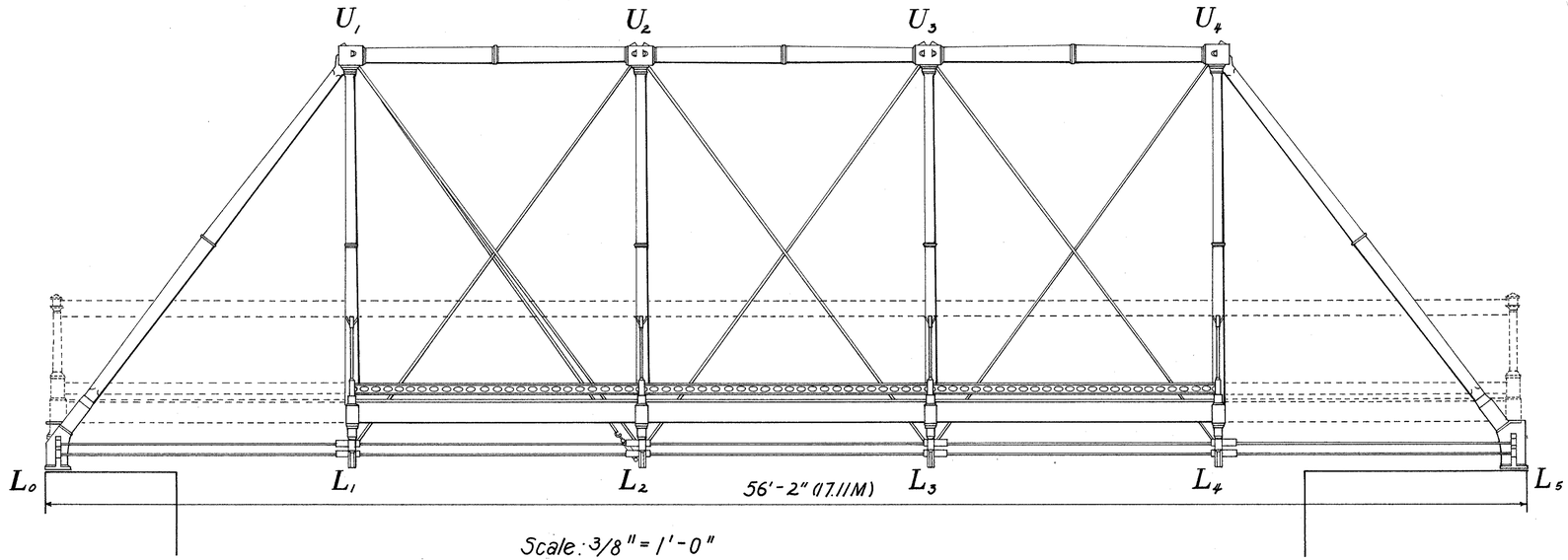
WALNUT STREET BRIDGE

HELLERTOWN · 1860 · PENNSYLVANIA



Walnut Street Bridge is a Pratt-truss span that crossed Saucon Creek on the west side of Hellertown, Pennsylvania. Charles N. Beckel fabricated it at his family's foundry on Sand Island in nearby Bethlehem. Beckel was a master foundryman who studied bridge design with the engineer Francis C. Lowthorp of Trenton, New Jersey. He employed Lowthorp's patented elements in many of his spans, including the Walnut Street Bridge.

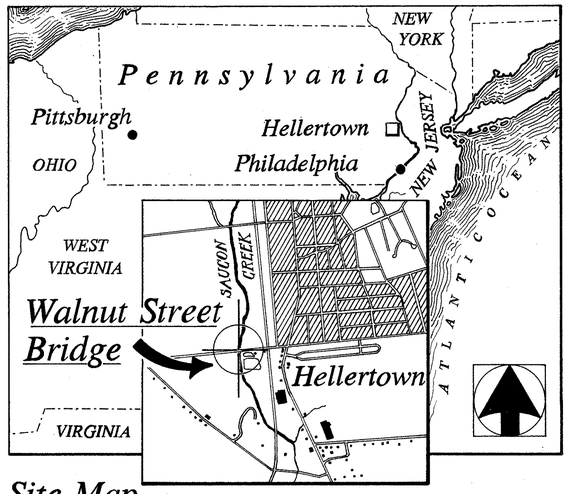
The bridge is a 56-foot, 5-panel through-truss span. The cast-iron upper chords and tall web posts flare to their midpoints to resist buckling under compressive forces. The cast-iron, continuous, deck beams cantilever to one side to carry a pedestrian walk. Although cast-iron is not normally used in beams because of its low tensile strength, Beckel designed his with refinements that successfully withstood loads, without the help of modern steel I-beams, for over 90 years. He flared the upper and lower flanges from ends to center to better resist bending and stiffened the webs with raised ridges.

Walnut Street Bridge probably dates from the early 1860's and was moved to the site near Hellertown in 1879. In 1970, Northampton County replaced it with a reinforced-concrete deckgirder span. At present, the bridge sits adjacent to its former site in Hellertown.

Scale: 3/8" = 1'-0"

0 1 2 3 4 5 10 15 20Ft

0 1 2 3 4 5M



Site Map

Original location over Saucon Creek
Based on U.S.G.S. 7.5 min series topographic map, Hellertown Quadrangle

Scale 1:16000

0 .5 1 2M

0 1 2 3KM

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 cosponsored 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 Theodoropulos, P.E. (Architecture Faculty California State Polytechnic University, Pomona); 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

DELINEATED BY: Wayne Chang, Monika Korsós 1991

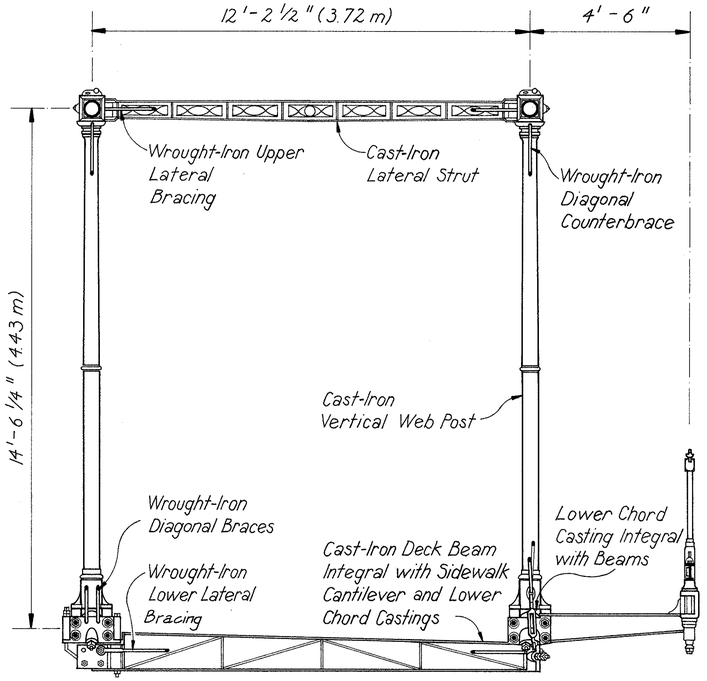
CAST-& WROUGHT-IRON BRIDGES RECORDING PROJECT
NATIONAL PARK SERVICE
HISTORIC AMERICAN ENGINEERING RECORD
UNITED STATES DEPARTMENT OF THE INTERIOR

WALNUT STREET BRIDGE, c. 1860
FORMERLY SPANNING SAUCON CREEK
NORTHAMPTON COUNTY
HELLERTOWN
PENNSYLVANIA

SHEET 1 OF 3

HISTORIC AMERICAN ENGINEERING RECORD
PA-206

TRIM LINE

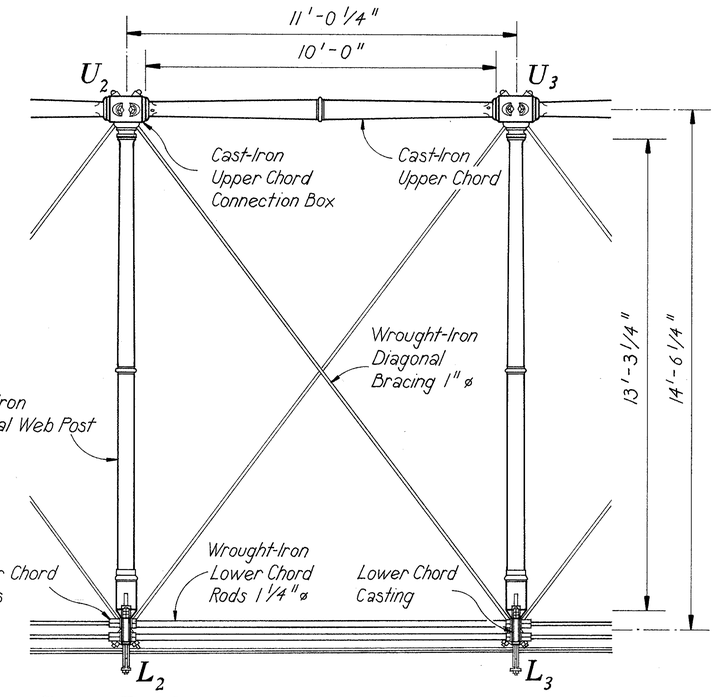


Section A-A

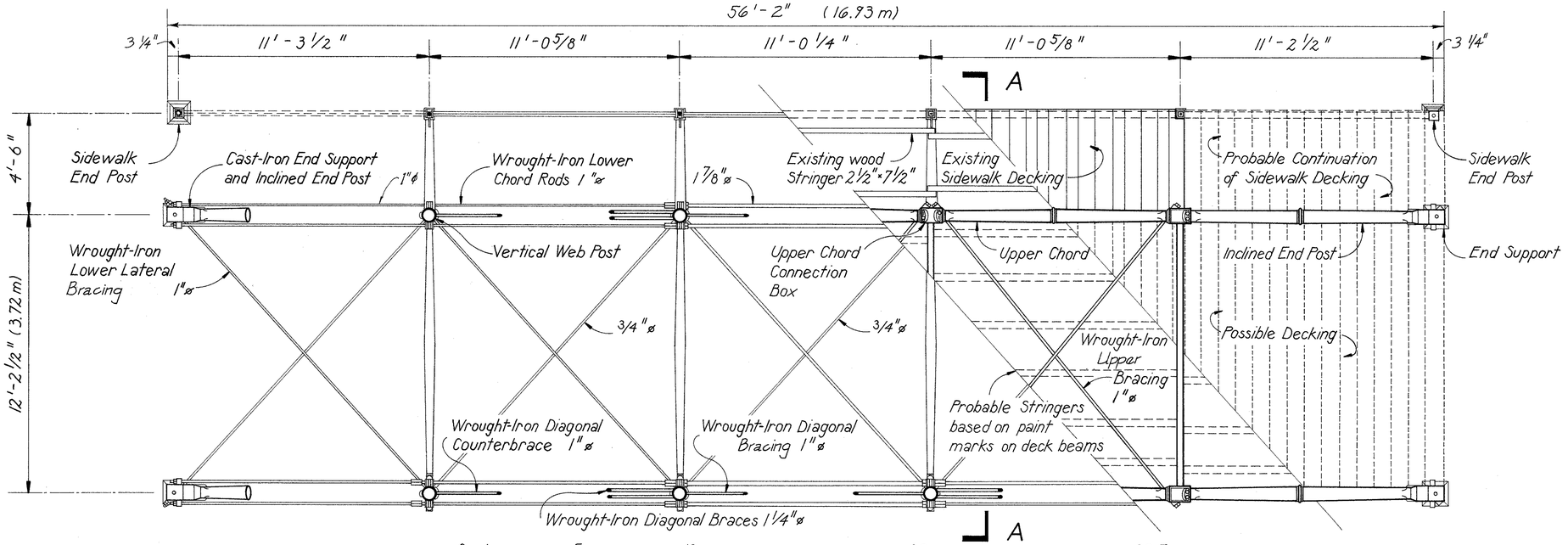
Scale: 1/2" = 1'-0"

0 1 5 10 Ft

0 1 2 3 M



Center Panel



Plan at Lower Chord

Plan at Upper Chord

0 1 5 10 20 30 Ft

0 1 5 10 M

Scale: 3/8" = 1'-0"

DELINEATED BY: Monika Korsos, 1991.

CAST-8 WROUGHT-IRON BRIDGES RECORDING PROJECT
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WALNUT STREET BRIDGE, c. 1860
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SHEET 2 of 3

HISTORIC AMERICAN ENGINEERING RECORD
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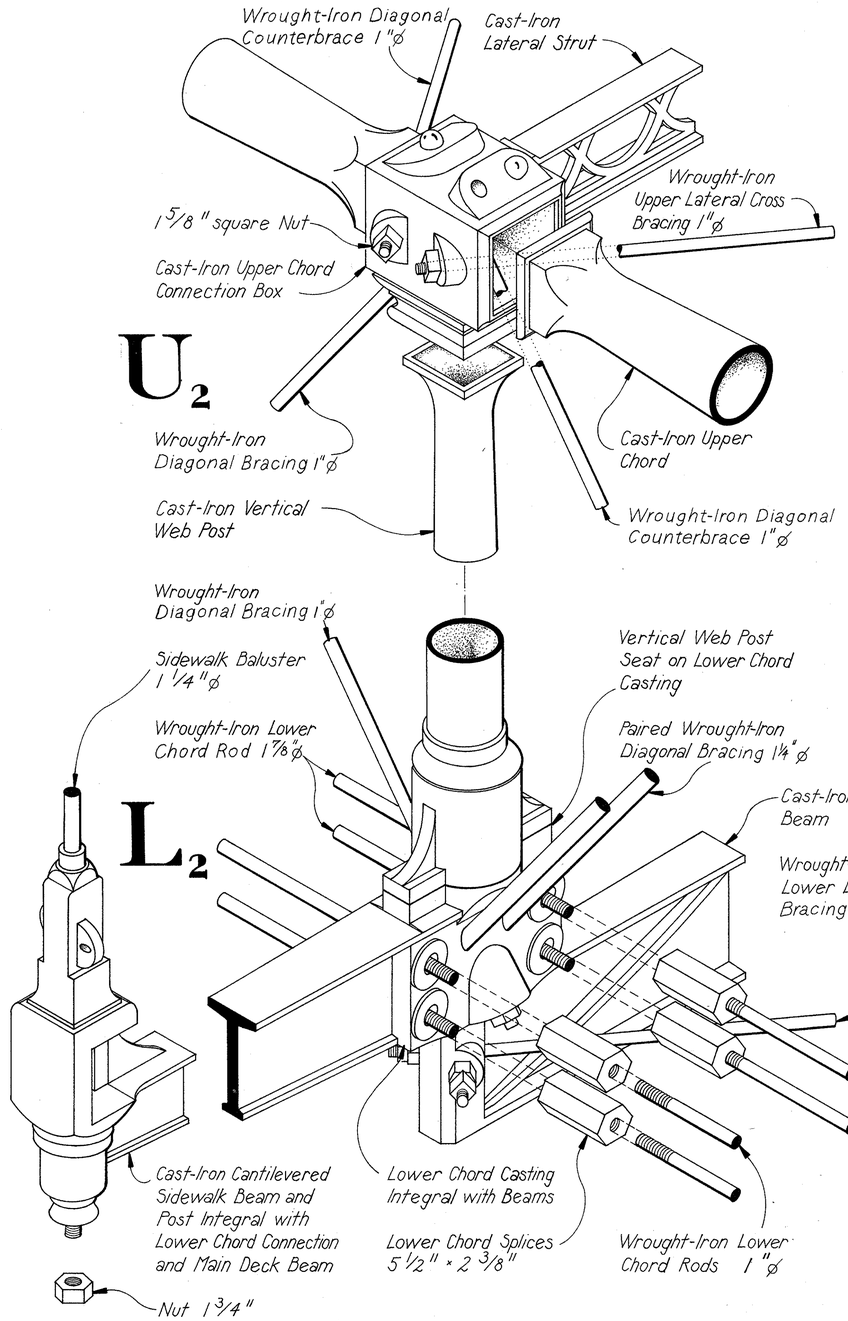
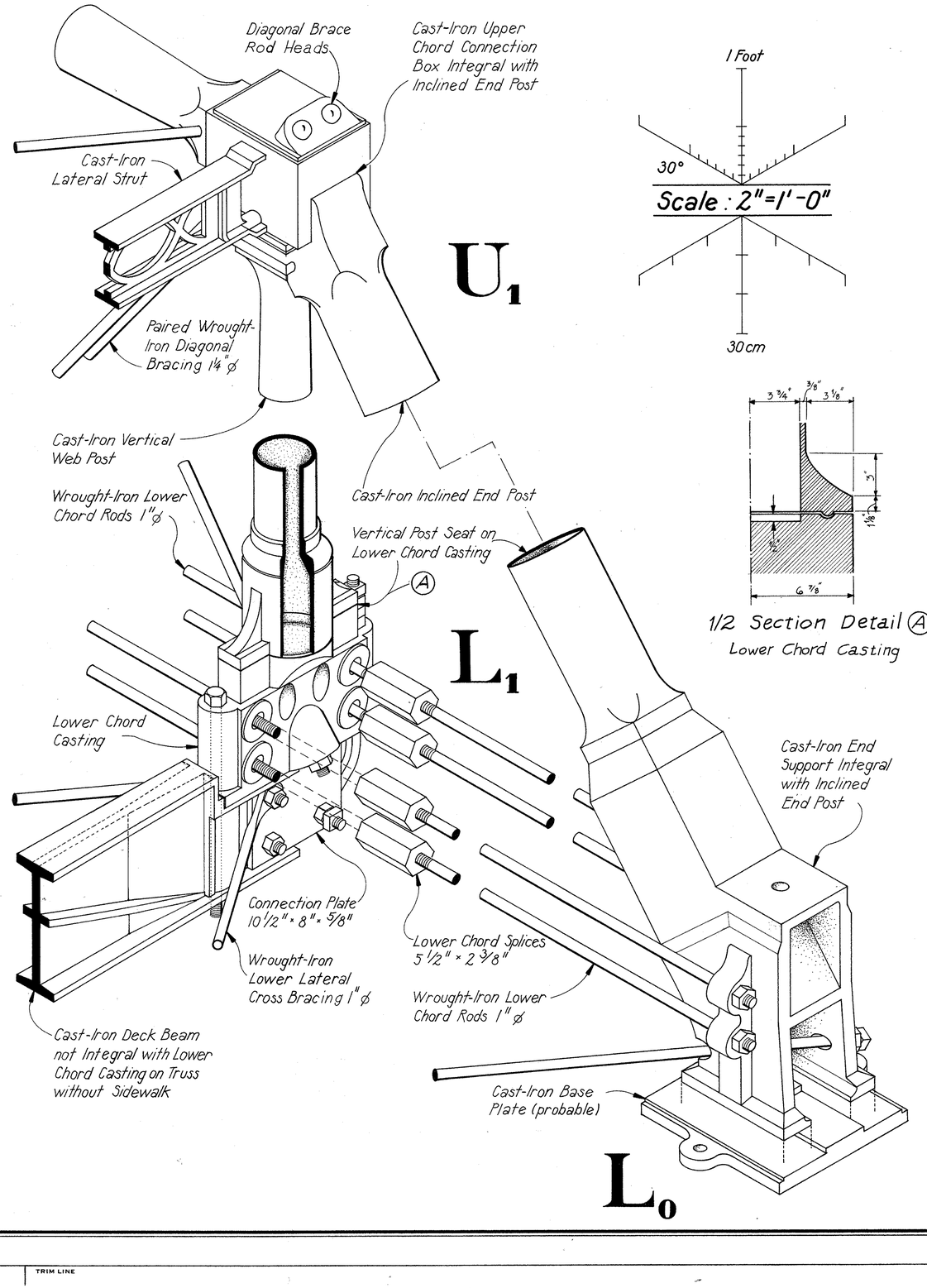
TRIM LINE





1/2 Section Detail (A)
Lower Chord Casting

CONNECTIONS

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SHEET 3 OF 3
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