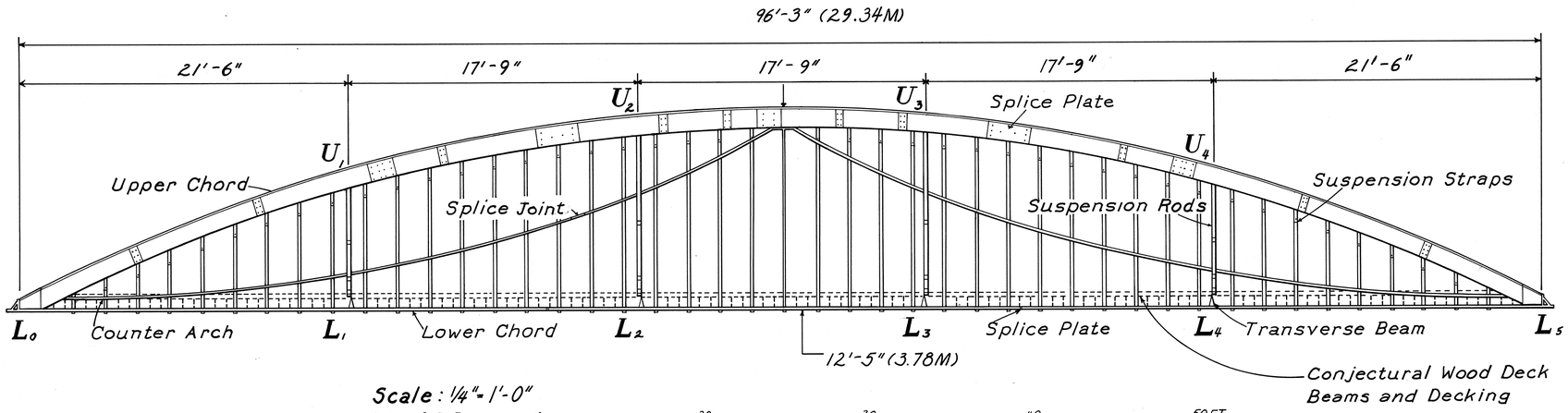
UPPER PACIFIC MILLS BRIDGE

LAWRENCE, MASSACHUSETTS · 1864



Scale: 1/4"-1'-0"

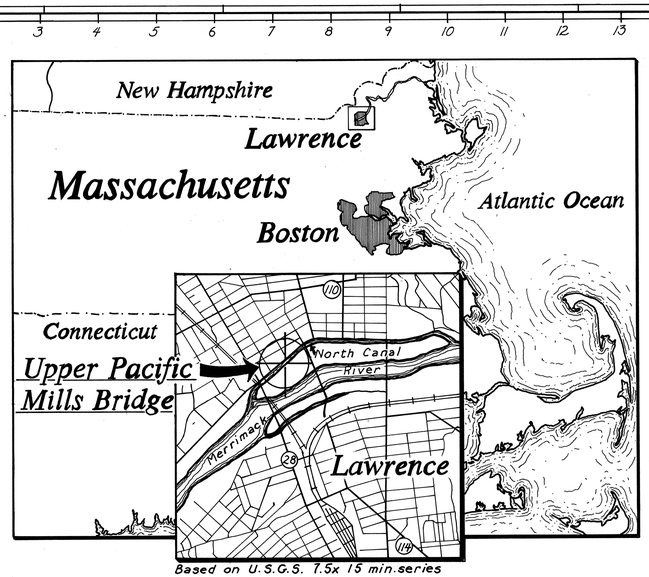
0 1 2 3 4 5 10 20 30 40 50FT.

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15M

The Upper Pacific Mills Bridge, built in 1864 to carry workers and supplies to the upper and lower Pacific Mills in Lawrence Massachusetts, is a single-span tied arch and one of only two known surviving examples of the wrought-iron tubular arch bridges built by Thomas W. H. Moseley. First built in 1855, Moseley's designs evolved over a period of approximately 20 years and were the subject of several U.S. patents.

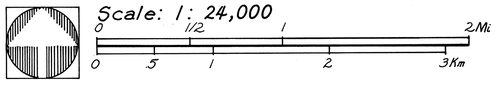
Moseley is generally credited with introducing to the American market the riveted, wrought-iron tubular arch, represented in this bridge by the hollow triangular cross-section of its upper chord which is fabricated from iron boiler plate. The prominent counter arches that extend beneath the main arch of the bridge, from its supports to its crown, were an attempt to prevent excessive deflection of the arch under asymmetrical deck loading and represent an early stage of Moseley's interest in combining redundant structural forms in the same bridge.

The Upper Pacific Mills Bridge was one of three tubular arch bridges that Moseley built at the Pacific Mills site. It is the oldest extant iron bridge in Massachusetts and one of the oldest riveted wrought iron bridges in the United States. The bridge was rescued from demolition in 1989 and restored by F.E. Griggs, Jr., Professor of Engineering, and his students at Merrimack College. The intent is to return the bridge to a site on the North Canal.



Based on U.S.G.S. 7.5x 15 min.series topographic map-Lawrence Quadrangle
Original location over North Canal

Site Map



This recording project is part of the Historic American Engineering Record (HAER), National Park Service. It is a long-range program to document historically significant engineering and industrial works in the United States.

The Cast and Wrought Iron Bridges Recording Project was co-sponsored in 1991 by the Historic American Engineering Record and the West Virginia University Institute for the History of Technology and Industrial Archaeology. Fieldwork, measured drawings, historical reports, and photographs were prepared under the general direction of Dr. Robert J. Kapsch, Chief, HABS/HAER; Eric N. DeLony, Chief and Principal Architect, HAER; Emory Kemp, Director, Institute for the History of Technology and Industrial Archaeology, and Dean Herrin, HAER Staff Historian.

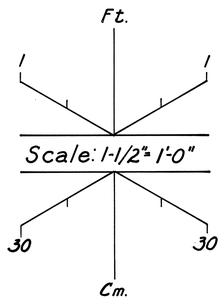
The recording team consisted of Christine Ussler, (Architecture Faculty, Lehigh University) Architect and Field Supervisor; Christine Theodoropoulos, (Architecture Faculty, California State Polytechnic University, Pomona) Engineer; Wayne Chang (University of Notre Dame), Monika Korsós (Technical University of Budapest, Hungary, US/ICOMOS), Architectural Technicians; Robert W. Hadlow (Washington State University), William Chamberlin, P.E., Historians; and Joseph E.B. Elliott (Muhlenberg College), Photographer.

Documentation of this bridge began in the summer of 1990 with field measurements taken by the HAER Massachusetts Historic Bridges Recording team.

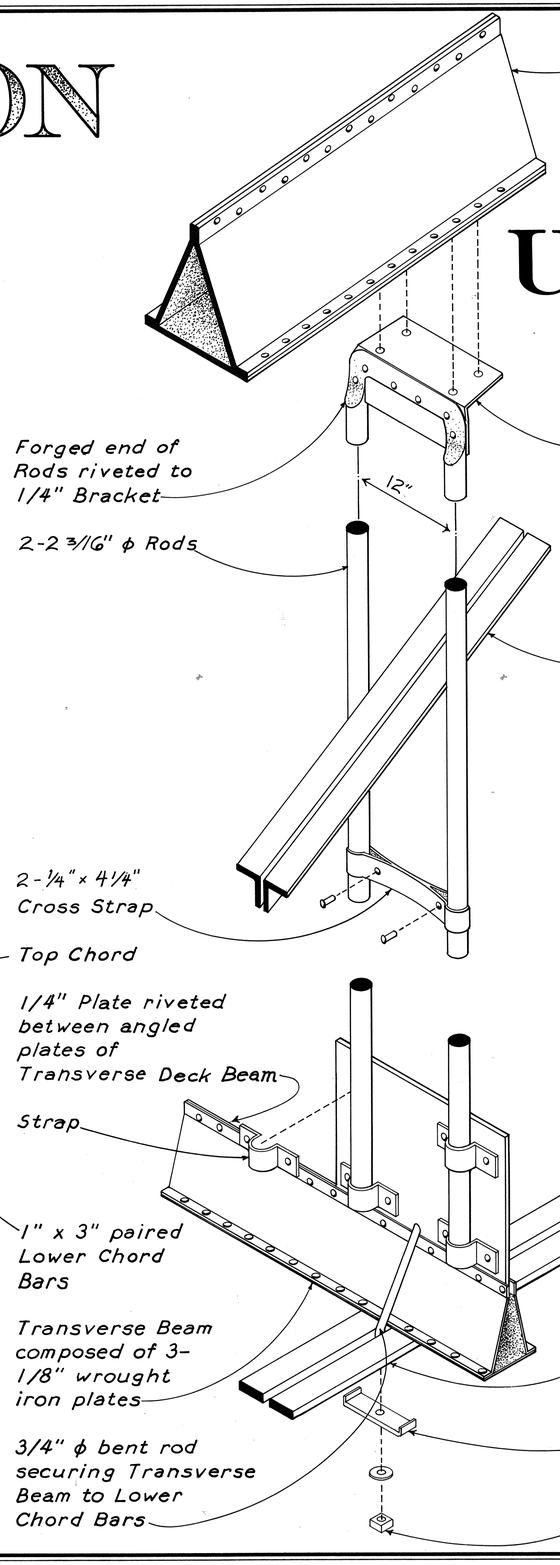
HISTORIC AMERICAN ENGINEERING RECORD
MA-72
SHEET 1 of 2
UPPER PACIFIC MILLS BRIDGE, 1864
ORIGINALLY SPANNING THE NORTH CANAL
ESSEX COUNTY
LAWRENCE
MASSACHUSETTS
DELINEATED BY: Wayne Chang 1991
CAST & WROUGHT IRON BRIDGES
RECORDING PROJECT
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

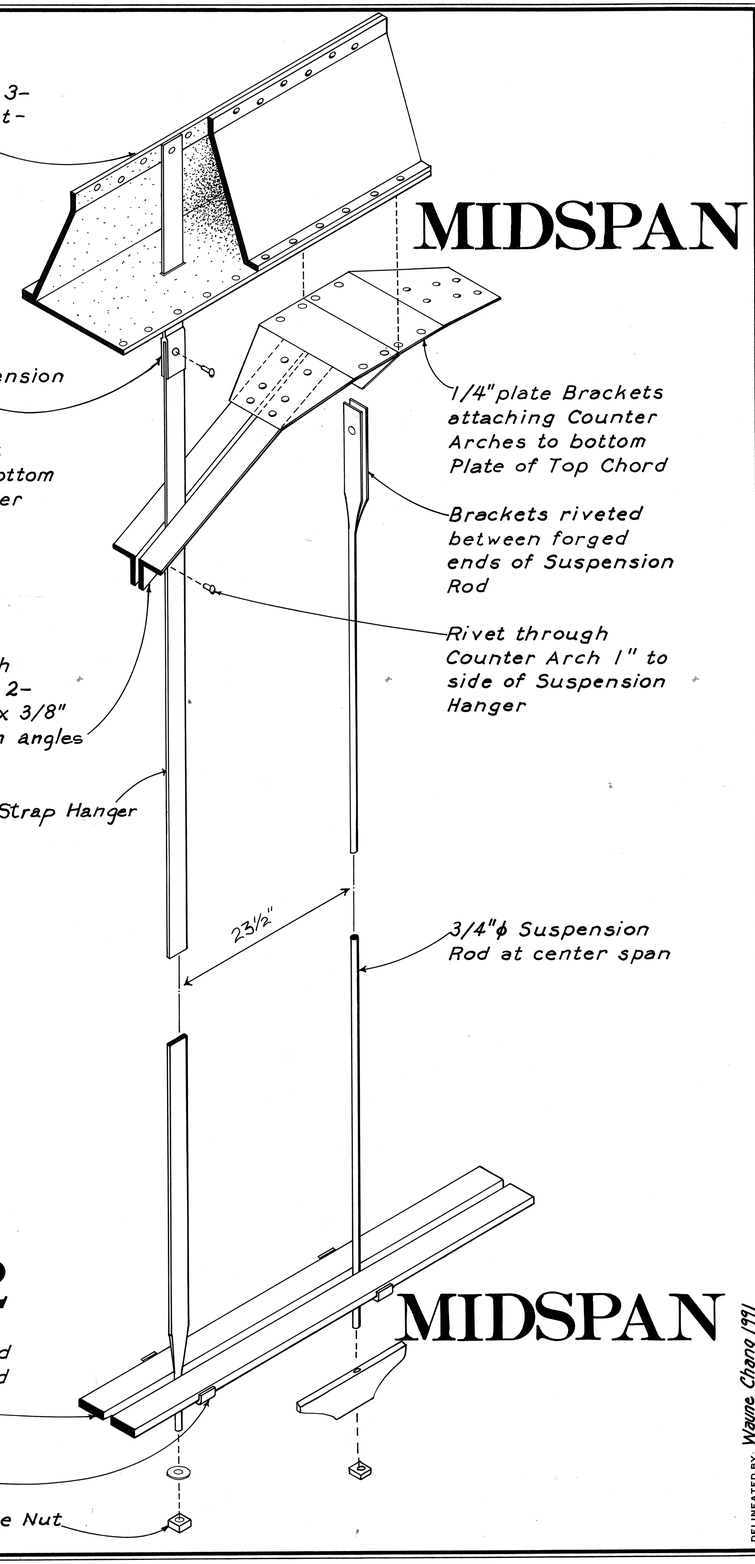
TRIM LINE

CONNECTION DETAILS



The Upper Pacific Mills Bridge is distinguished from similar Moseley wrought iron bridges by the inclusion of four, continuous, wrought iron deck beams which cantilever beyond the roadway deck and are suspended from the arches by paired rods. They were probably utilized in this bridge to support the sidewalks originally found on both sides of the main deck.





HISTORIC AMERICAN ENGINEERING RECORD
MA-72

SHEET 2 of 2

MASSACHUSETTS

UPPER PACIFIC MILLS BRIDGE, 1864
ORIGINALLY SPANNING THE NORTH CANAL
LAWRENCE
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