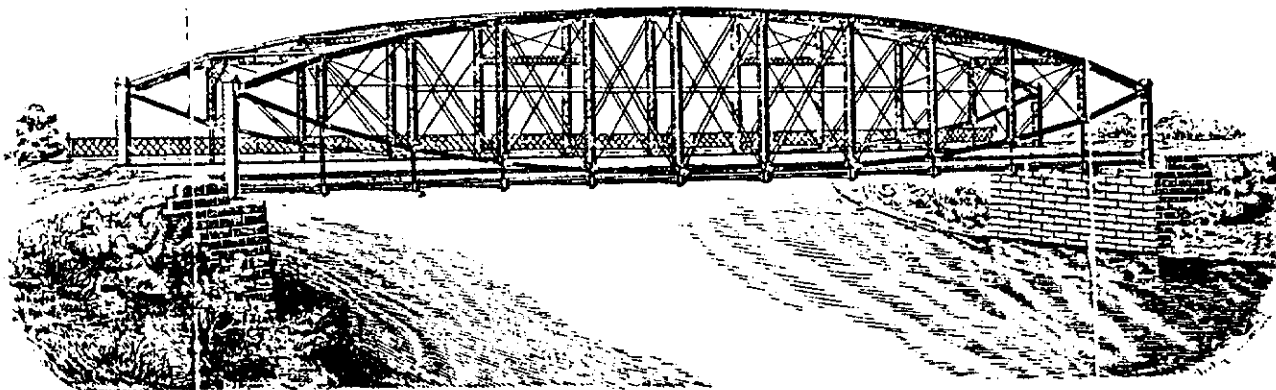


CORRUGATED METAL COMPANY,  
BRIDGE BUILDERS,

OFFICE AND WORKS, . . . . . EAST BERLIN, CONN.



HIGH TRUSS BRIDGE.

Patented April 16, 1878, and pending.

APPENDIX C: Contract for Bardwell's Ferry Bridge.

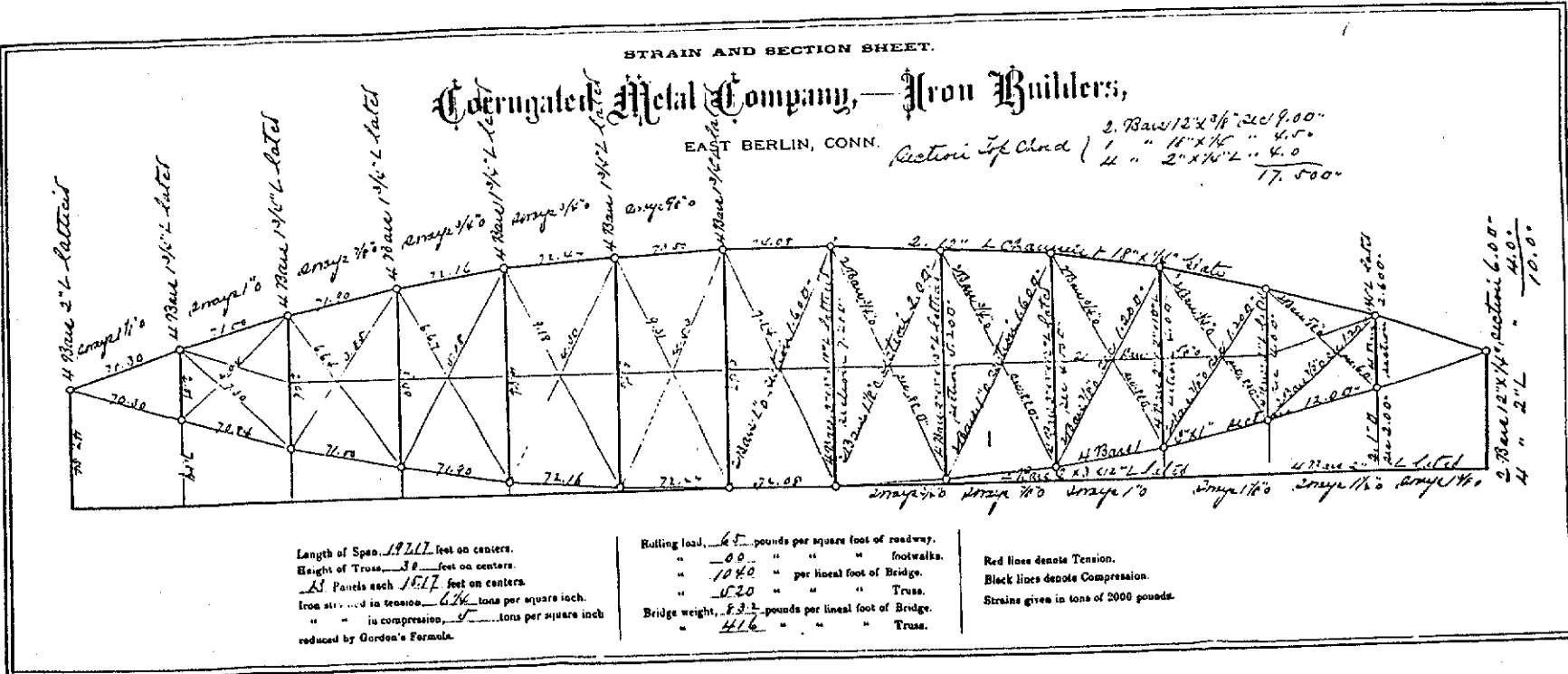
BARDWELL'S FERRY BRIDGE  
HAER No. MA-98  
(page 15)

STRAIN AND SECTION SHEET.

**Corrugated Metal Company, — Iron Builders,**

EAST BERLIN, CONN.

Section of Chord  
 2. Bars 12"x1/2" x 9.00"  
 1 " 18"x1/2" " 4.5"  
 2 " 2"x1/4" " 4.0  
 17.500



Length of Span, 192.17 feet on centers.  
 Height of Truss, 38 feet on centers.  
 Panels each 15.17 feet on centers.  
 Iron str. used in tension, 6.76 tons per square inch.  
 " " in compression, 5 tons per square inch  
 reduced by Gordon's Formula.

Rolling load, 65 pounds per square foot of roadway.  
 " 00 " " " " footwalks.  
 " 1040 " " " " per lineal foot of Bridge.  
 " 020 " " " " Truss.  
 Bridge weight, 83.5 pounds per lineal foot of Bridge.  
 " 416 " " " " Truss.

Red lines denote Tension.  
 Black lines denote Compression.  
 Strains given in tons of 2000 pounds.

**Original Contract** Made this 17th day of March

A D. 1887, by and between THE CORRUGATED METAL COMPANY, of East Berlin, State of Connecticut, party of the first part, and The Selectmen & Com. of The Town of Conway & Shelburne Mass of Franklin County of Massachusetts and State of Massachusetts party of the second part,

Witnesseth, That the said party of the first part contracts and agrees to and with the party of the second part, to build, paint, and make complete, and have ready for use, by the 25th day of May 1887 for the party of the second part, a

**WROUGHT IRON PARABOLIC TRUSS BRIDGE,**

as per drawings and specifications herewith attached, over the stream called Deerfield River at Bardwell Ferry between The Town of Conway & Shelburne County of Franklin and State of Mass according to the following specifications, viz.:

- Extreme length of Bridge, about 196 feet.
- Space between the face of abutments or water way, 192 feet.
- Roadway, floor, 16 feet.
- Sidewalk, None feet.
- The roadway joists to be 3 inches thick, 12 inches wide, and of good sound Chestnut lumber.
- The sidewalk joists to be \_\_\_\_\_ inches thick, \_\_\_\_\_ inches wide, and of good sound \_\_\_\_\_ lumber.
- The roadway floor of good sound Chestnut plank, 3 inches thick, and laid Squarewise
- The sidewalk floor of good sound \_\_\_\_\_ plank, \_\_\_\_\_ inches thick, and laid \_\_\_\_\_

All the materials for said Bridge, except the abutments and piers, are to be furnished by the party of the first part, and are to be of good and suitable quality, and the work is to be done in a thorough, workmanlike manner. And the party of the second part contracts and agrees to furnish ready for the superstructure, the abutments and piers for the said Bridge, ~~at right angles to the center line of Bridge,~~ by the 10th day of May A. D. 1887, and to pay the party of the first part the sum of

Seven Thousand Dollars 7000.00

for the said Bridge, as follows, viz.: One-half on the day of delivery of the iron material of said Bridge at the place of erection, and the remaining one-half on the completion of the said Bridge. And the party of the second part further agrees to let the party of the first part have free use of the old Bridge at or near the aforesaid place, for the putting up of trestle work, and for other purposes, as may be for convenience in erecting said Iron Bridge. And the party of the first part are not to be held responsible for unavoidable delays in railroads, or the elements, or circumstances beyond their control.

Amasa Bardwell } Selectmen of Chas Parsons Jr } Selectmen  
Elbridge Adams } Shelburne } Franklin Pease } of  
Eleazer Miner } } Thos W. Toppan } Conway

Corrugated Metal Co  
John Tomme  
agent

Patented April 16, 1878, and pending.

**Consolidated Metal Company**

**IRON BUILDERS,  
 EAST BERLIN, CONN.**

**Specifications for a Wrought-Iron Truss Bridge.**

LOCATED

*Across the Greenfield River at Bardwell Ferry*

General Dimensions. Extreme length, *195* feet. Number of Spans, *1*. Clear length of each Span, *194'* feet. Bridge to have *1* roadway *16* feet wide in the clear, and *0* walk each *0* feet wide in the clear. Trusses to be *30* feet high and to consist of *18* panels.

**IRON WORK.**

Top Chord. The top chord shall be constructed of two *12* inch channel bars and top plate *1/8*" inches wide, united by *5/8*" inch rivets *6* inch pitch, and on the bottom by *1/2*" inch by *1/4*" inch bars placed from *3* feet to *4* feet apart with two *5/8*" inch rivets in each end. Chord to be re-enforced and accurately drilled at each panel point for pin holes.

Lower Chord. The Lower Chord shall be composed of *4* chord bars *3" x 1"* made from refined iron connected at each panel point ~~and end post~~ by *3* inch pins, which latter shall be turned to exact size to fit drilled pin hole in enlarged head of chord bars. *at end the pin shall be 4" in diameter*

End Post. The End Post shall be composed of two *12* inch channel bars united on the face side by *lattice* ~~bars~~ *lattice* inches wide at the top, spreading to *11* inches wide at the bottom, and united to same by *1/2*" inch rivets *6* inch pitch: the opposite flanges of channels shall be united by *1/2*" inch by *1/4*" inch strips, same as top chord. The end plate shall be *3/4*" inch thick, securely riveted to end post by wrought iron angle brackets.

Web Posts. The Web Posts shall be made of one solid rolled I beam at each panel point or *4 L's* ~~lattice~~ *lattice* re-enforced and accurately drilled at each end for pin holes. The post shall be held at the center by *2* wrought iron central tie-rod passing through the web ~~of beam~~ *and* secured to same with jarn nuts on each side.  
*\*1 = 4 Bars 1 1/4" L Lates \*2 = 4 Bars 2" L Lates \*3 = 4 Bars 2 1/2" L Lates \*4 = 4 Bars 3" L Lates \*5 = 4 Bars 3 1/2" L Lates \*6 = 4 Bars 4" L Lates*

Main Diagonal Tie. The Main Diagonal Tie in each panel shall be formed of *2* bars of *round* iron having pin connections with top and bottom chords and sleeve nut adjustment. All screw ends shall be enlarged that bar under the thread shall be *1-16* inch larger than in the body.

*2 1/2" round 2 Bars 7/8" 3 1/2" round 2 Bars 7/8" 4 1/2" round 2 Bars 7/8" 5 1/2" round 2 Bars 1" 6 1/2" round 2 Bars 1" 7 1/2" round 2 Bars 1" 1 1/8" 7 1/2" round 2 Bars 1"*

Counter Ties. There shall be *two* counter-ties in each panel formed of round iron with sleeve nut adjustment and enlarged screw ends, same as main ties.

*2 Bars 3/4" 2 1/2" round 2 Bars 7/8" all other panels*

**Overhead Tracing.** The Tracing over the floor shall be high enough to leave a clear headway of 19 feet, and constructed of

*4 Bars 1 1/4" L latted at each panel of upper chord.  
 At portals 4 Bars 2" L lated with Knee Braces.*

**Overhead Laterals.** The Overhead Lateral Rods shall be made of 1/8 inch to 7/8 inch round iron, placed two in each panel, and united direct to top chord pins: they shall be provided with sleeve nut adjustment.

**Floor Beams.** There shall be a Wrought Iron Floor Beam at each panel point, fastened direct to lower chord pins with wrought iron stirrups of same capacity as beams. The Beam shall be *made of plate 24" to 12" x 1/4" with 4 Bars 2" x 3" x 15" L's riveted to the flanges and 1 1/4" + 2" L Iron stiffeners riveted to the web all by 7/8" rivets*

**Lower Laterals.** The Lower Laterals shall be made of 1 3/8 inch to 3/4 inch round iron, placed two in each panel, secured to floor beams by angle iron clips, and adjusted by means of thread and nut at each end.

**Floor Line Chord.** The Floor Line Chord shall be composed of *4 L's lated* securely fastened to end post and held at each panel point by floor suspenders passing through it.

**Railing.** The ~~Sidewalk~~ Railing shall be made of *2 lines of 3/4" iron upon each side of Bridge.*

**General.** All Iron work shall be neatly and accurately fitted up in a thorough and workmanlike manner. It shall be painted two coats of metallic paint and boiled linseed oil; one before it leaves the works of the Company, and a second coat after erected in place. All joints and compressive members shall be planed or dressed to form a perfect bearing. All rivets shall be driven hot. The form and number of parts of bridge may be changed from sizes herein specified without reducing section.

WOOD WORK.

The Floor Joist shall be of good, sound *Chestnut* lumber 12 inches deep and 3 inches wide, placed 2 feet apart.

Floor Plank to be of good, sound *Chestnut* lumber 3 inches thick and 6 to 12 inches wide, and laid *square across*. The ends to be secured by 3 by 6 inch wheel guard

*Sidewalk* Joist to be by inches, placed feet apart. Sidewalk Plank to be inches thick.

*Upon each end of Bridge attached to the Overhead Brace iron shall be placed an ornamental cast iron name plate giving the names of the Selectmen of the Town of Shelburne Falls & Conway & names of Builders.*

Contract for building that was finished day of  
April in the year Eighteen hundred and  
Eighty two by an Act of the General Court  
of the State of Massachusetts in the County of Franklin  
part of the First part by the Selectmen  
of Shelburne and the Selectmen of Conway  
all in said Franklin County party of  
the second part

The said party of the  
First part in the construction  
hereinafter mentioned have made an agreement  
to build the said bridge and to make  
and maintain the same in an according  
manner to the plan and specifications  
in the order at Bardwell's Ferry  
in the County of Franklin and in the  
New State and to allow to the party of  
the second part in the present agreement  
the same to be built according to the  
said specifications pursuant to the  
Act of the General Court of the State  
of Massachusetts in the year of  
Eighteen hundred and Eighty two  
and to allow to the party of the second  
part in the present agreement the same  
to be built according to the  
said specifications pursuant to the  
Act of the General Court of the State  
of Massachusetts in the year of  
Eighteen hundred and Eighty two

The party of the second part covenants  
and agrees to pay to the party of the first  
part the sum of one hundred dollars  
according to the said specifications and to  
be paid in three equal parts the first  
part to be paid on the day of the  
completion of the bridge and the  
other two parts to be paid on the  
day of the completion of the  
bridge -

In witness whereof the said  
parties have hereunto set their hands  
and seals the day and year first above written

Glenn H. ...

Charles H. ...  
Chairman  
of Conway

Charles H. ...  
for the Selectmen of Shelburne