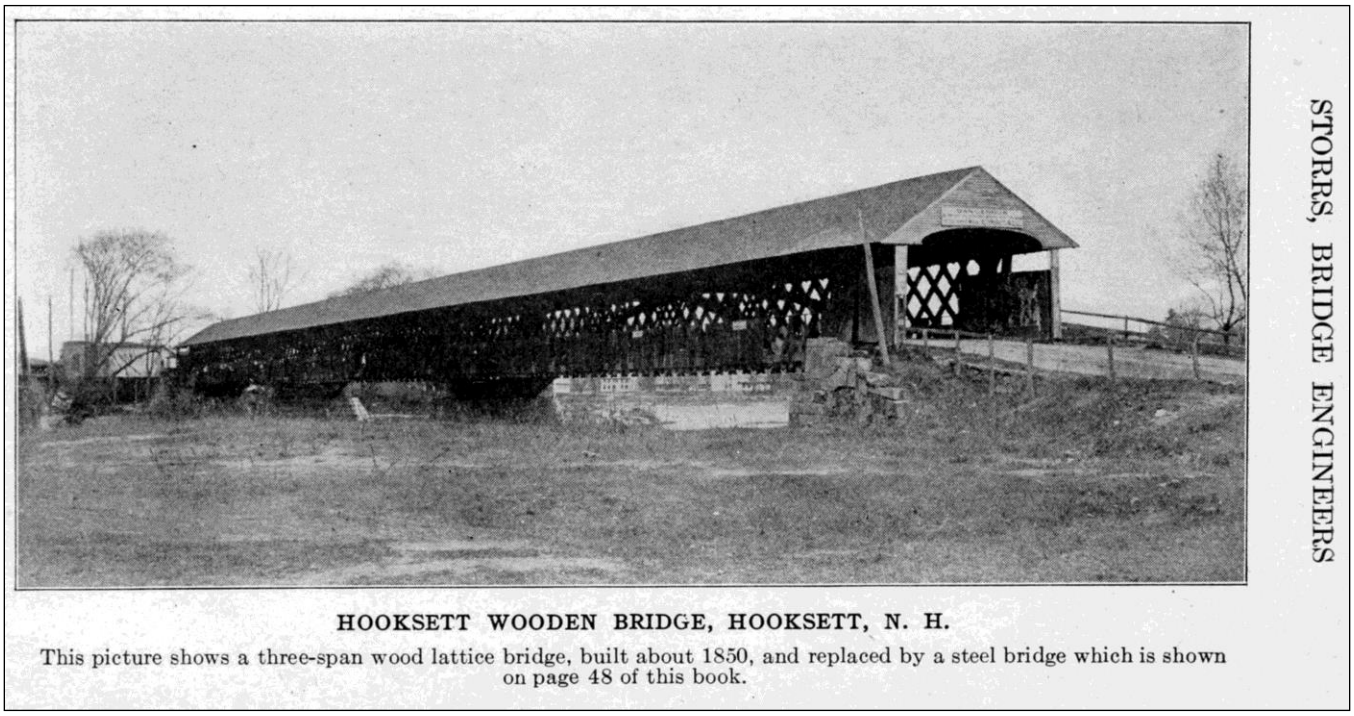


FIGURE 15: Hooksett Covered Bridge, built 1859, as pictured in Storrs & Storrs bridge construction handbook. The bridge is shown prior to its replacement in 1909 (Storrs & Storrs, 1918, p. 46).

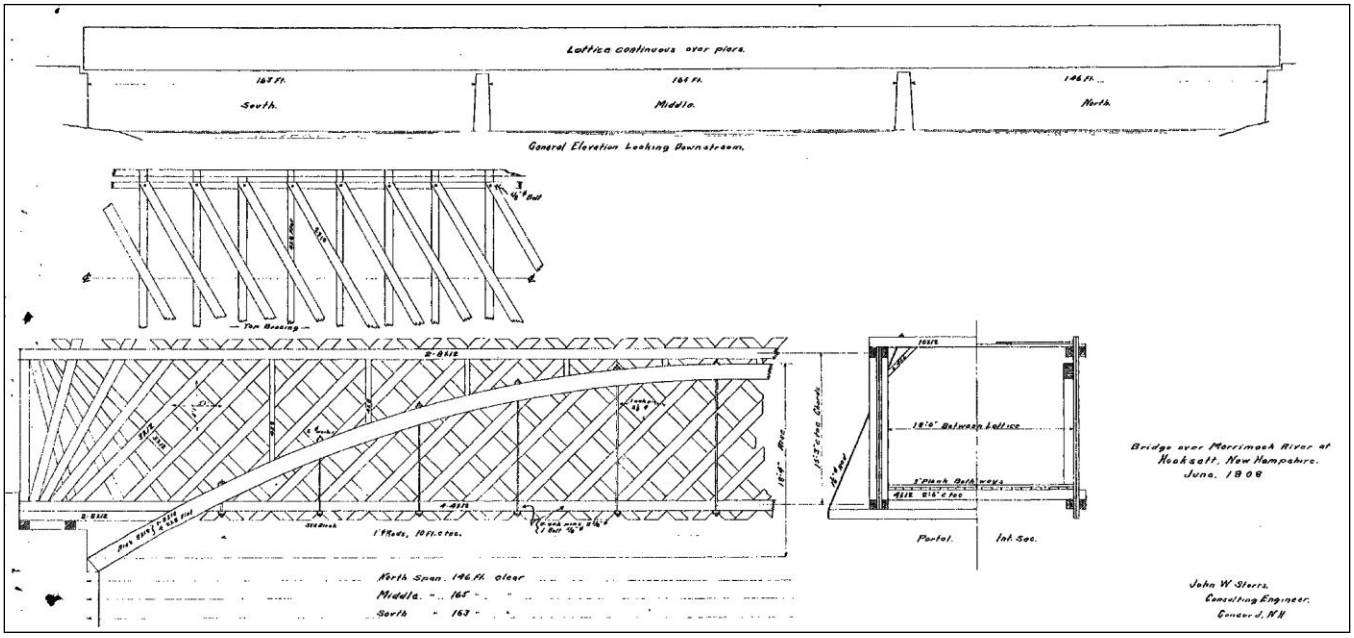


FIGURE 16: Inspection drawing of Hooksett Covered Bridge made by John Storrs for Town of Hooksett, June 1908 (Hooksett Heritage Commission).

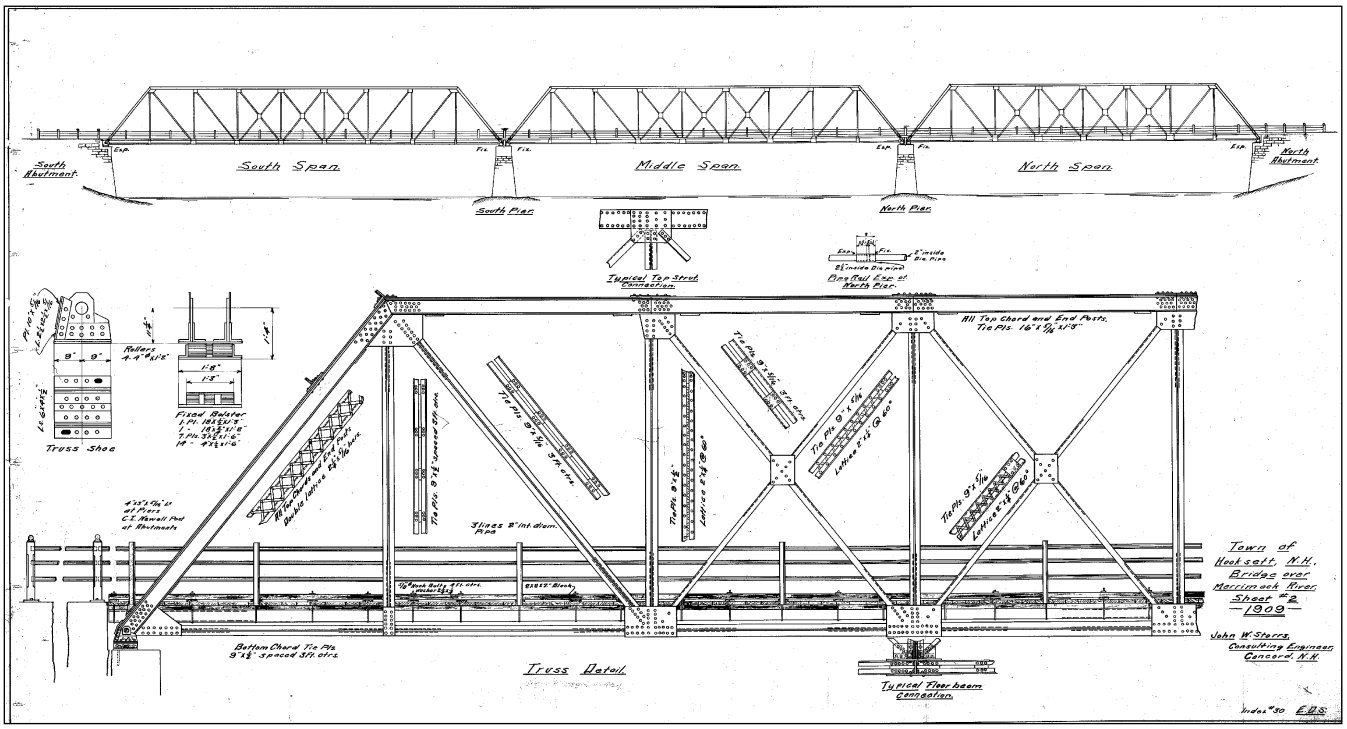


FIGURE 17: Hooksett 083-150, Village Bridge. Following a determination by the Town that it was more prudent to build a new steel truss bridge than repair the old covered bridge, Storrs was hired to prepare the plans above, depicting 3-span Pratt truss built on the existing piers and abutments (NHDOT Plan files).

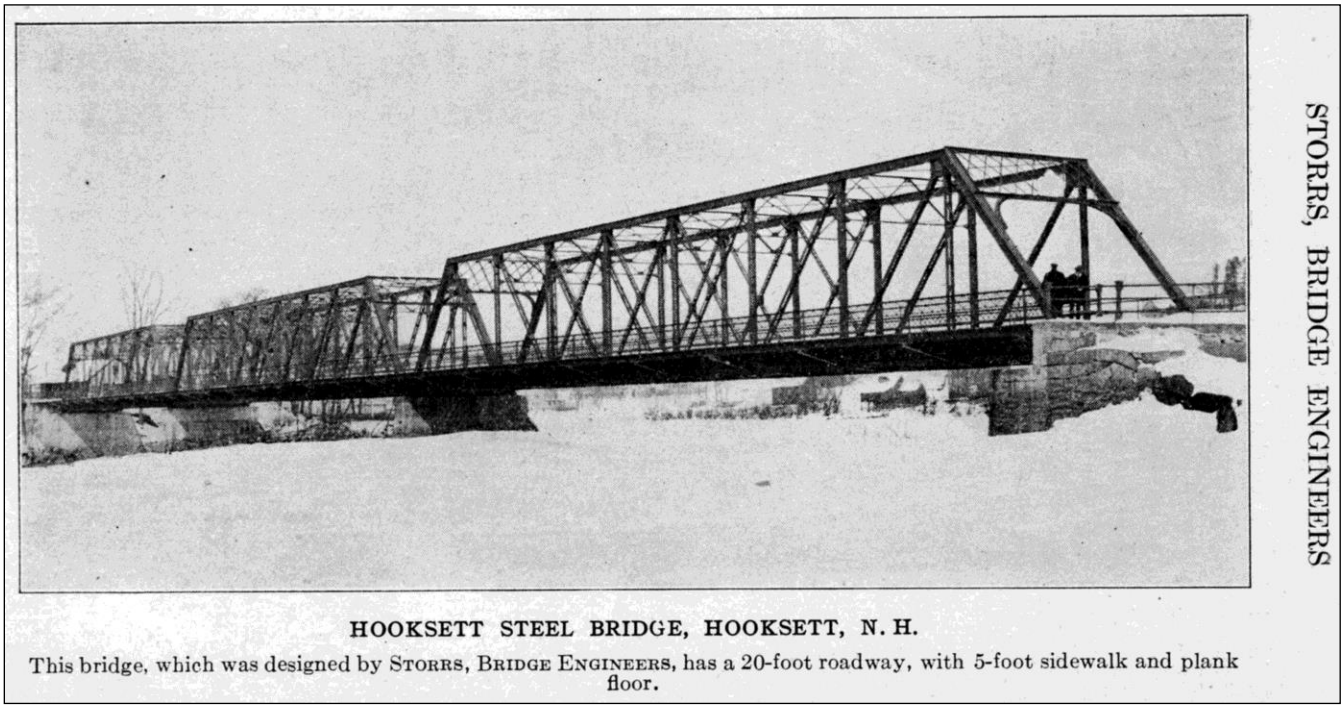


FIGURE 18: Hooksett Village Bridge as pictured in Storrs & Storrs bridge construction handbook, shown sometime between 1909 and 1918 (Storrs & Storrs, 1918, p. 48).

FIGURE 19: Hooksett Village Bridge. Postcard, 1936, showing the south span missing, having been carried away in the Great Flood of 1936. It was dislodged with the impact of a span of the B&MRR Hooksett Falls Bridge that was torn free from its location upstream, seen in bottom of photo. The two remaining spans of the Village Bridge are seen at upper left. (Historic Documentation Co.).

FIGURE 20: Hooksett Village Bridge, shown April 13, 1942. The American Bridge Company built an exact duplicate replacement span to replace the one destroyed in the flood (at left) using the original shop drawings they had retained in their files (NHHD Bridge Inventory Card). Demolished and replaced with pedestrian bridge, 2017.

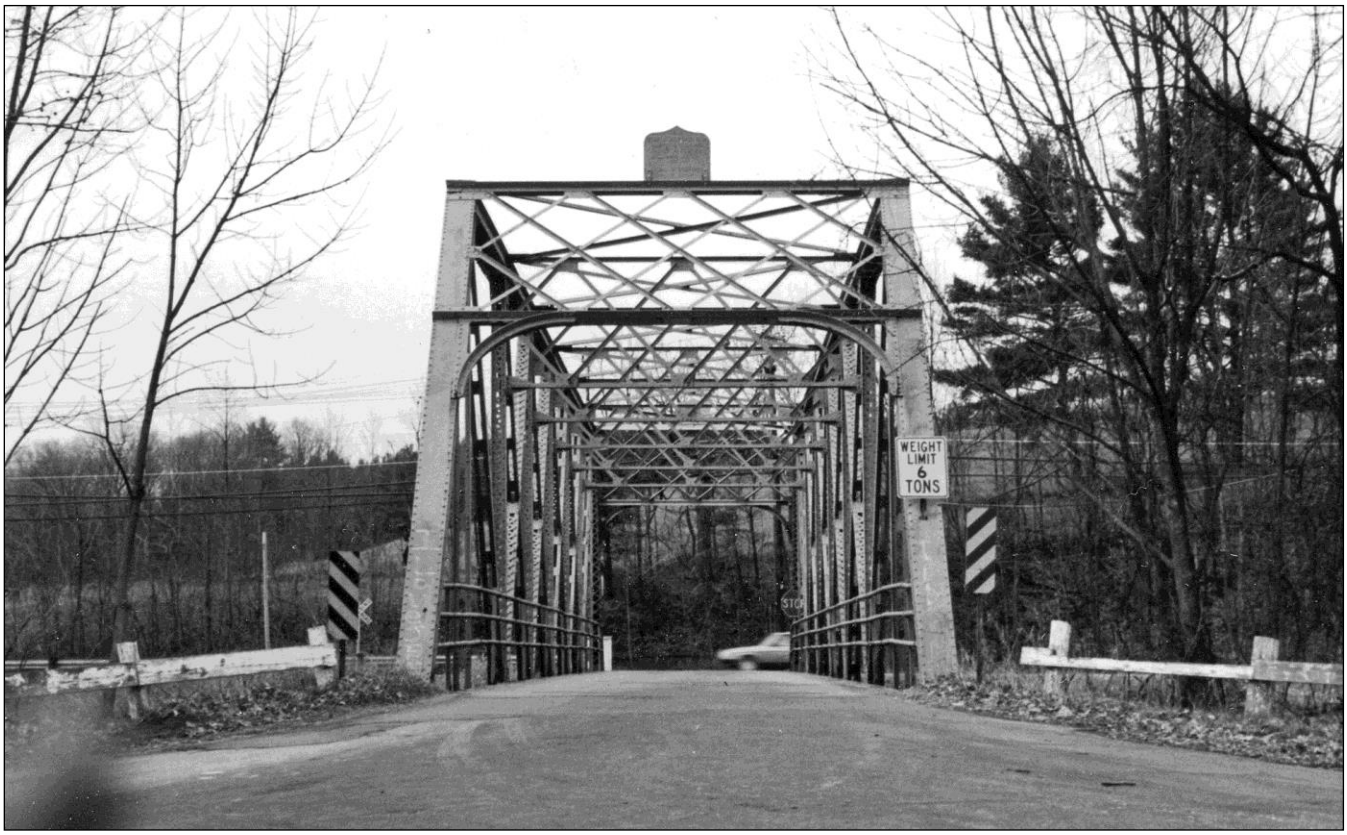


FIGURE 21: Milford 062/138. Jones Crossing Bridge over Souhegan River, a single span Pratt thru truss designed by Storrs in 1908, built by Canton Bridge Co., Canton, Ohio in 1910, demolished in 2015. Clear span between bearings of 150 feet. Photo November 20, 1989 (NHHD Bridge Inventory Card).

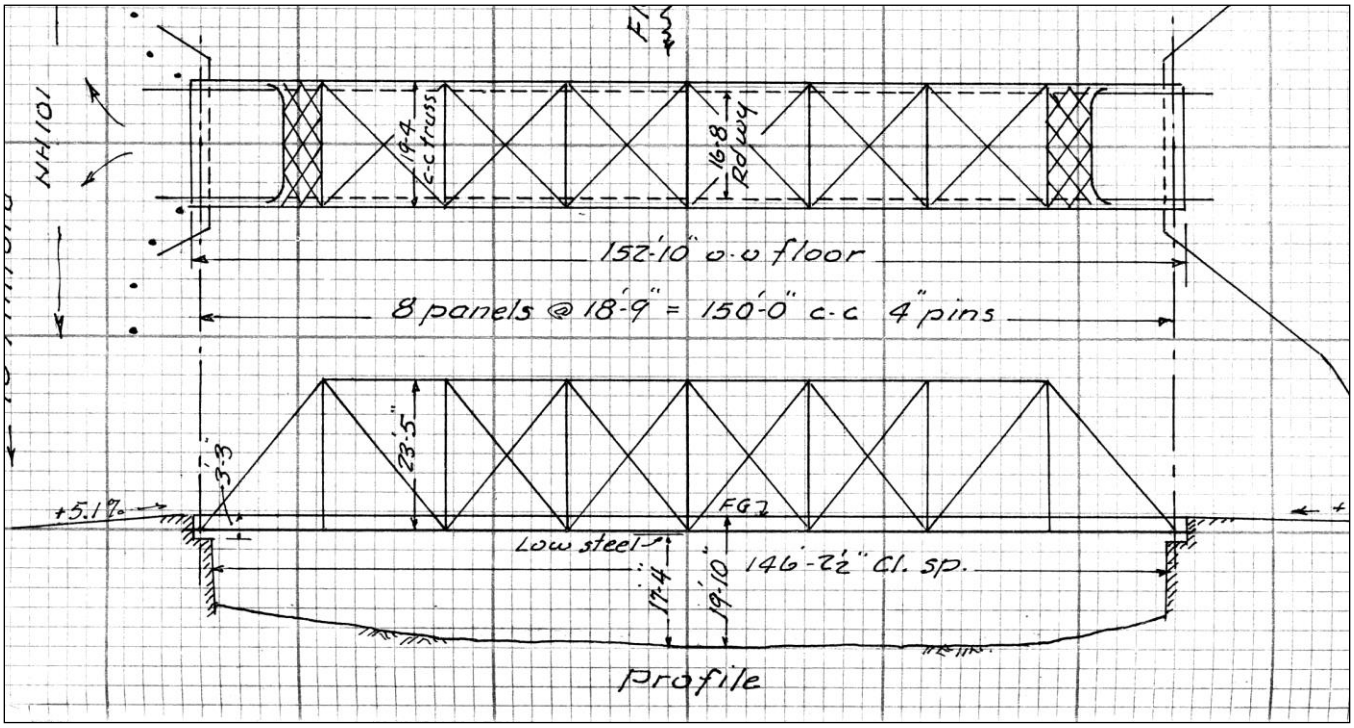


FIGURE 22: Milford 062/138, Jones Crossing Bridge over Souhegan River. Plan & elevation sketch (NHHD Bridge Inventory Card).

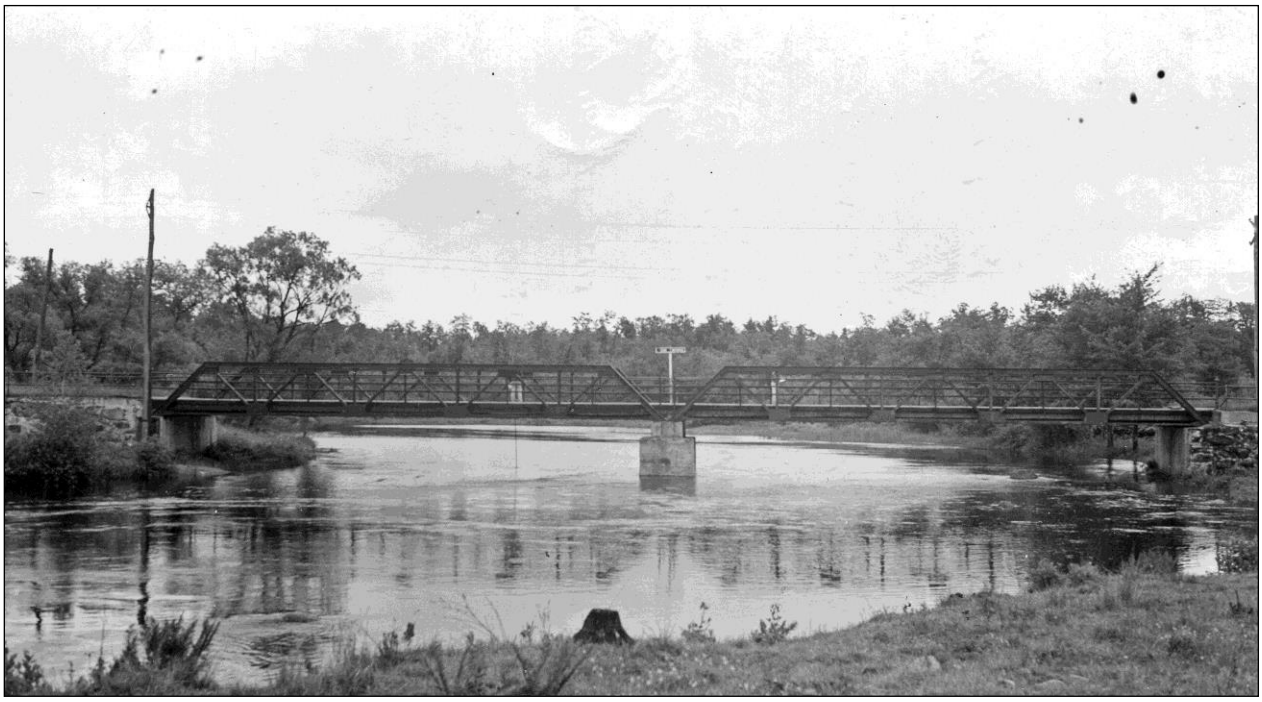
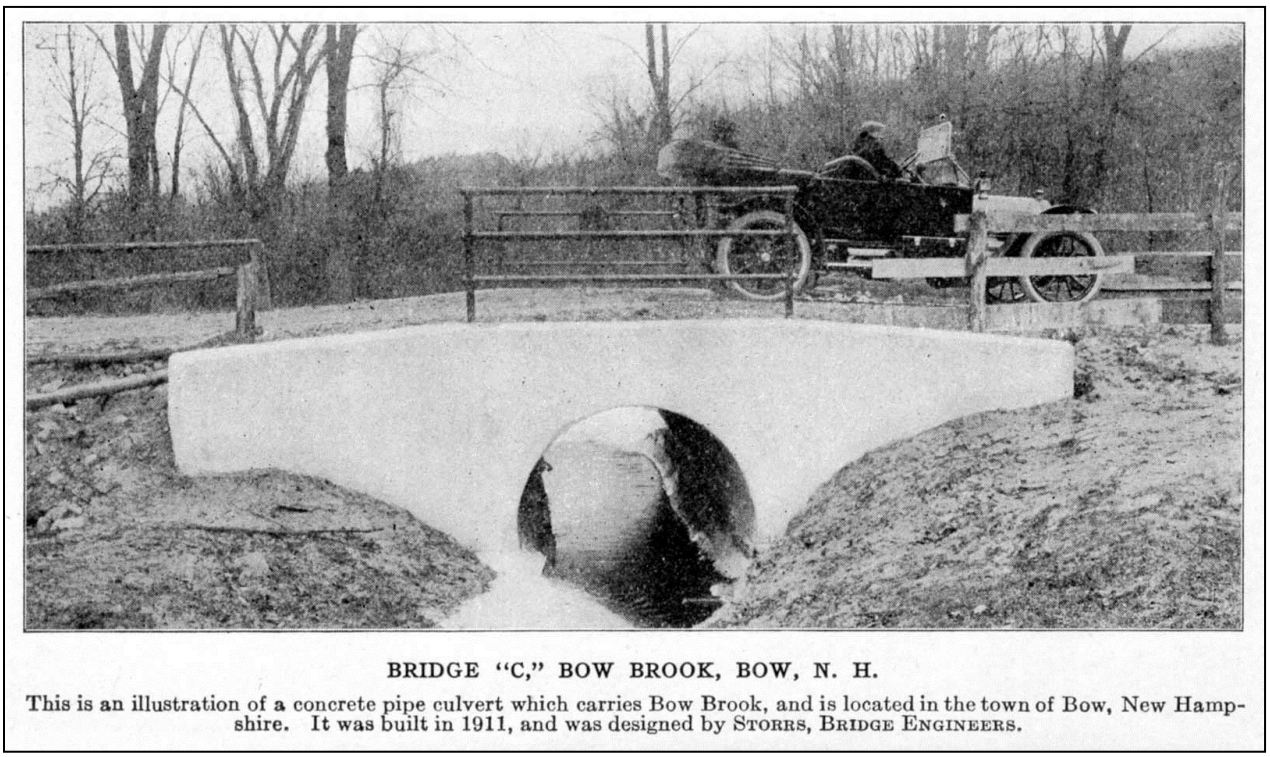


FIGURE 23: Tilton-Northfield 128/158 (now 109/062), a two span Warren pony truss carrying NH 140 over Winnipesaukee River. Designed by John Storrs and built by Canton Bridge Co. in 1910. Replaced in 1968. Each truss measured 67'-7" between bearings. Photo June 17, 1942 (NHHD Bridge Inventory Card).



BRIDGE "C," BOW BROOK, BOW, N. H.

This is an illustration of a concrete pipe culvert which carries Bow Brook, and is located in the town of Bow, New Hampshire. It was built in 1911, and was designed by STORRS, BRIDGE ENGINEERS.

FIGURE 24: Bow, Bridge "C" over Bow Brook. Concrete pipe culvert built 1911. No other information located (Storrs & Storrs, 1918).

FIGURE 25: Bow 135/160 Turkey River Bridge, an 18' span jack arch built 1911 by Boston Bridge Works. Upstream side, pictured in Storrs & Storrs bridge construction handbook (Storrs & Storrs, 1918, p. 11). Demolished and replaced in 1959 with I-89 Ramp.

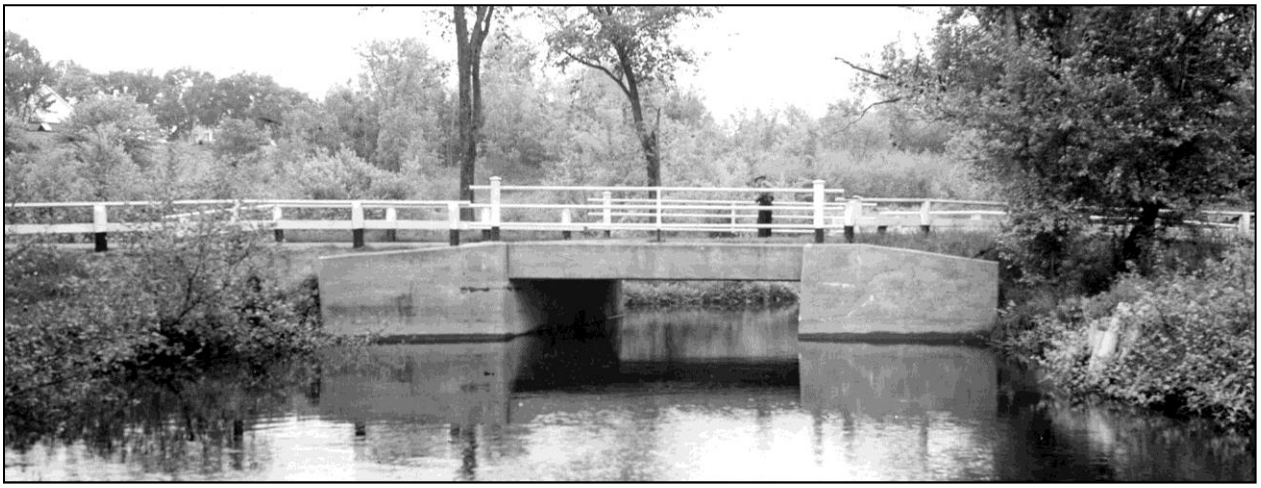


FIGURE 26: Bow 135/160 Turkey River Bridge (1911). Downstream side shown 30 years later when inspected and recorded by New Hampshire Highway Department (NHHD) on May 22, 1942. Note new post and plank approach guardrails and original pipe guardrails painted white (NHHD Bridge Inventory Card).

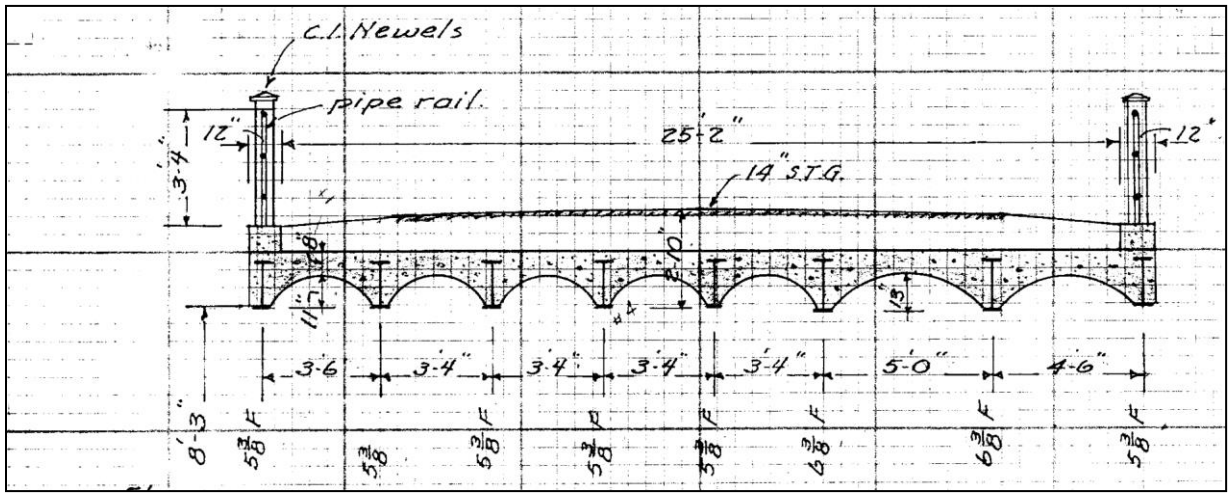


FIGURE 27: Bow 135/160 Turkey River Bridge (1911). Section drawing (NHHD Bridge Inventory Card).

FIGURE 28: Amherst 186/107, "Cricket Corner Bridge" carrying NH 122 over Souhegan River. This single-span riveted high Pratt truss was built in 1912 by United Construction Co. Replaced in 1956. Storrs designed at least five high Pratt truss bridges in 1912. This one had seven panels, 14'-10" long, for a total length between the bearing pins of 103'-10". Photo August 9, 1940 (NHHD Bridge Inventory Card).

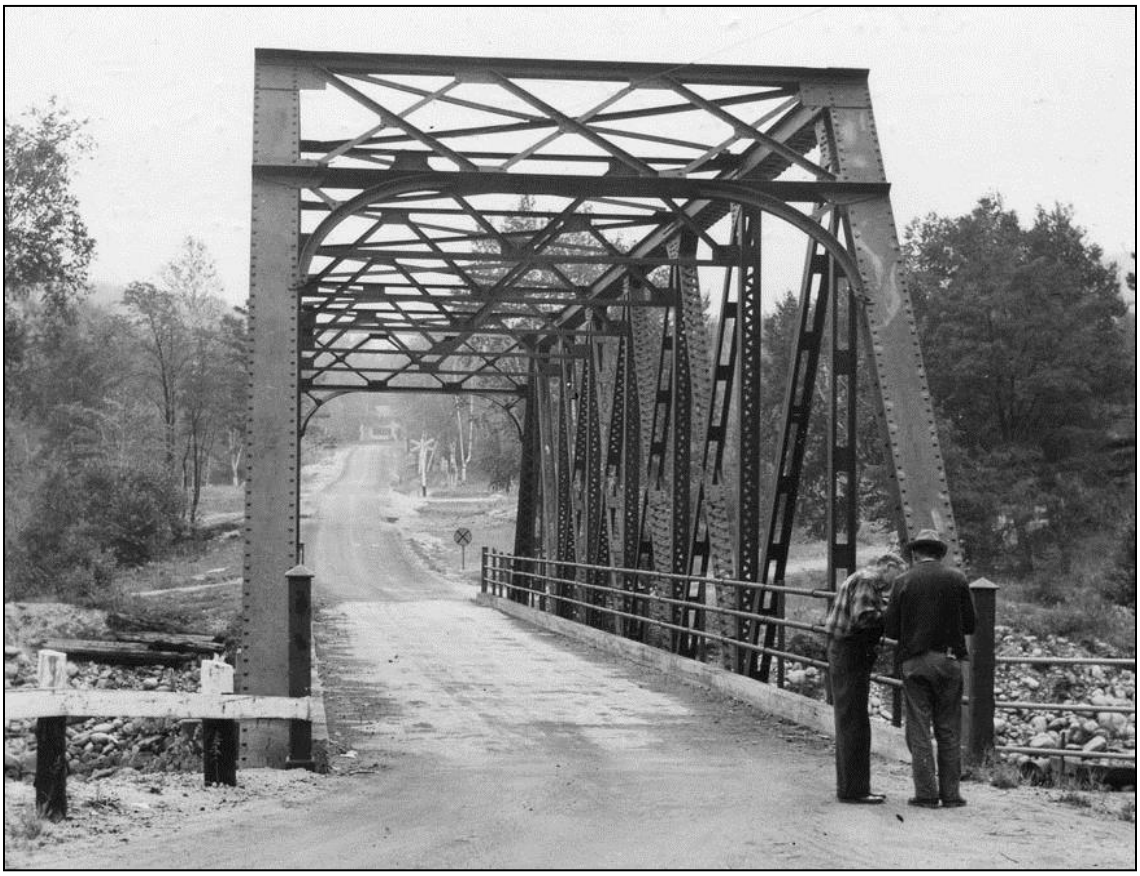


FIGURE 29: Shelburne 075/110, North Road over Androscoggin River. Built 1912, replaced in 1973. This single-span riveted high Pratt truss had eight panels, 17'-4" long, for a total length of 138'-0" between the bearing pins. Note NHHD engineers conducting inspection of bridge, September 23, 1941 (NHHD Bridge Inventory Card).

FIGURE 30: Gorham 092/058, NH 16 over Peabody River. Built 1912 by United Construction Co., Replaced in 1950. One high Pratt truss span and one thru-plate-girder span. The truss had eight panels, 16'-0" long, for a total length between the bearing pins of 128'-0". Photo August 29, 1940 (NHHD Bridge Inventory Card).

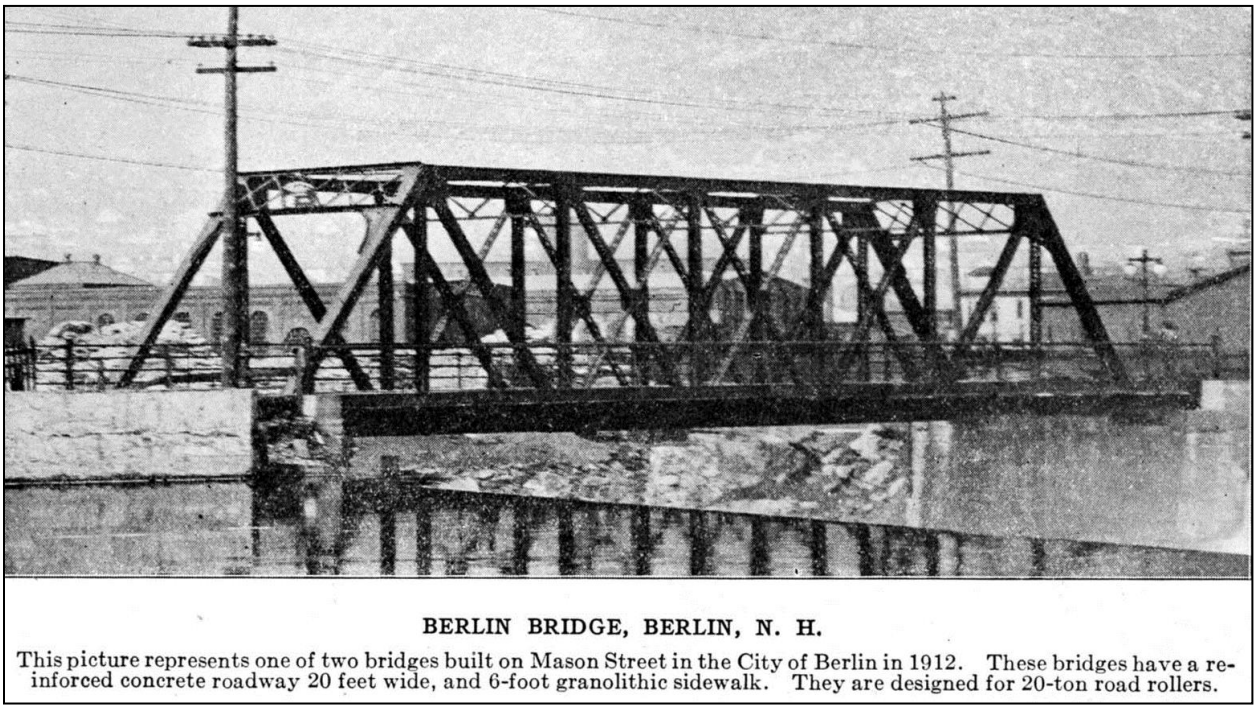
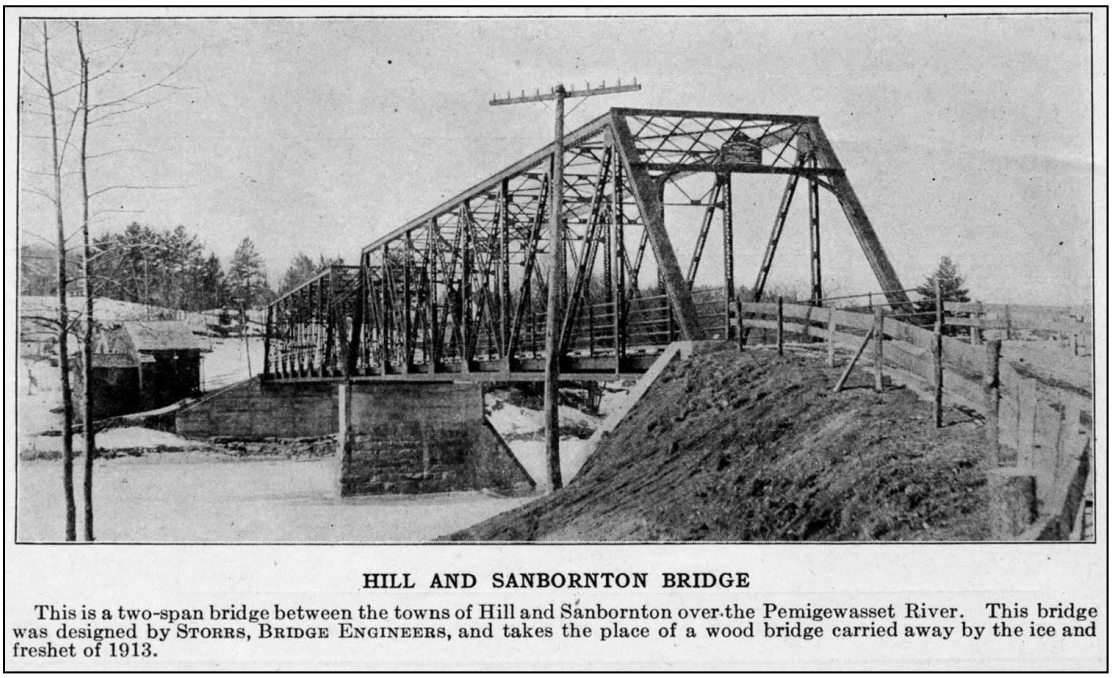


FIGURE 31: Berlin 239/055, Mason Street over Androscoggin River. One of two identical high Pratt truss bridges designed by Storrs for the City of Berlin in 1912. Builder not determined. Replaced in 1967 with I-beam stringer bridges. This truss had seven panels 17'-4" long, for a total length of 121'-4" between the bearing pins (Storrs & Storrs, 1918, p. 54).

FIGURE 32: Haverhill 099/149, Newbury Road Bridge over Connecticut River between Haverhill NH and Newbury VT, built 1913, replaced in 1968. John W. Storrs designed repairs for the rare two-lane, three truss covered bridge built 1834 that predated this structure. A flood in 1913 damaged the bridge and it was taken down and replaced with the two-span Pratt truss steel bridge shown above in 1942. United Construction Company built the bridge on new concrete abutments and center pier; Storrs served the towns as consulting engineer. Photo July 22, 1942 (NHHD Bridge Inventory Card).



HILL AND SANBORNTON BRIDGE

This is a two-span bridge between the towns of Hill and Sanbornton over the Pemigewasset River. This bridge was designed by STORRS, BRIDGE ENGINEERS, and takes the place of a wood bridge carried away by the ice and freshet of 1913.

FIGURE 33: Hill and Sanbornton Bridge. This two-span bridge does not appear in the NHHD bridge inventory and was therefore most likely removed prior to that time, possibly by the 1927 or 1936 floods. (Storrs & Storrs, 1918, p. 15).

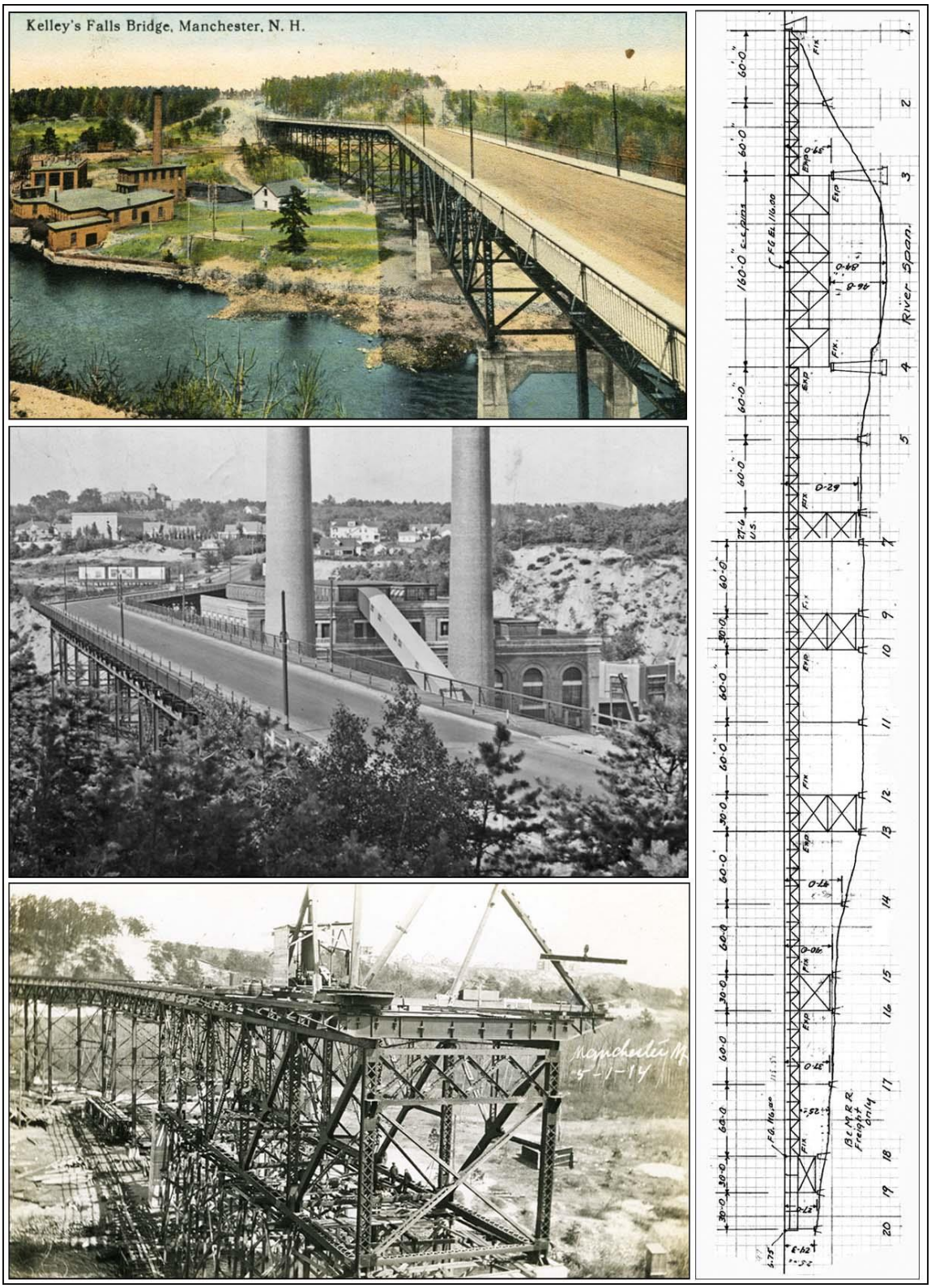


FIGURE 34: Manchester 120/045, Kelly's Falls Bridge. 1914, demolished 1973. With twenty spans, including one 160' and eleven 60' deck truss spans for an overall length of 960.5', it was the largest bridge in the state at the time. Designed by Storrs in 1913, fabricated by American Bridge Co. and erected by United Construction Company in 1914. Top: Postcard, c.1915, view east. Center: View west, 1940. The dog-leg design avoided the power plant and appeased Goffstown residents who resisted the taking of their land for the new highway. Bottom: Construction, May 1914. (Sources: Manchester Historic Assoc.; NHHD Bridge Inventory Card).

FIGURE 35: Concord 163/185 over Soucook River. Known as "Richardson Mill Bridge." This 81-foot Warren pony truss was designed by Storrs for the City of Concord and built by Berlin Construction Co. in 1914. Demolished 1988. Photo April 24, 1942 (NHHD Bridge Inventory Card).

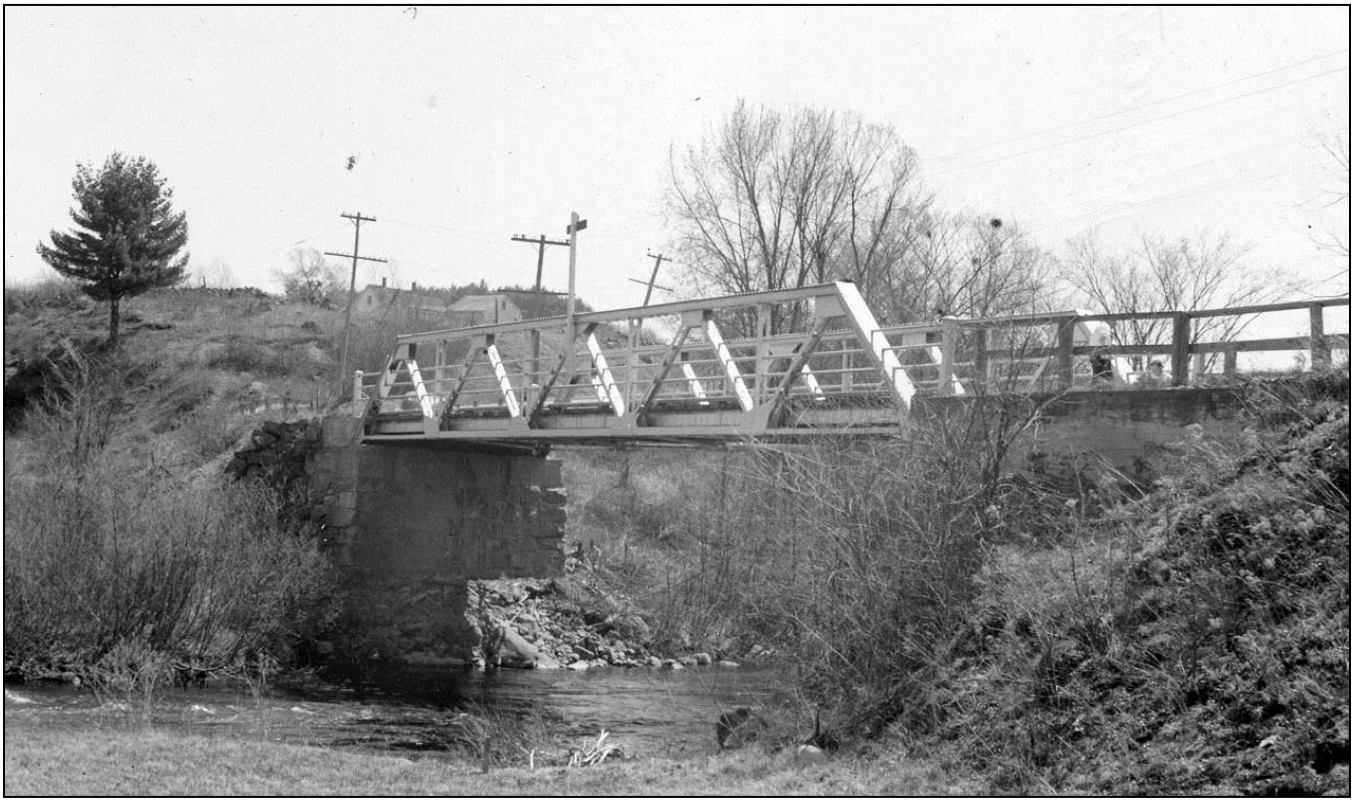
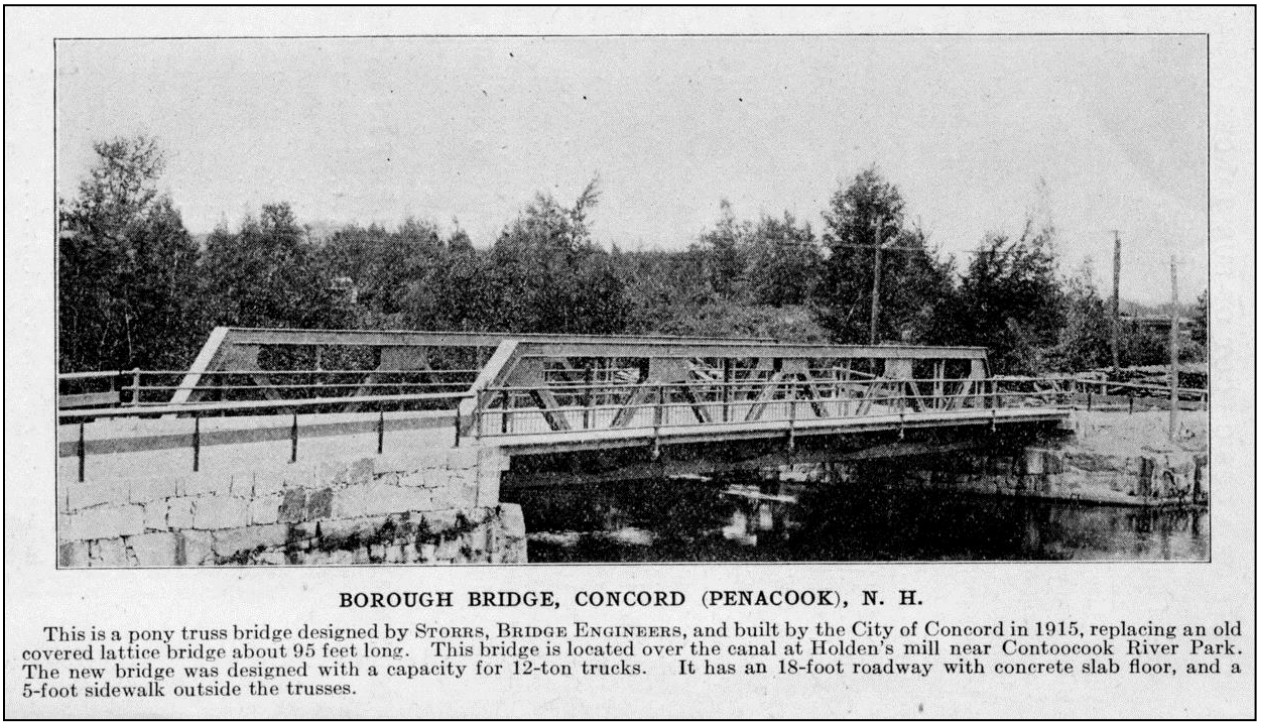


FIGURE 36: Concord 163/185. Richardson Mill Bridge (1914). Photo April 24, 1942 (NHHD Bridge Inventory Card).



BOROUGH BRIDGE, CONCORD (PENACOOK), N. H.

This is a pony truss bridge designed by STORRS, BRIDGE ENGINEERS, and built by the City of Concord in 1915, replacing an old covered lattice bridge about 95 feet long. This bridge is located over the canal at Holden's mill near Contoocook River Park. The new bridge was designed with a capacity for 12-ton trucks. It has an 18-foot roadway with concrete slab floor, and a 5-foot sidewalk outside the trusses.

FIGURE 37: Concord, 045/085, "Borough Bridge." One of the five bridges designed by John Storrs for the City of Concord in 1915. Built by Berlin Construction Company, it was the first of the group to be completed when it opened for traffic on August 16, 1915. It was a single-span Warren pony truss with an overall length of 100 feet. Demolished 1988 (Storrs & Storrs, 1918, p. 66).

PEMBROKE BRIDGE, CONCORD, N. H.

This cut illustrates a steel bridge designed by STORRS, BRIDGE ENGINEERS. It was built by the City of Concord, replacing an old wood lattice bridge which was built since 1891, and which took the place of a bridge that was carried away by the freshet during that year. The original bridge was a toll bridge, one of several toll bridges which crossed the Merrimack River in the city of Concord. The picture represents a view taken at the end of the bridge, which consists of four spans, the two central spans being high trusses, and the end spans pony trusses. The bridge carries a concrete roadway of 18 feet in the clear, and a sidewalk. It is built with a capacity for carrying 12-ton trucks.

FIGURE 38: Concord 186/103. Known as Pembroke Bridge, South End Bridge and Concord Bridge. Second of the 1915 Storrs bridges completed for Concord, it was built by Berlin Construction Co. and opened August 25, 1915. It replaced the wood covered Concord Bridge built in 1891 after the March 27, 1891 freshet. Two high Pratt truss main spans and two low (pony) Warren truss spans for a total length of 470 feet. Replaced in 1998 (Storrs & Storrs, 1918, p. 70).

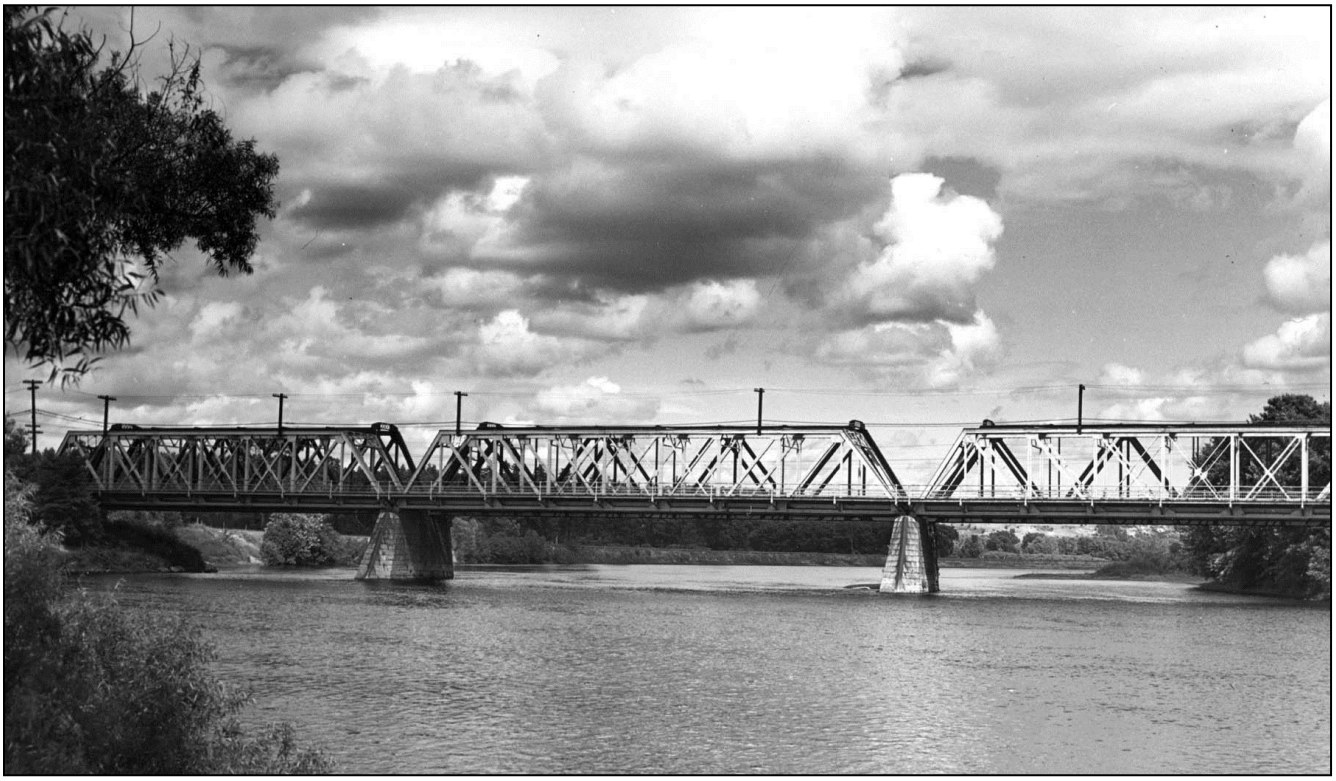


FIGURE 39: Concord 136/115, Federal Bridge. Built by Berlin Construction Co. and opened September 30, 1915. Replaced with I-93 Bridge, 1959. Photo, upstream side, undated. Courtesy of Concord Public Library Photograph Collection.

FIGURE 40: Concord 136/115, Federal Bridge (1915). Photo c. 1940 showing south approach and portal with Boston & Maine Railroad Bridge at right (NHHD Bridge Inventory Card, no date, c. 1940).

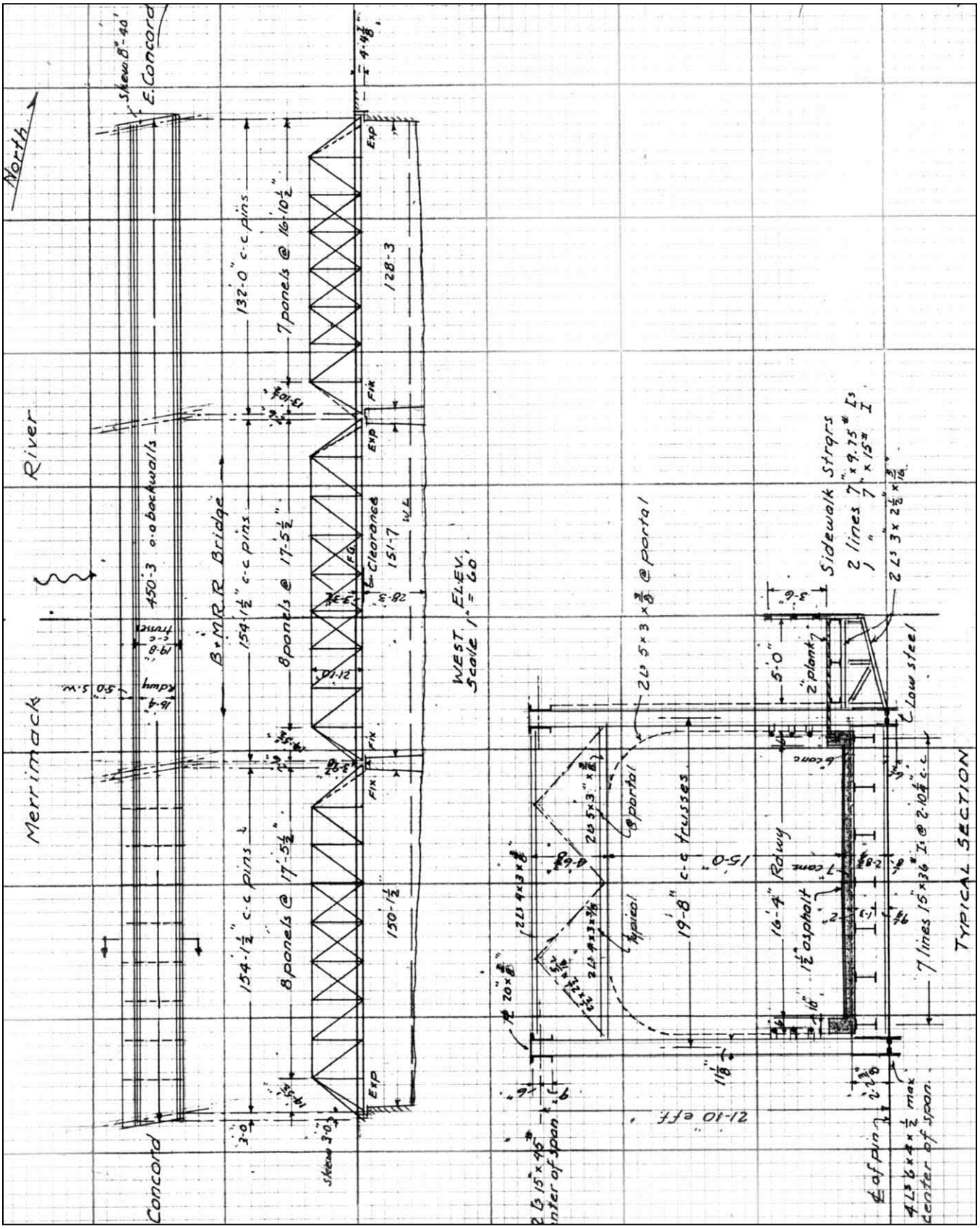


FIGURE 41: Concord 136/115, Federal Bridge (1915). Plan, elevation and section sketch made by NHHD engineer Wendell H. Piper, c.1940 (NHHD Bridge Inventory Card).

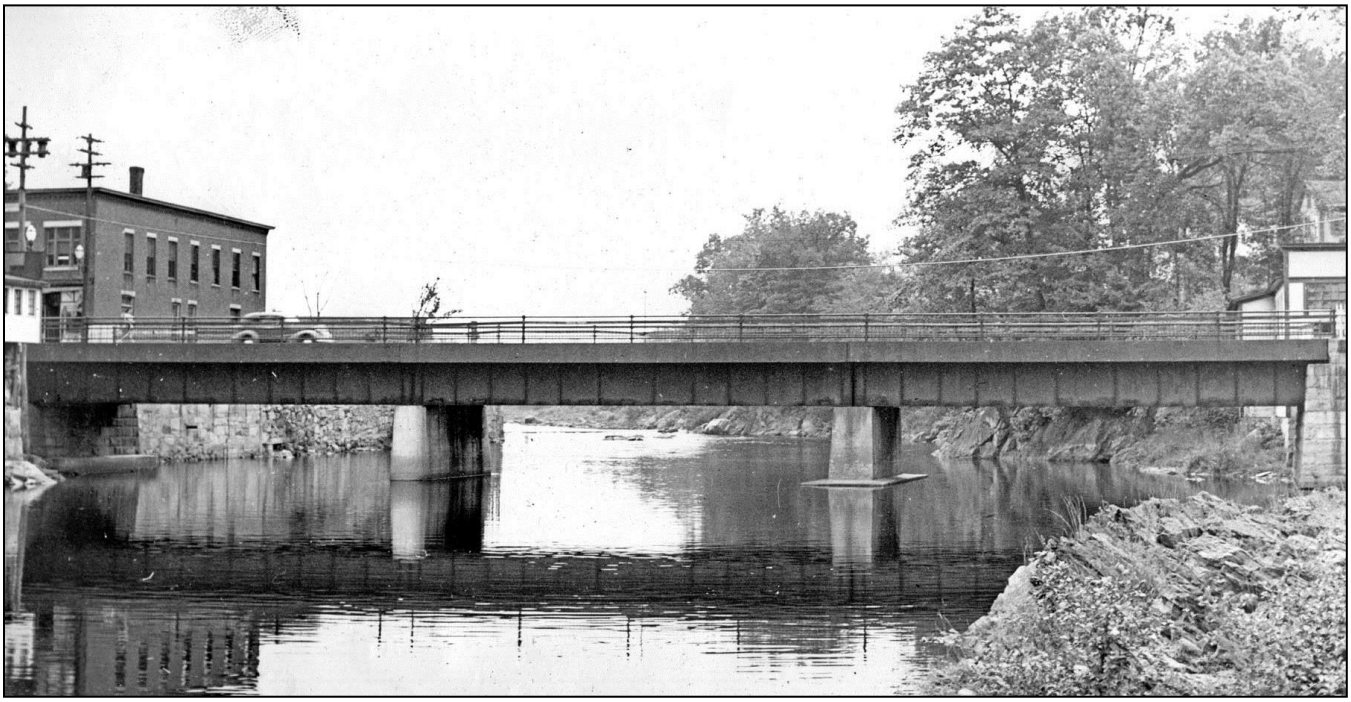


FIGURE 42: Concord 040/090, Main Street Bridge Penacook. Built by Penn Bridge Co. and opened October 27, 1915. Replaced 1984. Photo, downstream side, undated. Courtesy of Concord Public Library Photograph Collection.

FIGURE 43: Concord 040/090, Main Street Bridge Penacook (1915). Photo, north approach, dated June 12, 1940 (NHHD Bridge Inventory Card).

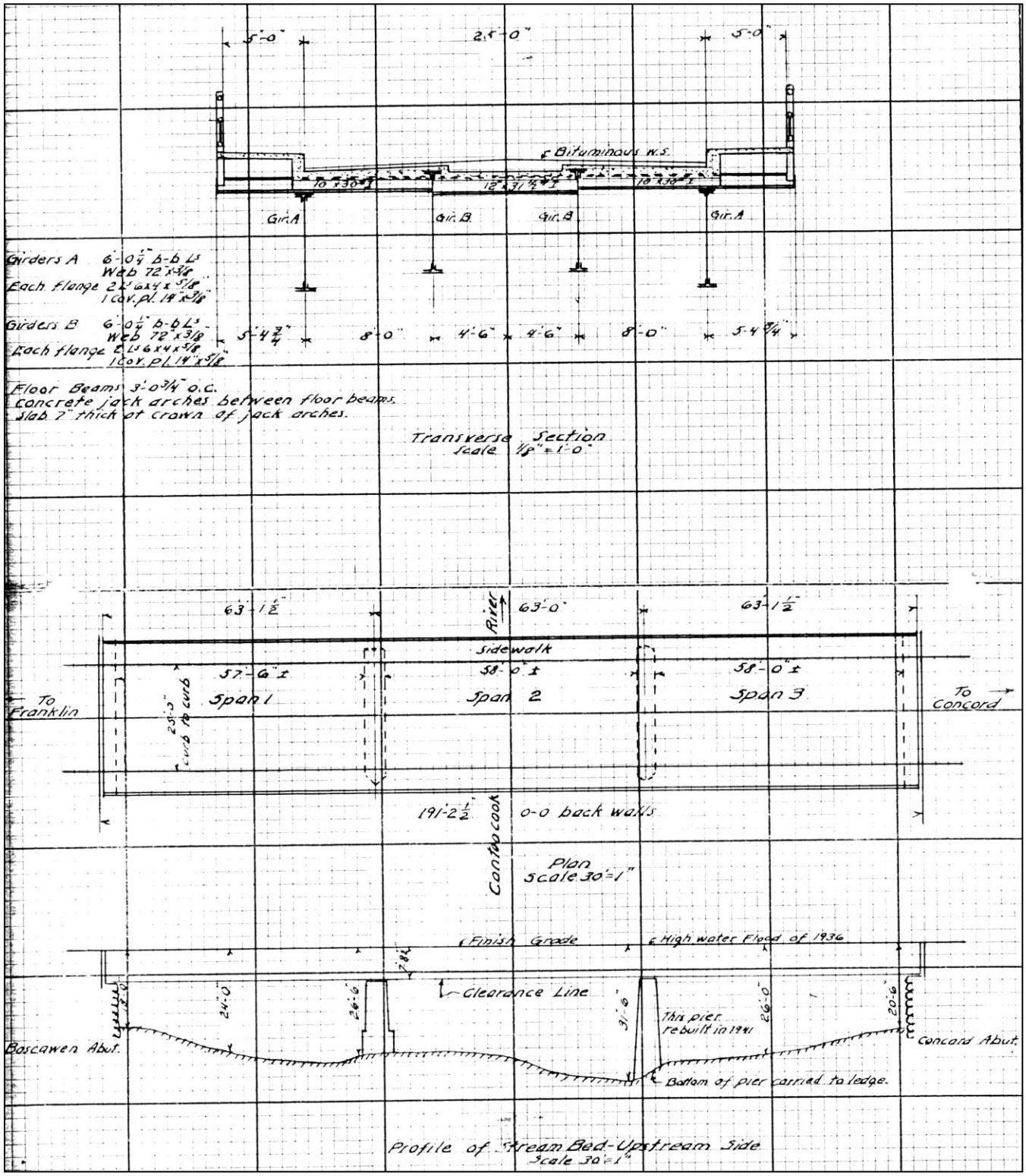


FIGURE 44: Main Street Bridge Penacook, (1915). Plan, elevation and section sketch of the three span deck plate girder bridge made by NHHD engineer Wendell H. Piper, June 12, 1940 (NHHD Bridge Inventory Card).

FIGURE 45: Concord 070/117, Sewall's Falls Bridge, north approach. Two 165' high Pratt truss spans carried Sewall's Falls Road over Merrimack River. Built 1915 by Berlin Construction Company, Berlin, CT. Replaced in 2016. Of the five bridges that Storrs designed for the City of Concord in 1915, this was the last to be completed; it opened on December 23, 1915. Field inspection photo made by NHHD engineer Wendell H. Piper, May 15, 1942 (NHHD Bridge Inventory Card). Also see Cover Photo.

FIGURE 46: Concord 070/117, Sewall's Falls Bridge, downstream elevation. Field inspection photo made by NHHD engineer Wendell H. Piper, May 15, 1942 (NHHD Bridge Inventory Card).

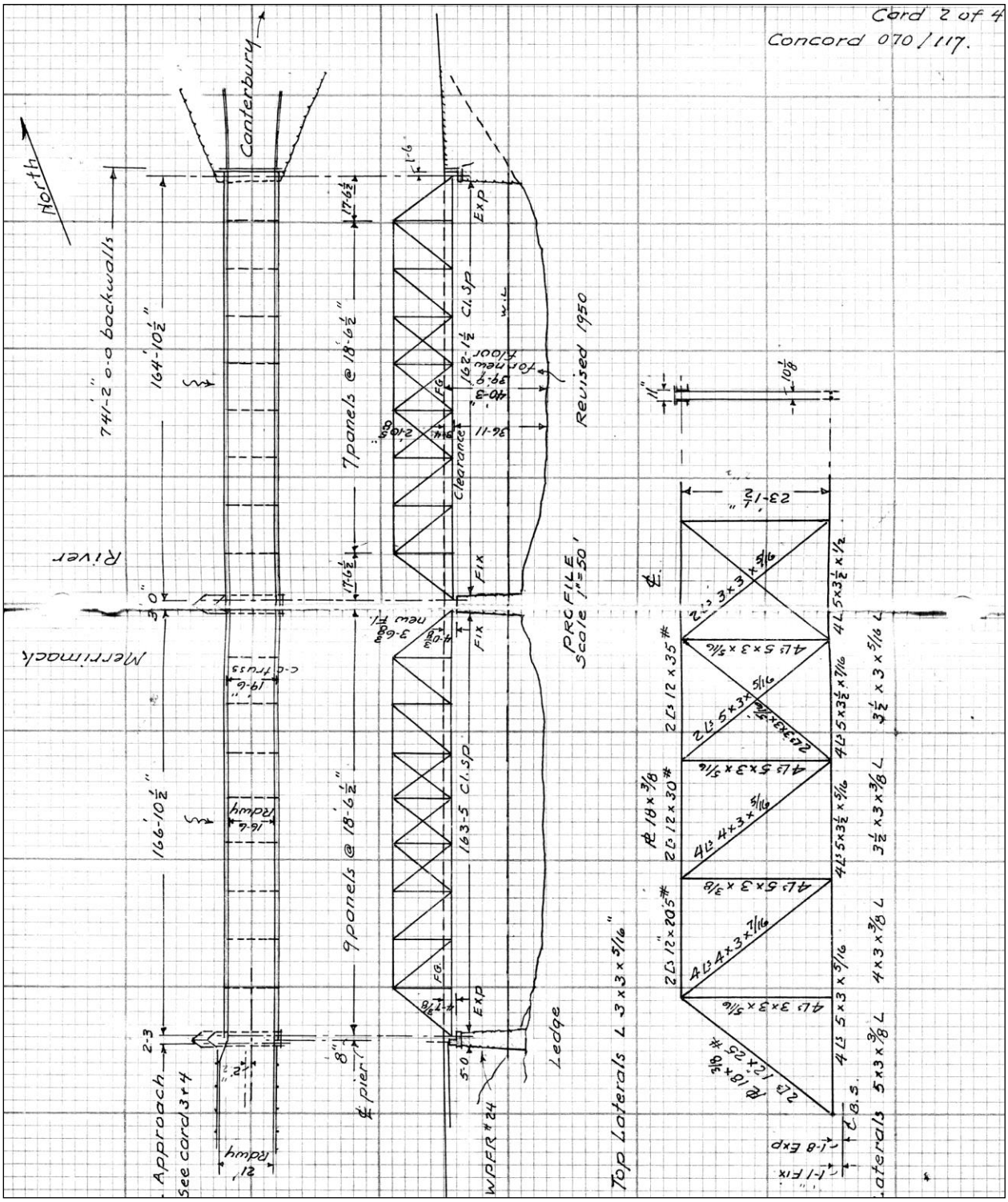


FIGURE 47: Concord 070/117, Sewall's Falls Bridge, plan, elevation and truss members. Field inspection sketches made by NHHD engineer Wendell H. Piper, May 15, 1942 (NHHD Bridge Inventory Card, Concord 070/117).

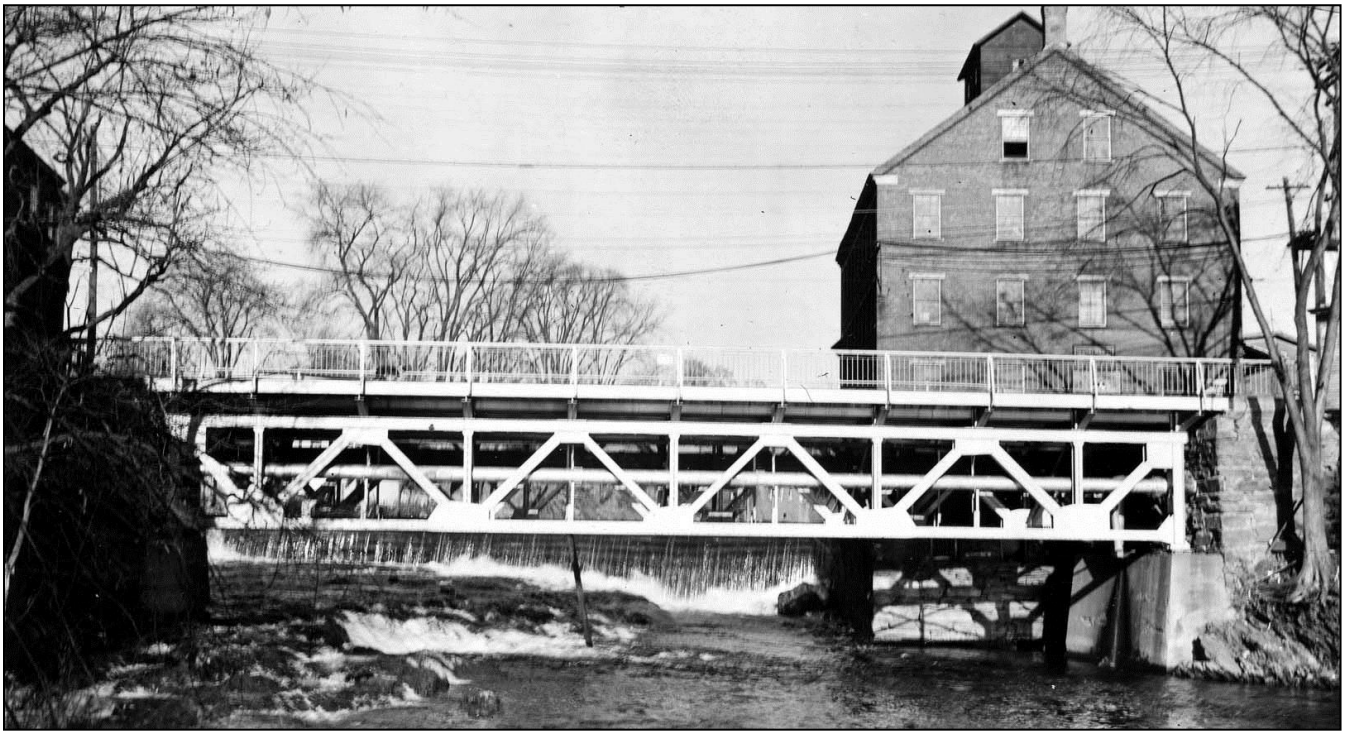


FIGURE 48: Claremont 122/098, "Lower Village Bridge" carrying Main Street over Sugar River. Storrs designed this 100' Warren deck truss for the City in 1915, as well as the Broad Street Bridge (Figures 51-52). Built by Boston Bridge Works at a cost of $7,990. Storrs was paid $399.50 for engineering services. The bridge was documented to HAER standards in 1995 prior to its replacement the next year (see HAER NH-23). Photo November 19, 1940 (NHHD Bridge Inventory Card).

FIGURE 49: Claremont 122/098, "Lower Village Bridge" (1915). Note the Claremont Railway tracks carried on a separate Warren deck truss span erected in 1903 which limited the width of the highway bridge to 20 feet. Photo November 19, 1940 (NHHD Bridge Inventory Card).

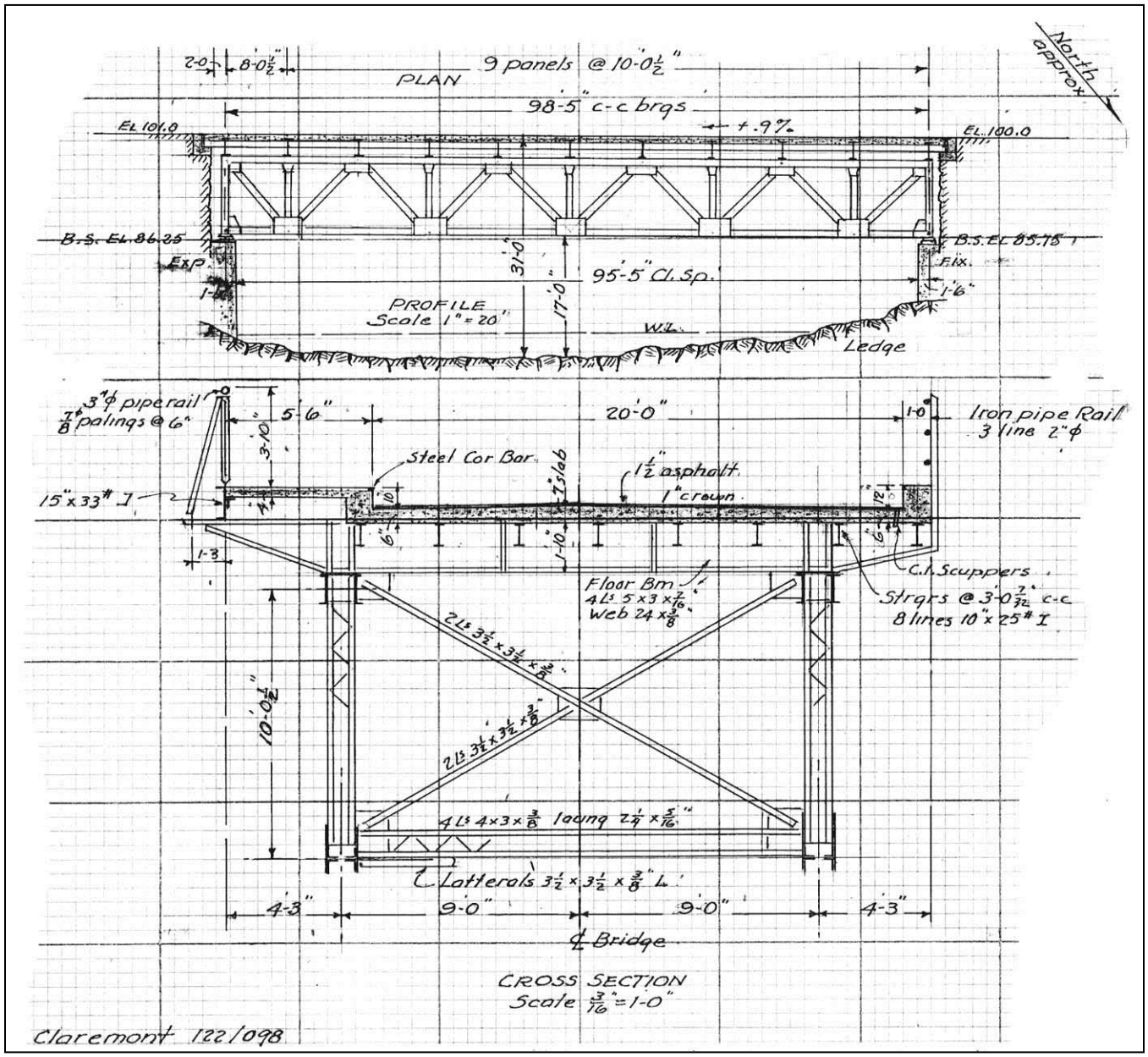


FIGURE 50: Claremont 122/098, "Lower Village Bridge" (1915). Elevation and section drawings made by NHHD engineers following inspection of the bridge on November 19, 1940 (NHHD Bridge Inventory Card).

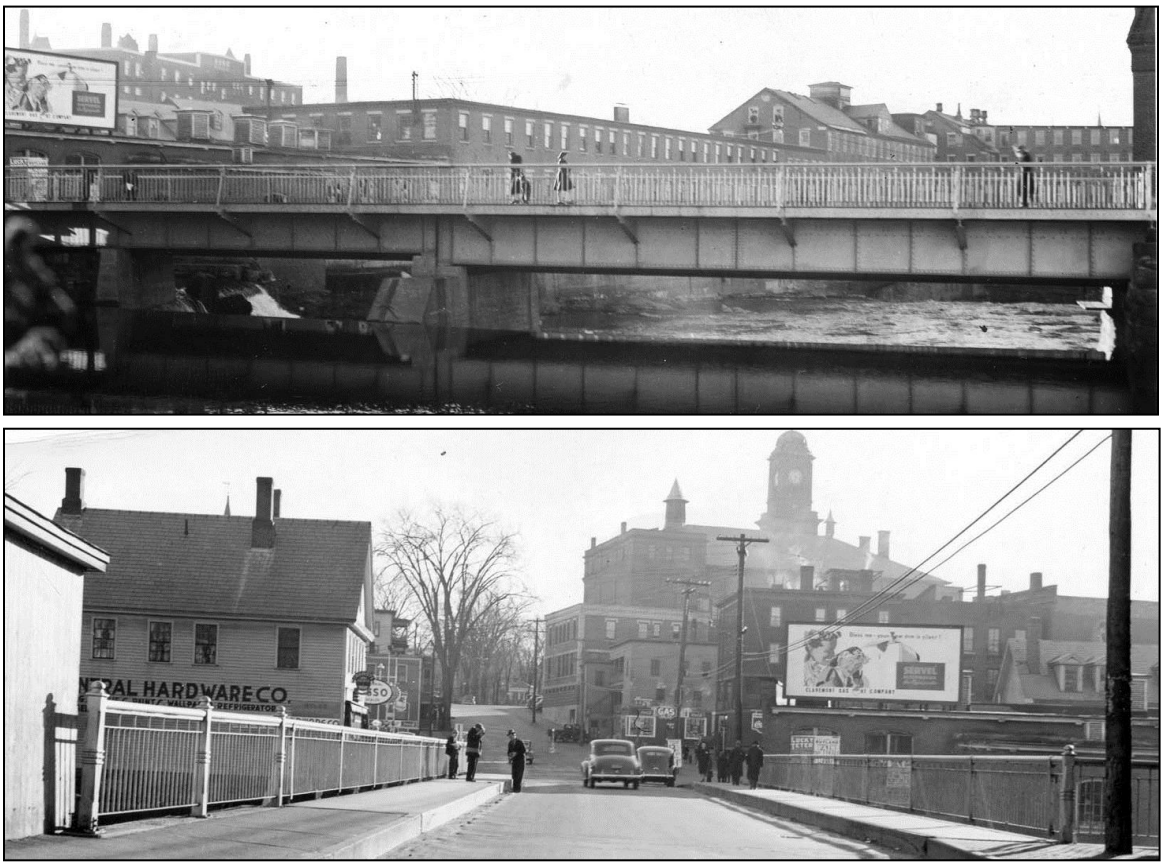


FIGURE 51: Claremont 132-097, Broad St. Bridge over Sugar River. This 2 span deck plate girder bridge was designed by Storrs and built by United Construction Co. in 1915. It had an overall length of 138 feet. Replaced in 1981 with a single-span I-beam bridge. Photos taken during inspection of the bridge by NHHD engineers on November 19, 1940 (NHHD Bridge Inventory Card).

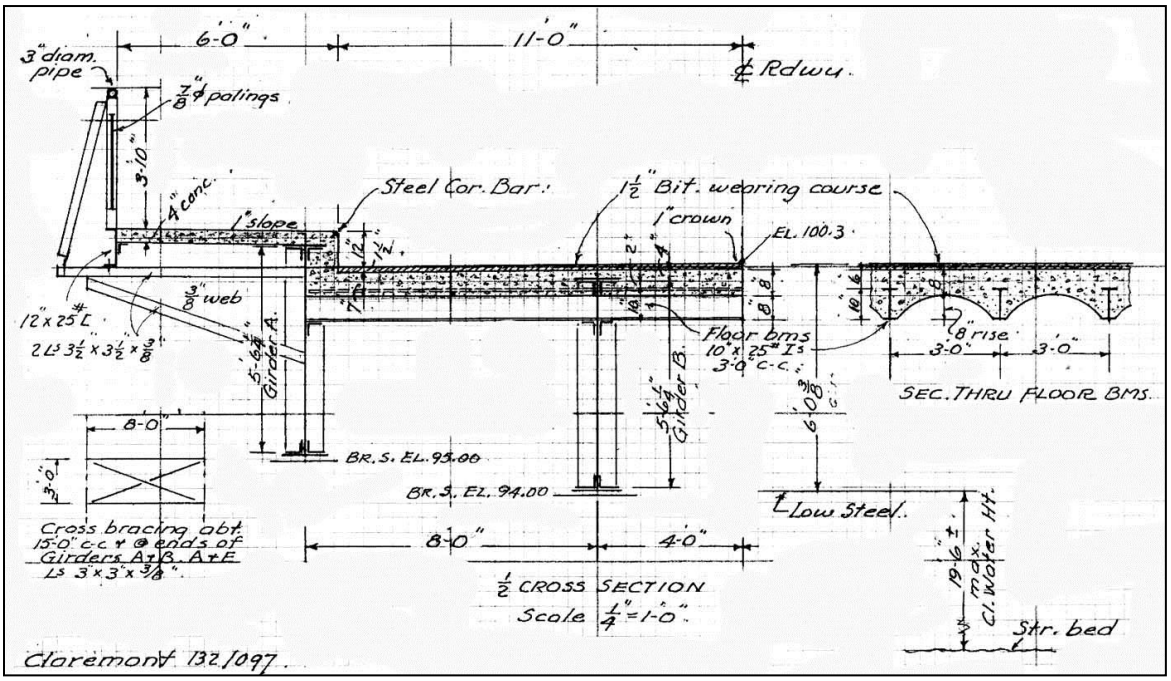
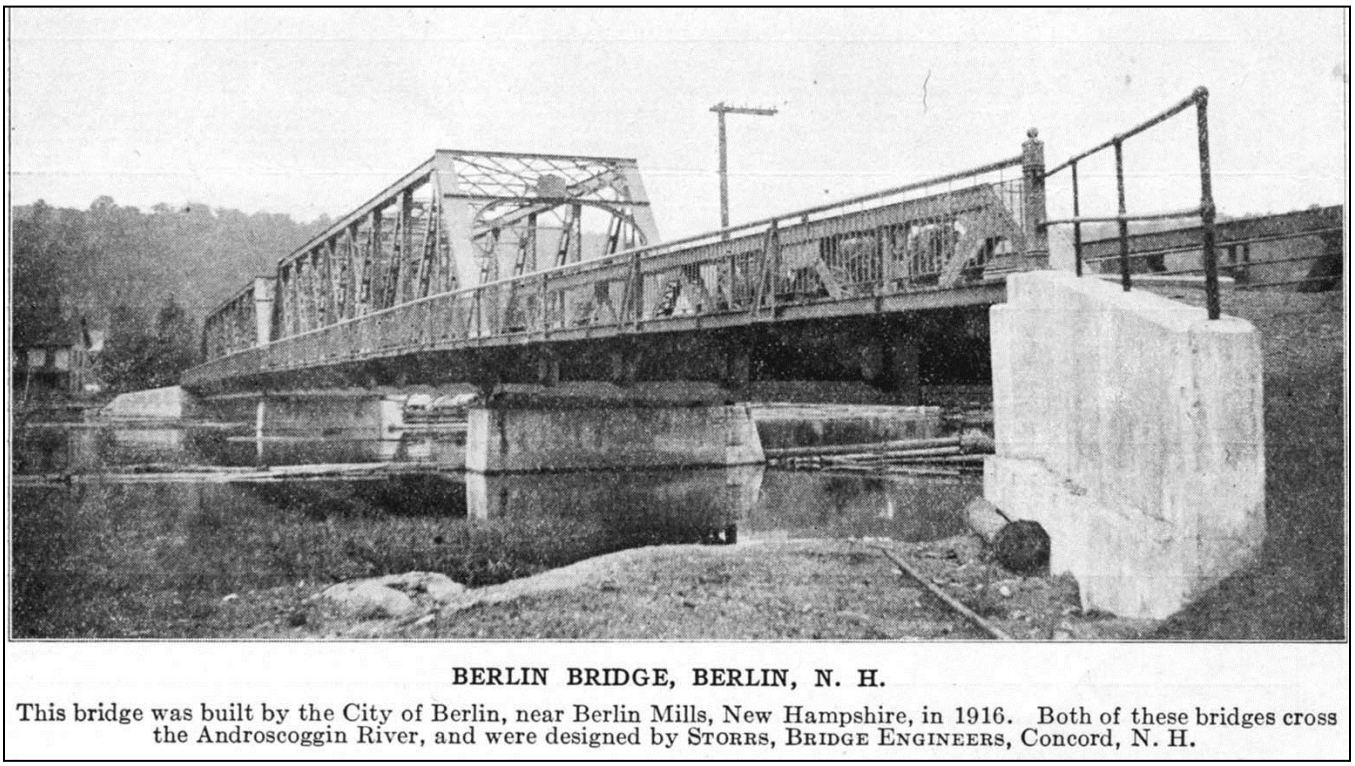


FIGURE 52: Claremont 132-097, Broad St. Bridge (1915). Section drawings by NHHD engineers after inspection on November 19, 1940. Note floor beams were carried on brackets on the plate girder web and the

top flange of the girders were embedded in the concrete deck. Also note the floor beams embedded in an arched concrete slab, known as a transverse jack-arch deck (NHHD Bridge Inventory Card).

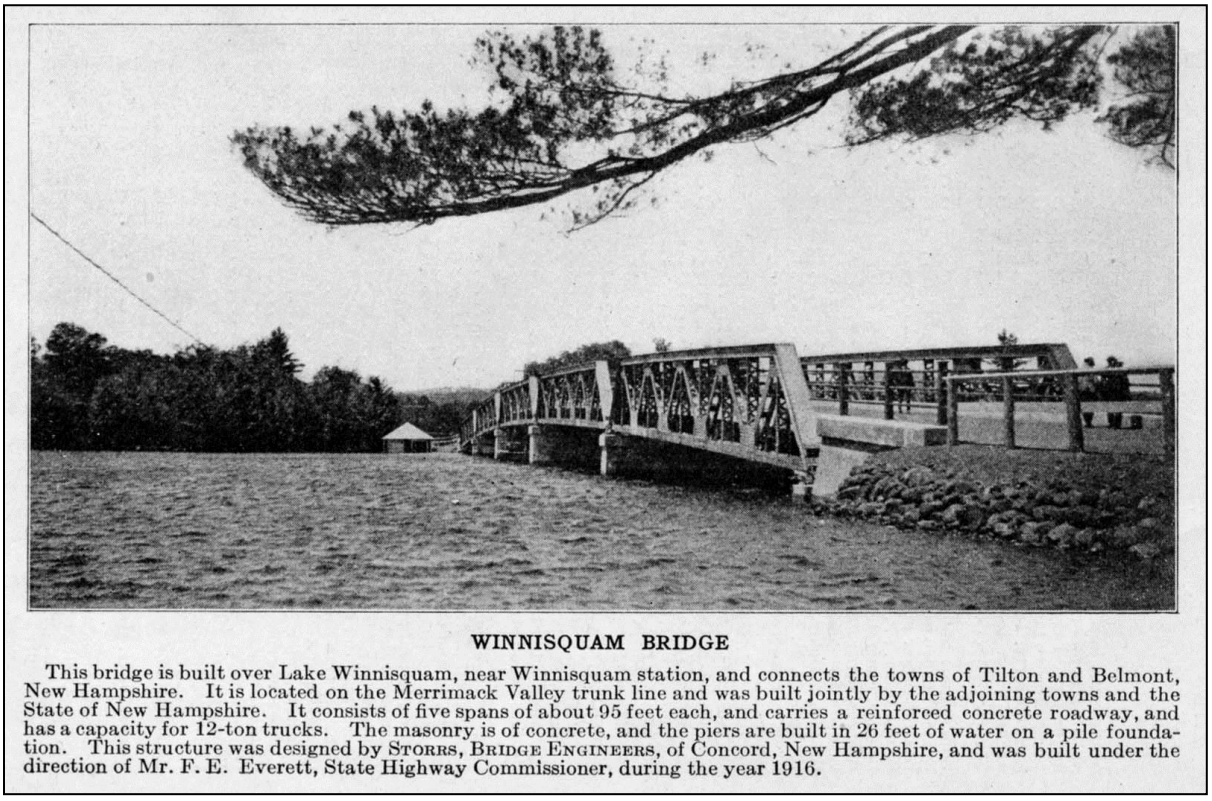


BERLIN BRIDGE, BERLIN, N. H.

This bridge was built by the City of Berlin, near Berlin Mills, New Hampshire, in 1916. Both of these bridges cross the Androscoggin River, and were designed by STORRS, BRIDGE ENGINEERS, Concord, N. H.

FIGURE 53: Berlin 252/077, Bridge Street over Androscoggin River. Two Pratt thru truss spans and one Warren pony truss. Designed by Storrs in 1915, completed by Boston Bridge Works in 1916. Closed and rehabilitated for pedestrian use 1989. Overall length 424 feet. Photo shows east end of bridge (Storrs & Storrs, 1918, p. 55).

FIGURE 54: Berlin 252/077, Bridge Street over Androscoggin River (1916). Rehabilitated and fenced for pedestrian use in 1989. This bridge compares closely with Concord's Sewall's Falls Bridge (070/117) completed a few months earlier. Both have two identical 165' spans based on the same plans. Six bridges by Storrs are of the the same period and design: Hooksett 083/150; Milford 062/138; Berlin 252/077; Concord 070/117; Henniker 097/101 and Henniker 095/100 (trusses built 1915). The truss members of all of these bridges are built entirely of channels and angles having riveted connections. Photo shows west end of bridge (NHDOT High Pratt Truss Management Plan, 2001).



WINNISQUAM BRIDGE

This bridge is built over Lake Winnisquam, near Winnisquam station, and connects the towns of Tilton and Belmont, New Hampshire. It is located on the Merrimack Valley trunk line and was built jointly by the adjoining towns and the State of New Hampshire. It consists of five spans of about 95 feet each, and carries a reinforced concrete roadway, and has a capacity for 12-ton trucks. The masonry is of concrete, and the piers are built in 26 feet of water on a pile foundation. This structure was designed by STORRS, BRIDGE ENGINEERS, of Concord, New Hampshire, and was built under the direction of Mr. F. E. Everett, State Highway Commissioner, during the year 1916.

FIGURE 55: Belmont-Tilton 072/148, a.k.a. Winnisquam Bridge or Mosquito Bridge. Designed by Storrs for the NHHD in 1915. Built by United Construction Co. 1916. Replaced 1973 (Storrs & Storrs, 1918, p. 71).

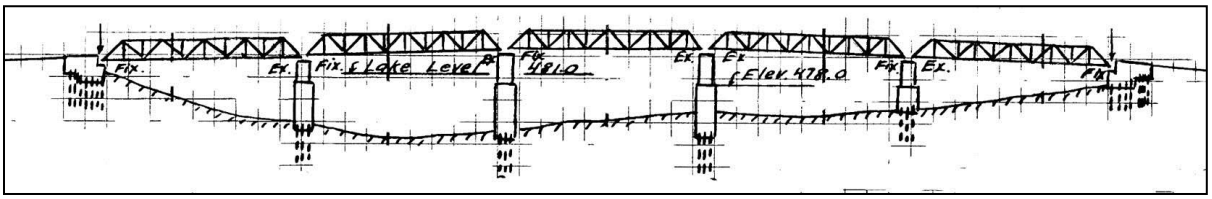


FIGURE 56: Belmont-Tilton 072/148, Winnisquam Bridge (1916). Field inspection elevation sketch made June 13, 1940 (NHHD Bridge Inventory Card)

FIGURE 57: Belmont-Tilton 072/148, Winnisquam Bridge. Downstream side. Field inspection photo made June 13, 1940 (NHHD Bridge Inventory Card)

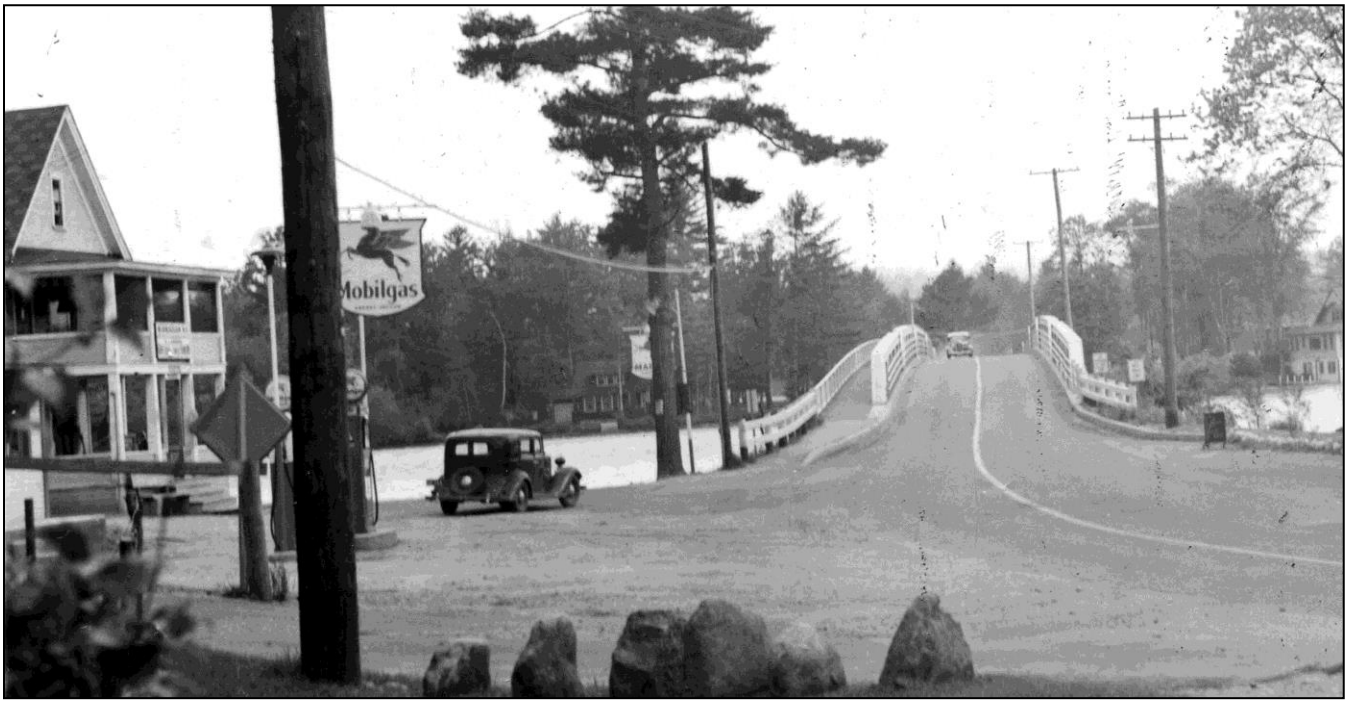


FIGURE 58: Belmont-Tilton 072/148, Winnisquam Bridge (1916). North approach. Field inspection photo made June 13, 1940 (NHHD Bridge Inventory Card)

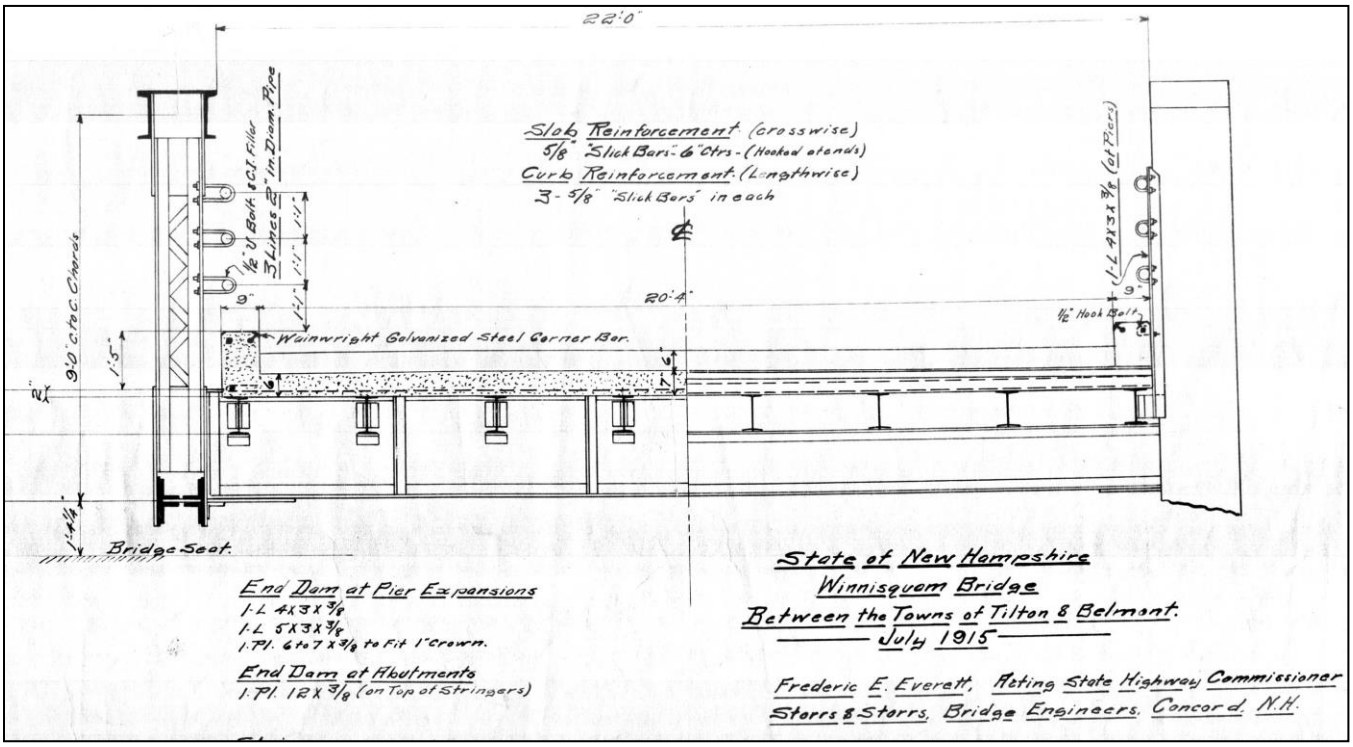
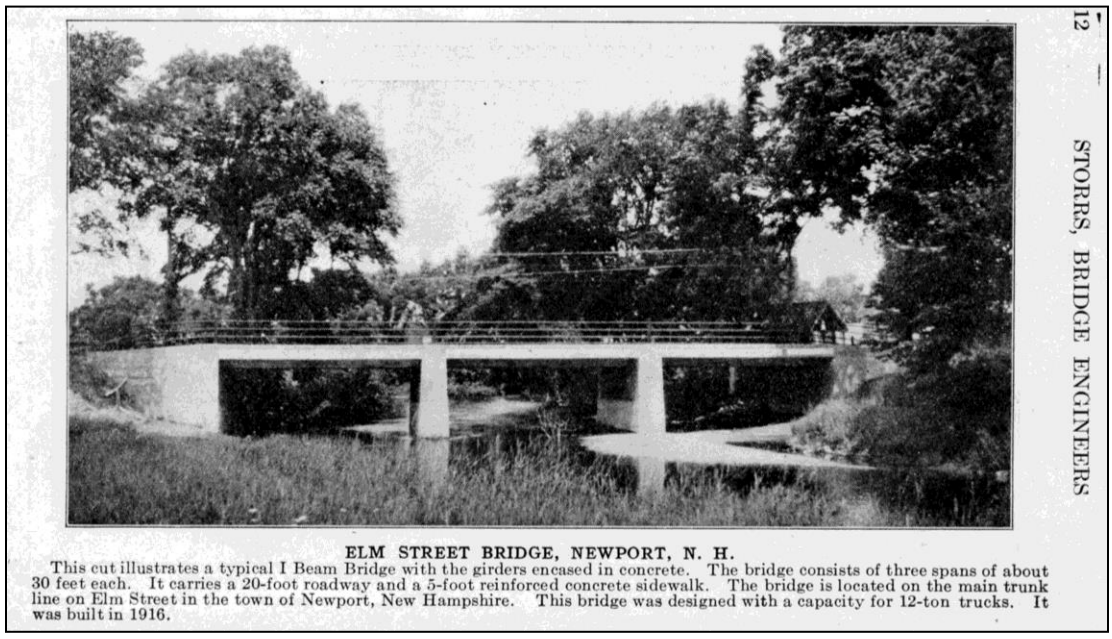


FIGURE 59: Belmont-Tilton 072/148, Winnisquam Bridge (1916). Original section drawing by Storrs & Storrs, Bridge Engineers, July 1915 (NHDOT Plan files).



12 STORRS, BRIDGE ENGINEERS

ELM STREET BRIDGE, NEWPORT, N. H.

This cut illustrates a typical I Beam Bridge with the girders encased in concrete. The bridge consists of three spans of about 30 feet each. It carries a 20-foot roadway and a 5-foot reinforced concrete sidewalk. The bridge is located on the main trunk line on Elm Street in the town of Newport, New Hampshire. This bridge was designed with a capacity for 12-ton trucks. It was built in 1916.

FIGURE 60: Newport 137/100, Elm Street Bridge (1916). An early consulting job for Storrs was repairing the covered bridge at this location for the Town of Newport in 1906. Ten years later he was called back to replace the covered bridge with the 3-span concrete bridge above (Storrs & Storrs, 1918, p. 12).

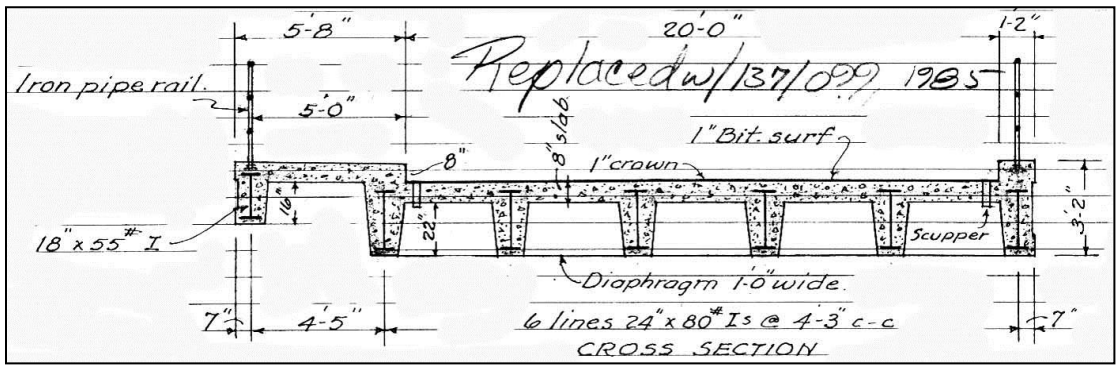


FIGURE 61: Elm Street Bridge, Newport (1916). Section sketch showing concrete encased I-beams, an inefficient and short lived bridge type that was incorrectly identified in bridge records as a concrete T-beam bridge (NHHD Bridge Inventory Card).

FIGURE 62: Elm Street Bridge, Newport (1916). Underside, showing concrete encased I-beams. Bridge replaced in 1985. Photo November 19, 1940 (NHHD Bridge Inventory Card).

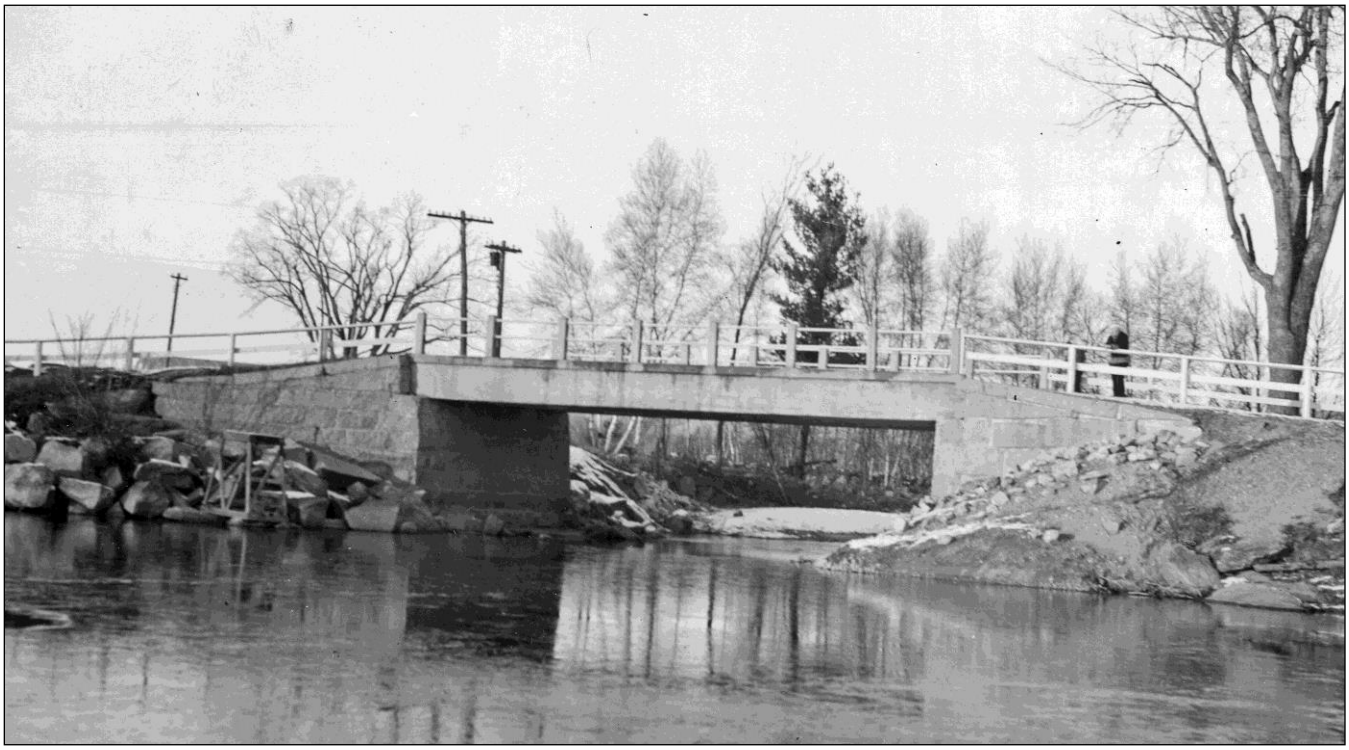


FIGURE 63: Conway 062/042, River Road over Lovejoy Brook. This concrete T-beam bridge was built 1917 with a clear span of 41'-6". Replaced in 1961. Contractor undetermined. Photo November 25, 1941 (NHHD Bridge Inventory Card).

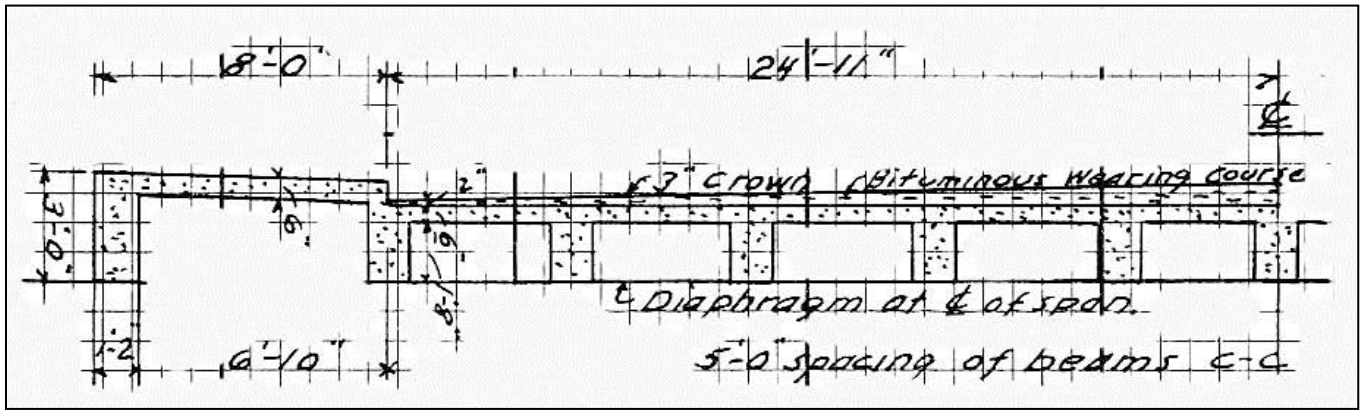
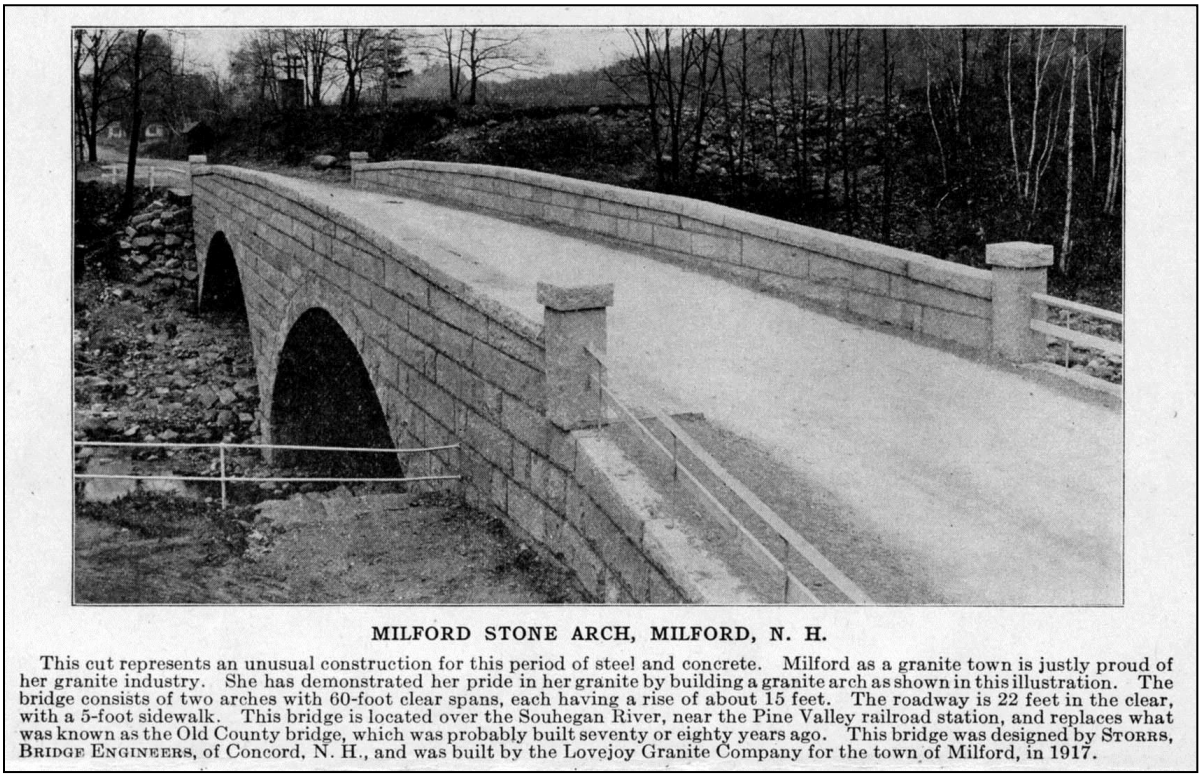


FIGURE 64: Concord 041/090, New Hampshire Spinning Mill Bridge. This bridge spanned the power canal at the mill. Designed by Storrs and built by City of Concord 1917. Bridge removed by 1973. NHHD sketch made from inspection June 14, 1940. (NHHD Bridge Inventory Card). Storrs also designed a concrete T-beam bridge for the town Marlboro (Town Bridge No. 15) in 1918.



MILFORD STONE ARCH, MILFORD, N. H.

This cut represents an unusual construction for this period of steel and concrete. Milford as a granite town is justly proud of her granite industry. She has demonstrated her pride in her granite by building a granite arch as shown in this illustration. The bridge consists of two arches with 60-foot clear spans, each having a rise of about 15 feet. The roadway is 22 feet in the clear, with a 5-foot sidewalk. This bridge is located over the Souhegan River, near the Pine Valley railroad station, and replaces what was known as the Old County bridge, which was probably built seventy or eighty years ago. This bridge was designed by STORRS, BRIDGE ENGINEERS, of Concord, N. H., and was built by the Lovejoy Granite Company for the town of Milford, in 1917.

FIGURE 65: Milford 052/135, "County Bridge," Wilton Road over Souhegan River. Stone double arch bridge designed by Storrs in 1917. Picture above used as frontispiece in Storrs & Storrs bridge construction handbook, published a year later. Bridge remains in service (Storrs & Storrs, 1918).

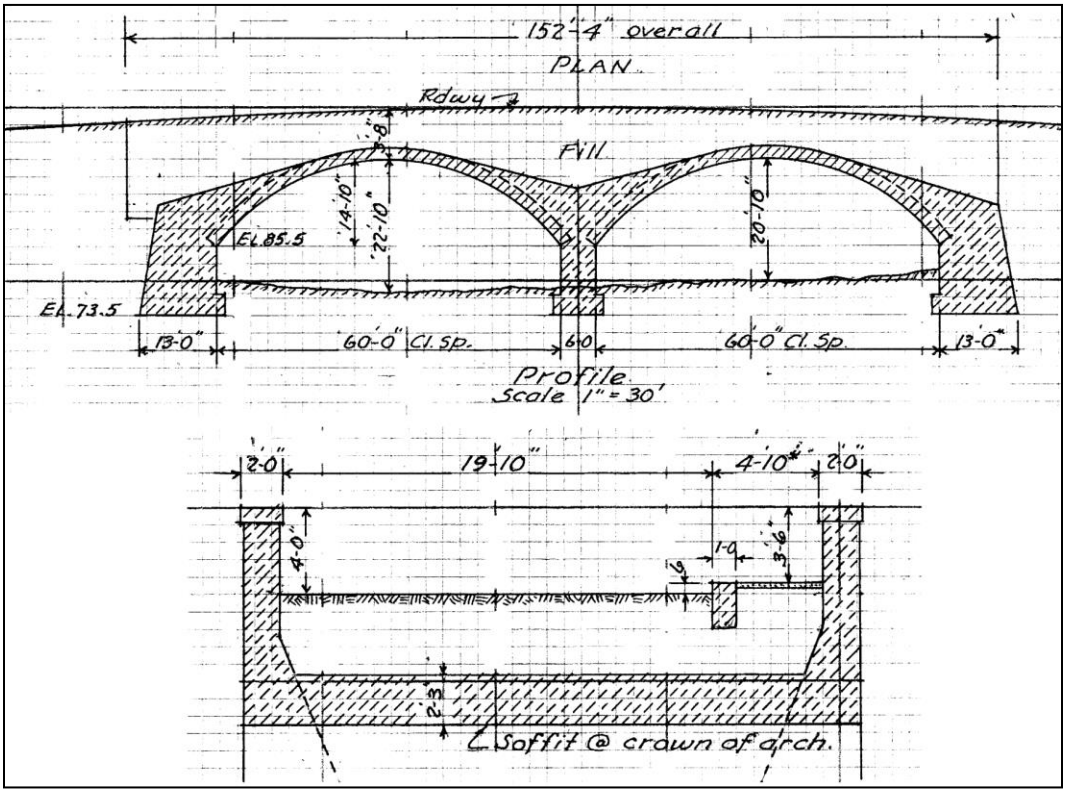


FIGURE 66: Milford 052/135, County Bridge (1917). NHHD sketch made from inspection July 29, 1940 (NHHD Bridge Inventory Card).

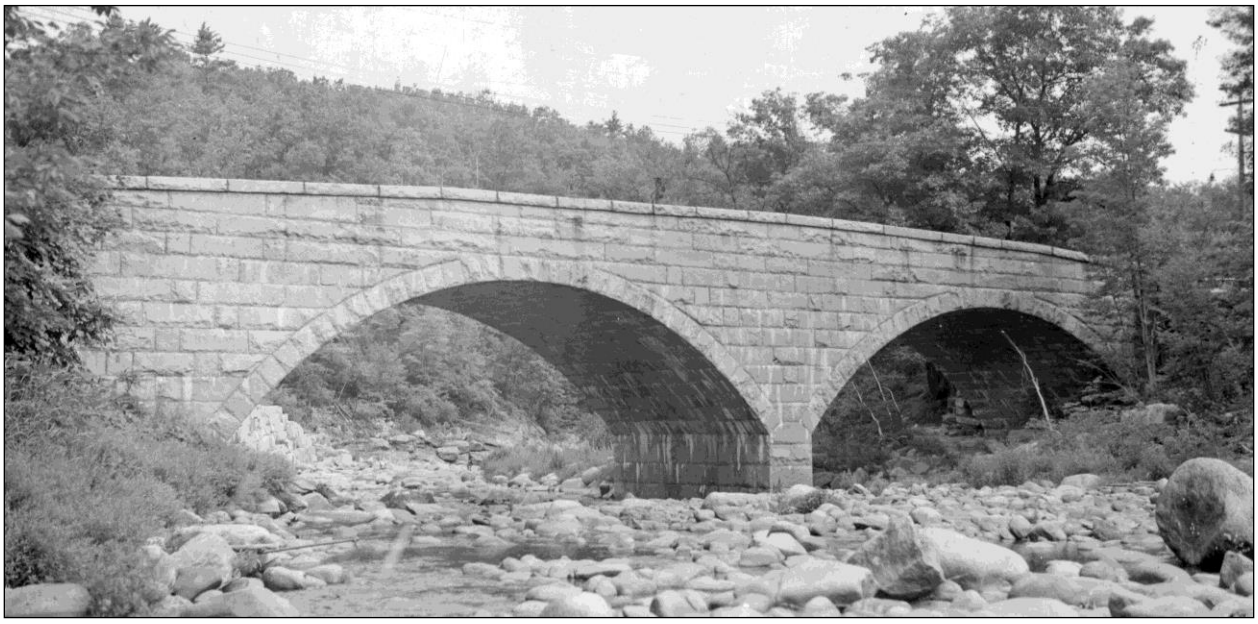


FIGURE 67: Milford 052/135, "County Bridge" (1917). Each arch has a clear span of 60 feet. Note the remarkable similarity to the arch bridge designed three years later for Barre, Vermont shown in Figure 68. Photo July 29, 1940 (NHHD Bridge Inventory Card). Bridge remains in service.

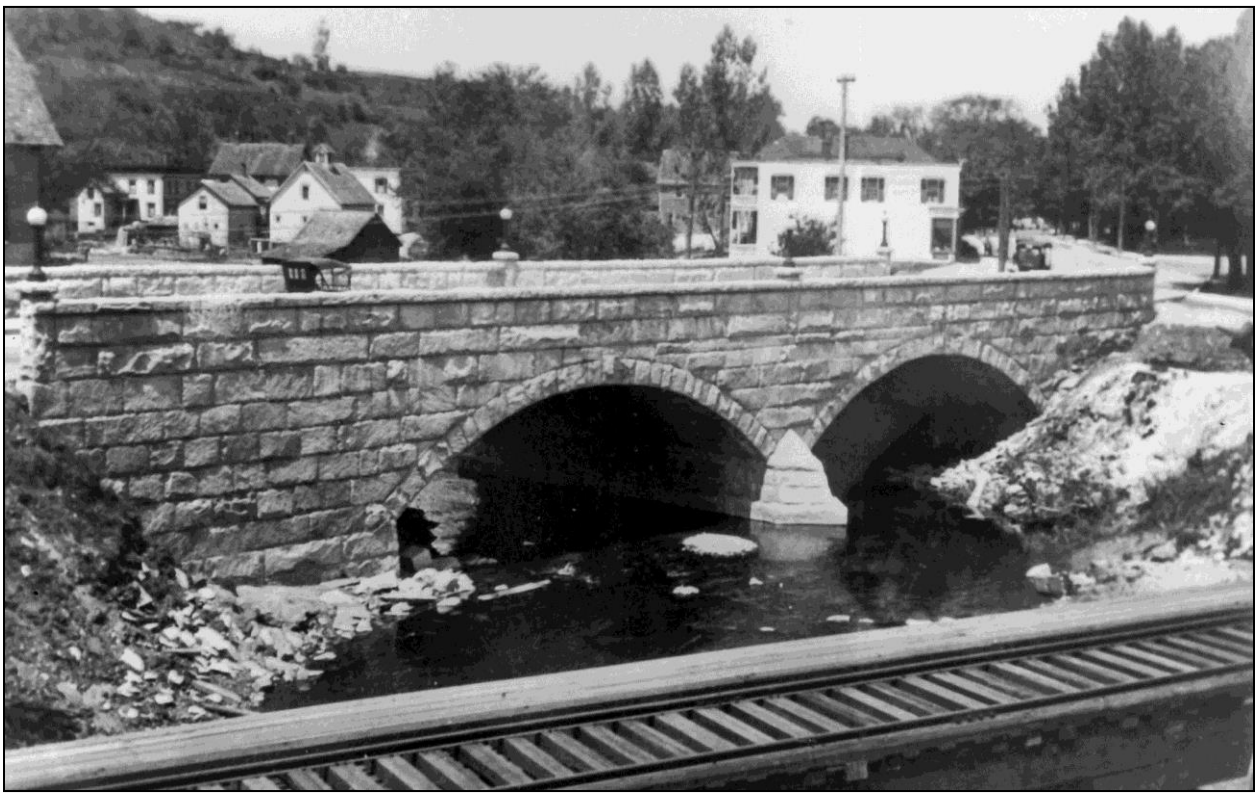


FIGURE 68: Barre, Vermont, "Granite Bridge" carrying South Main Street over Winooski River. Storrs designed this twin arch granite- bridge in January 1920 only to have the project and his contract cancelled by the city council. In March a new council and mayor reinstated the project. Construction began in May and was completed in October 1920 by the New Hampshire Cement Construction Co at a cost of $28,143. Storrs was paid $1,809 for engineering services (McCullough 2005, p. 80). Bridge remains in service.

FIGURE 69: Canaan 103/049, US 4 over Mascoma River. Storrs designed this 73' Warren pony truss under the Federal Aid program for federally designated highways. Built by United Construction Co. in 1919, replaced in 1965. Storrs designed an identical span, also over Mascoma River in 1921, see below. Photo November 25, 1940 (NHHD Bridge Inventory Card).

FIGURE 70: Canaan 091/030, Blackwater Road over Mascoma River. Designed by Storrs and built by United Construction Co. in 1921. This bridge was documented in 1992 prior to demolition and included large-format photographs, Storrs' original plans and fabrication shop drawings. Documentation photo dated April 2, 1992 (NHDHR HPD NH-519).

FIGURE 71: Canaan 103-049. Documentation photo dated April 2, 1992 (NHDHR HPD NH-519).

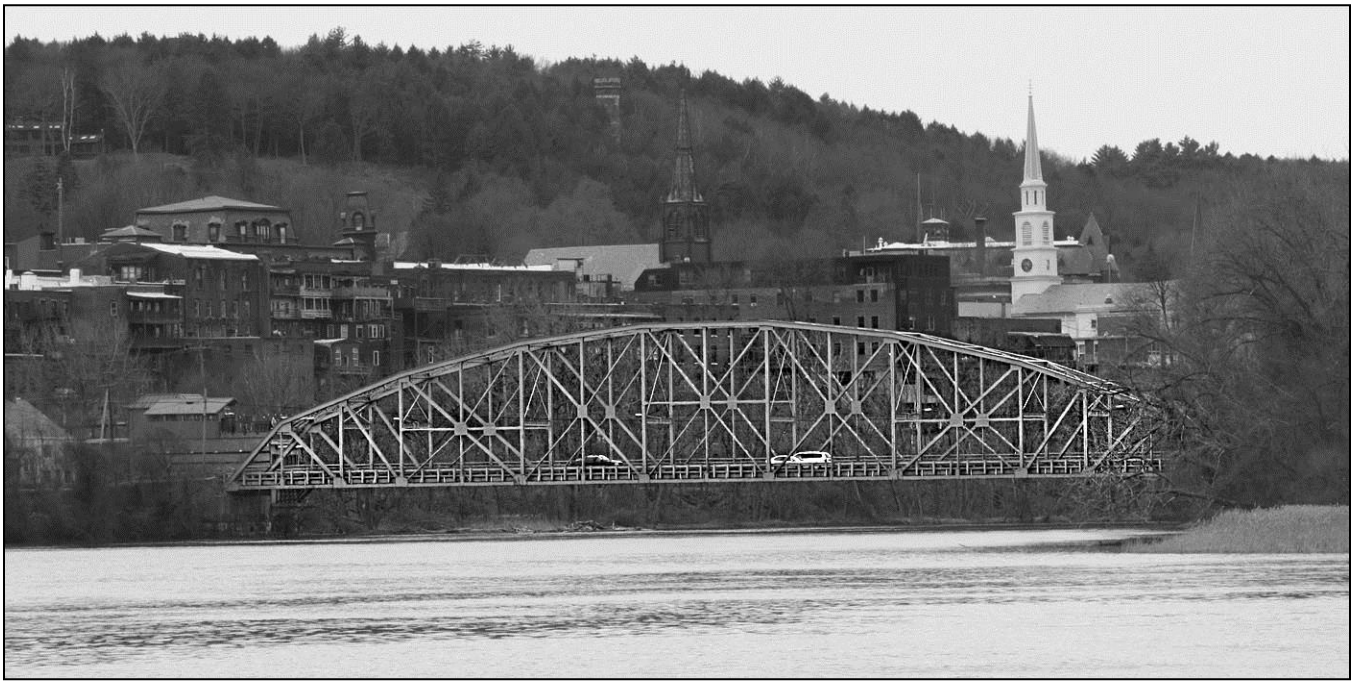


FIGURE 72: Hinsdale 041/040, "Hinsdale-Brattleboro Bridge," carries NH 119 over the Connecticut River. This 330-foot-long Pennsylvania truss was designed by Storrs and fabricated and erected by the American Bridge Company in 1921 under contract with United Construction Co. On June 16, 1921 during erection of the bridge, the falsework collapsed throwing the half-completed steelwork, a traveling crane and 23 workers into the river. In what was called a miracle, no one was killed or seriously injured. 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. Photo of downstream side from New Hampshire shore with city of Brattleboro, Vermont in background (Historic Documentation Co. Inc. 2012).

FIGURE 73: Hinsdale 041/040, Hinsdale-Brattleboro Bridge (1921). Photo by NHHD, June 11, 1941, shows Hinsdale approach with City of Brattleboro in background (NHHD Bridge Inventory Card).

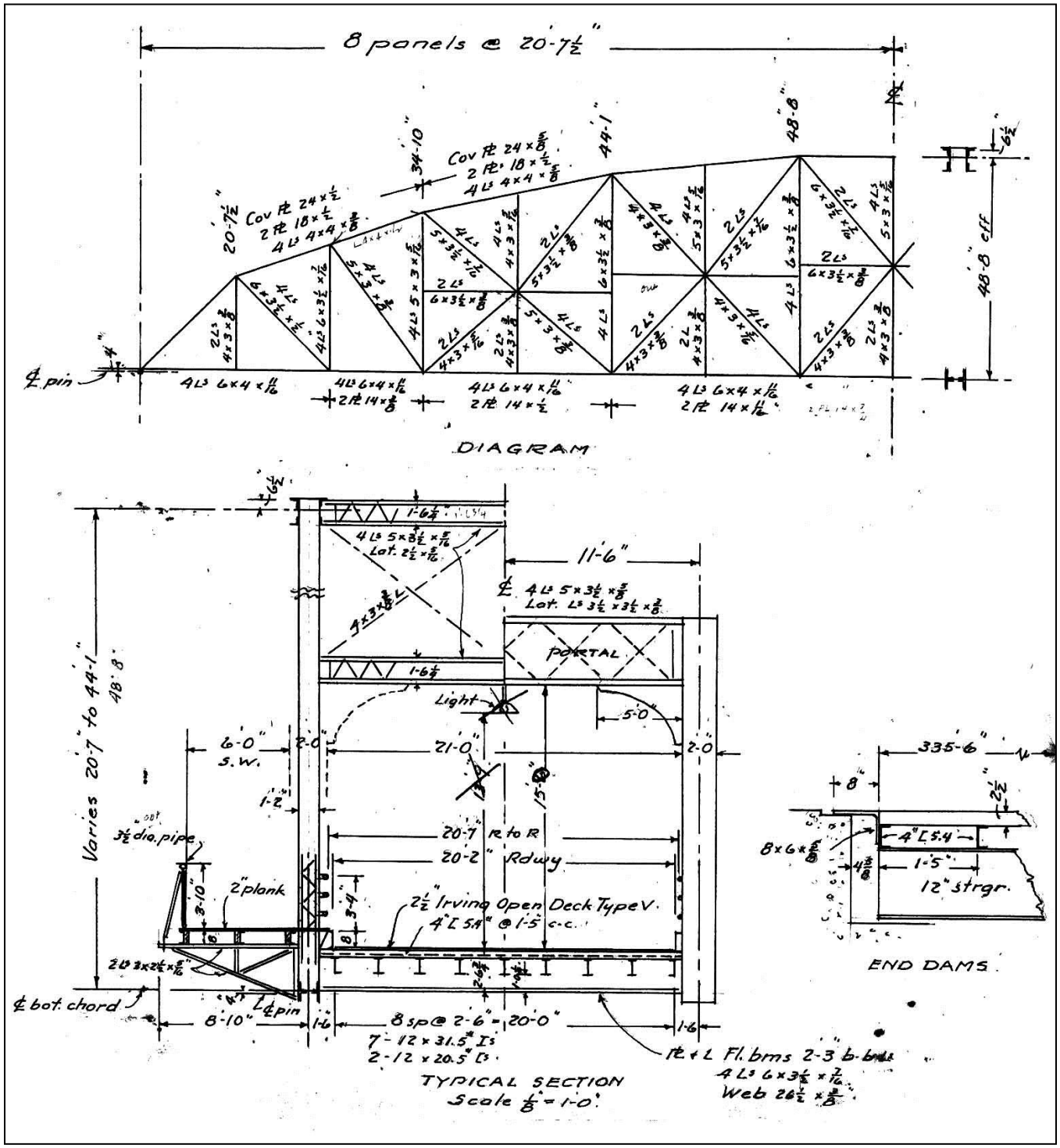


FIGURE 74: Hinsdale 041/040, Hinsdale-Brattleboro Bridge (1921). NHHD sketch made from inspection June 11, 1941 (NHHD Bridge Inventory Card).

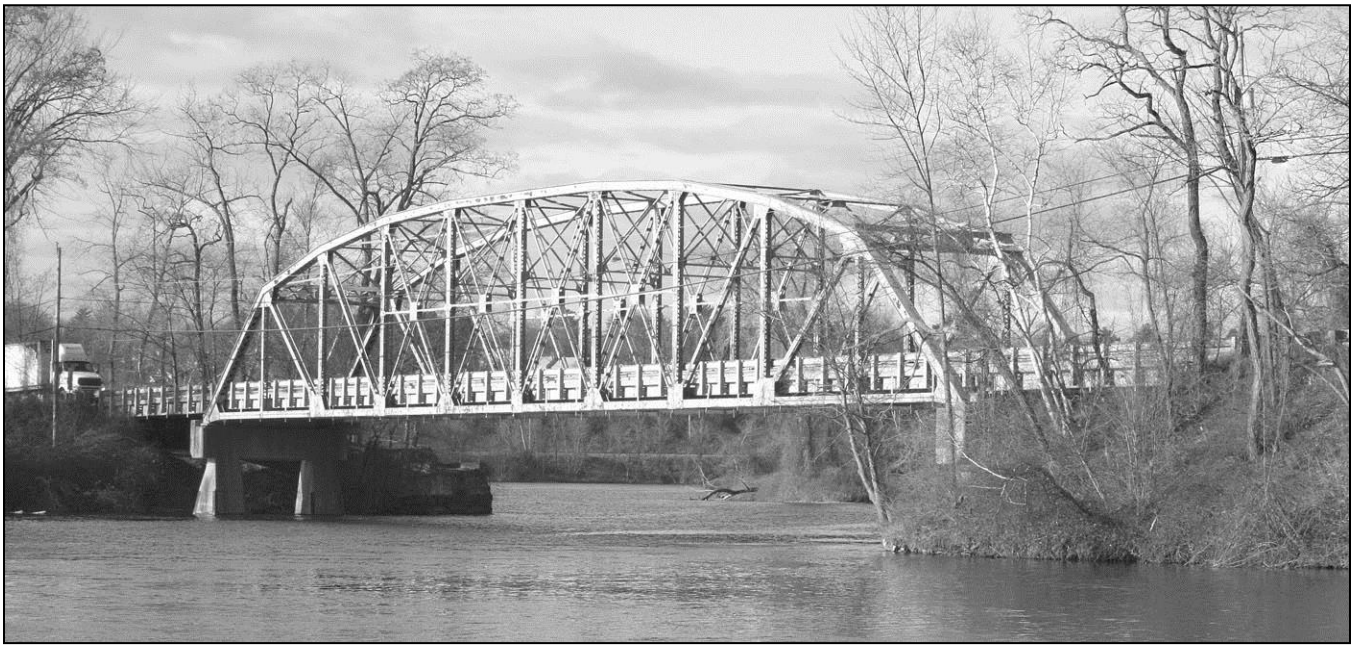


FIGURE 75: Hinsdale 042/044, "Hinsdale Bridge," carries NH 119 over the east channel of the Connecticut River between "the mainland" and a small island in the river. This single-span riveted Parker truss (a Pratt truss with a polygonal top chord) is 200 feet long. It was designed by Storrs for the Town of Hinsdale and erected by the Boston Bridge Works in 1926. It replaced a covered bridge, thought to be largely the same bridge built in 1862. Single plate girder approach spans are located at each end of the bridge. Photo by NHHD, June 11, 1941, shows downstream side taken from Hinsdale shore. (NHHD Bridge Inventory Card).

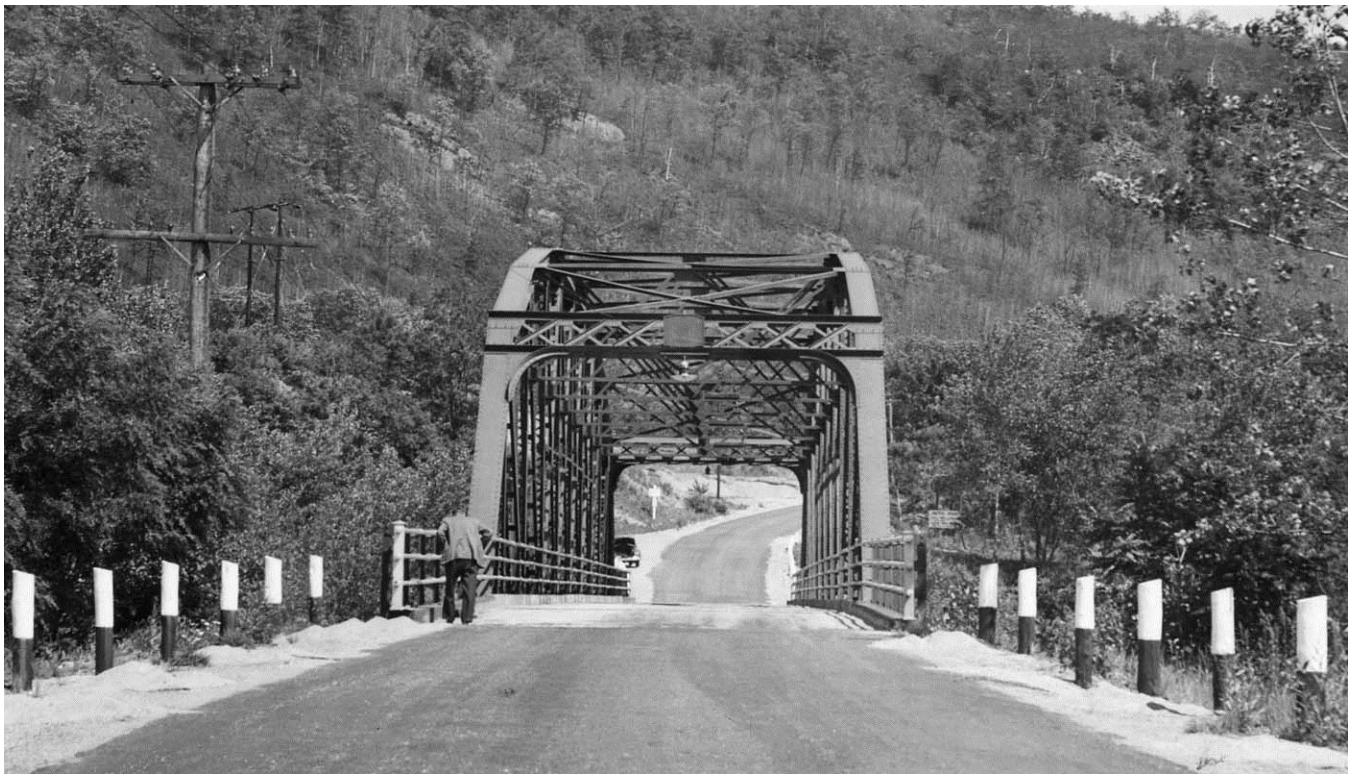


FIGURE 76: Hinsdale 042/044, "Hinsdale Bridge" (1926). Brattleboro approach looking toward Hinsdale. Photo by NHHD, June 11, 1941, NHHD Bridge Inventory Card).

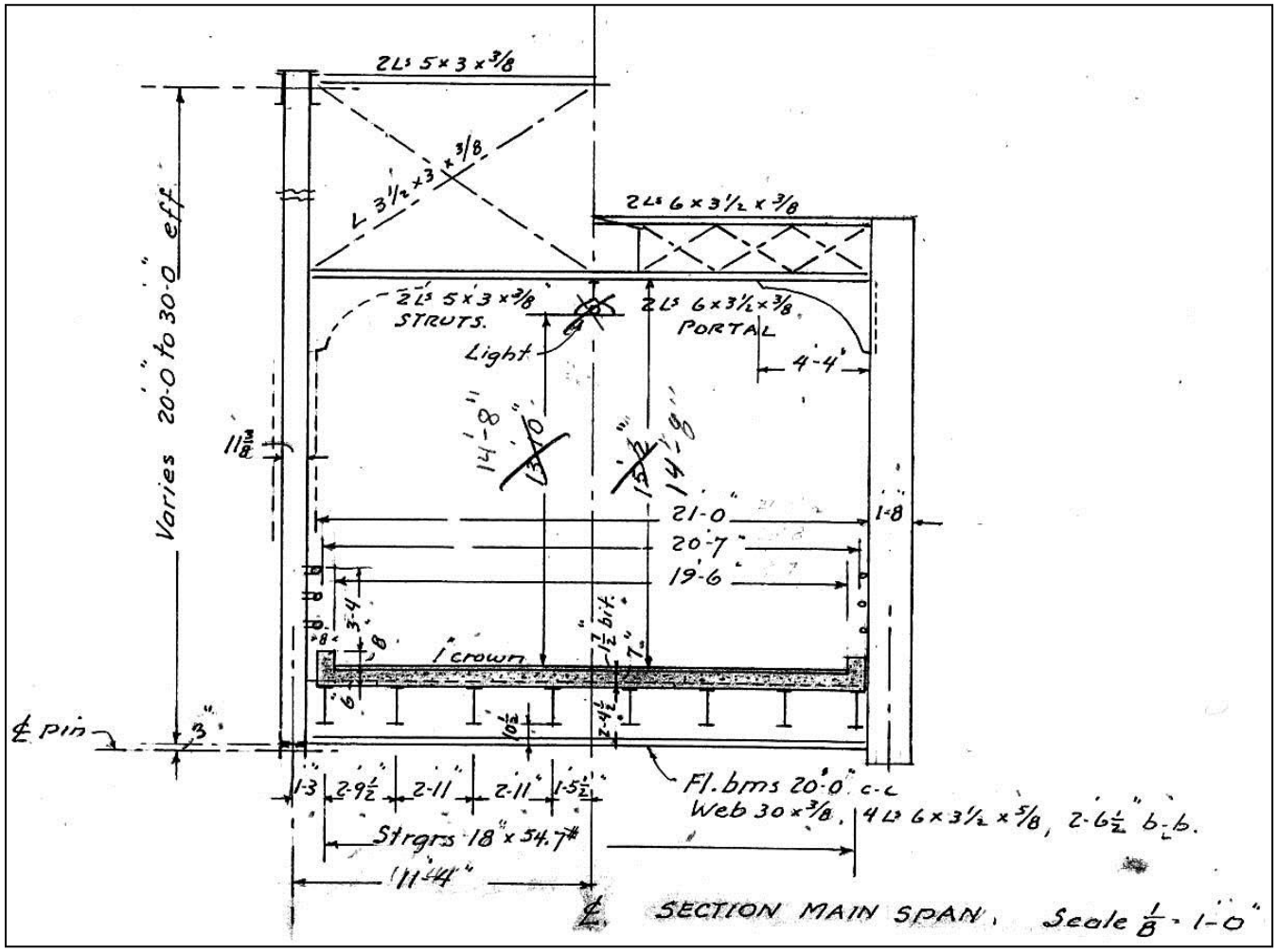


FIGURE 77: Hinsdale 042/044, "Hinsdale Bridge (1926)." NHHD sketch made from inspection June 11, 1941 showing section thru truss (NHHD Bridge Inventory Card).

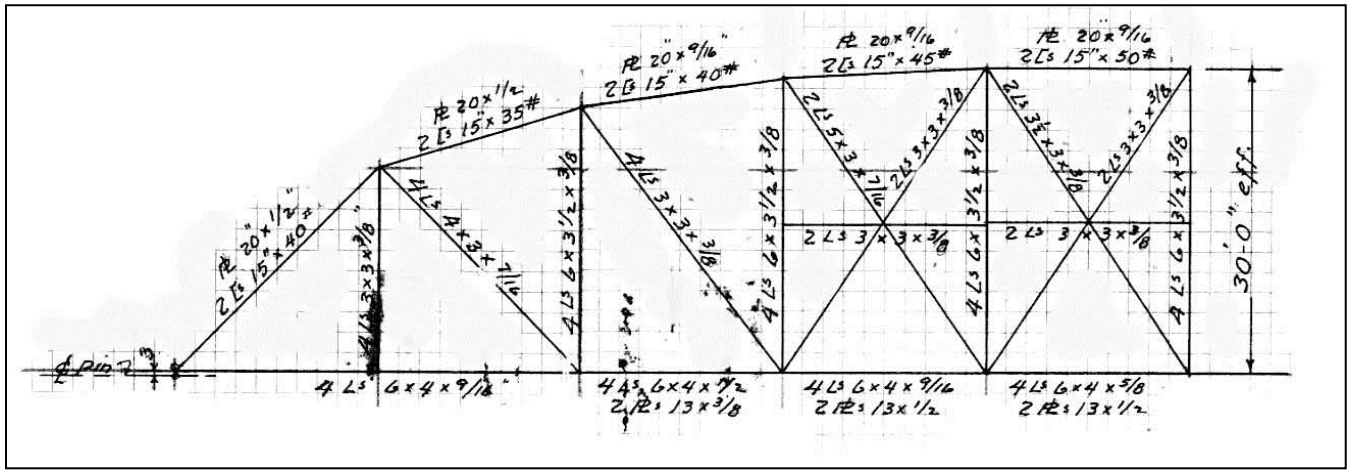


FIGURE 78: Hinsdale 042/044, "Hinsdale Bridge" (1926). NHHD sketch made from inspection June 11, 1941 showing half-elevation of truss (NHHD Bridge Inventory Card).

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New Hampshire Highway Department (NHHD). See NHDOT.

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