

ALDRICH TOWING - PATH CHANGE BRIDGE

(Erie Canal, Bridge No. 35)

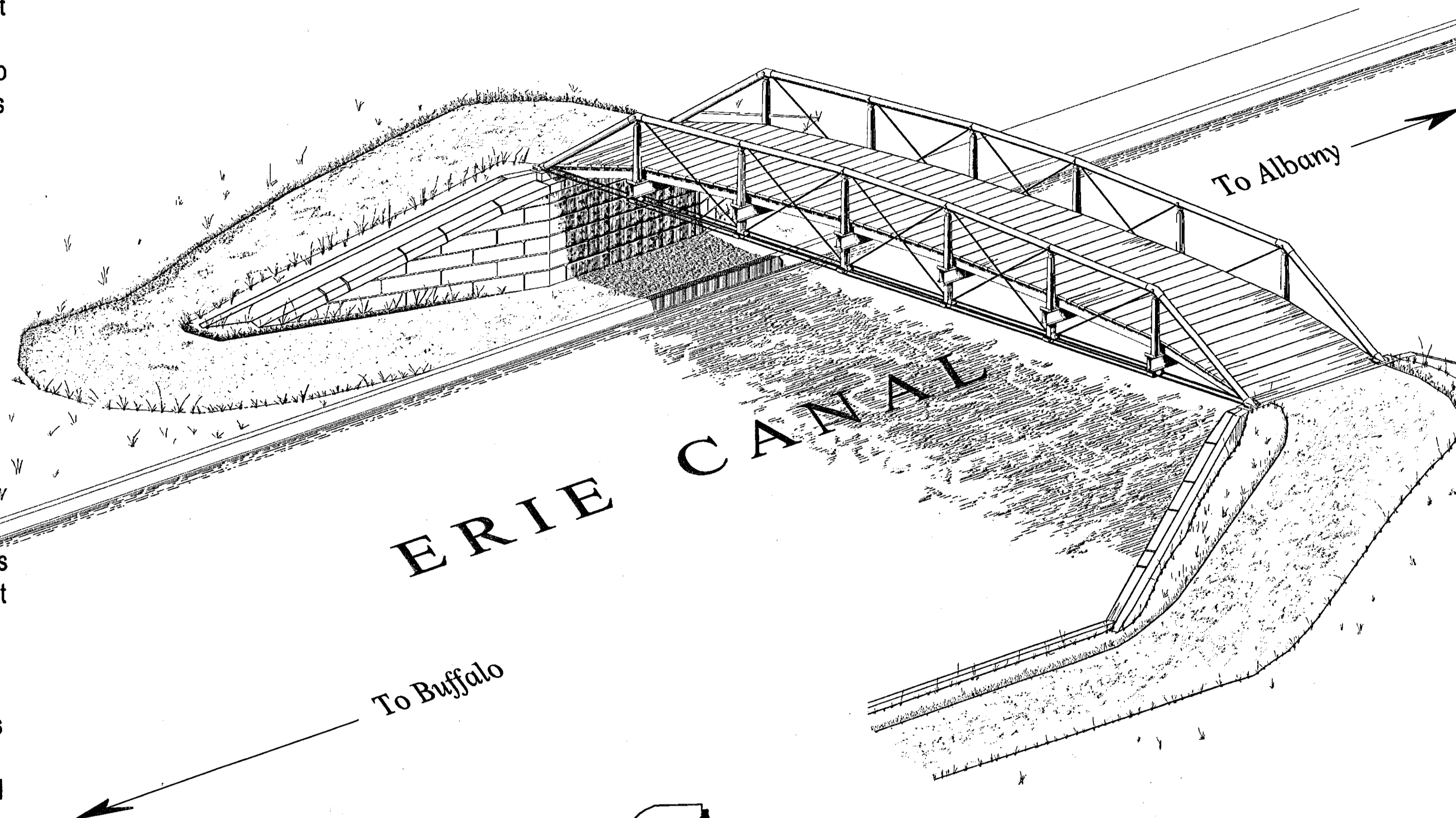
PALMYRA • 1858 • NEW YORK

The Aldrich Towing-path Change Bridge, a cast- and wrought-iron truss with a curved upper chord, was one of two spans built in 1858 by John Hutchinson of Troy, New York, for use over the enlarged Erie Canal at the Rochester weighlock. It was moved in 1880 to replace a timber change bridge that had collapsed at Palmyra, New York. In 1915 the bridge was sold to a local farmer when the Palmyra segment of the Erie Canal was abandoned during construction of the New York State Barge Canal. The bridge was donated to the Town of Macedon in 1997 for use as a historical monument, after high water and ice had washed it from its Ganargua Creek abutments the previous year.

The change bridge was a special-use structure designed to allow efficient passage of the towmaster, team, whiffle-tree, and tow lines from one side of the canal to the other. Most change bridges were combined with highway or farm bridges but a small number, including the Aldrich Change Bridge, were built as single-purpose structures.

The Aldrich Change Bridge is presently the oldest dated iron bridge in New York State and one of only two bridges known to survive the first enlargement of the Erie Canal. In addition to its importance as an artifact of one of the nation's earliest and most significant public works undertakings, it draws attention to one of the lesser known, and largely overlooked, designs of Squire Whipple, nineteenth-century America's foremost theoretician-practitioner of metal truss bridge design. Whipple's change bridge was a modification of his "trapezoidal truss" and it demonstrated the same understanding of load distribution and sizing of individual truss members observable in his better-known designs.

Fabricated in the Waterford Iron Works of George W. Eddy and erected by John Hutchinson of Troy, the Aldrich Change Bridge was a product of the rich industrial complex then flourishing at the confluence of the Mohawk and Hudson Rivers in eastern New York. Hutchinson had emerged as a prominent contractor for iron bridge superstructures during the years of the canal's enlargement, competing directly with Whipple himself. After his death, his son John D. Hutchinson was successful in his own right building iron bridges of Whipple design.



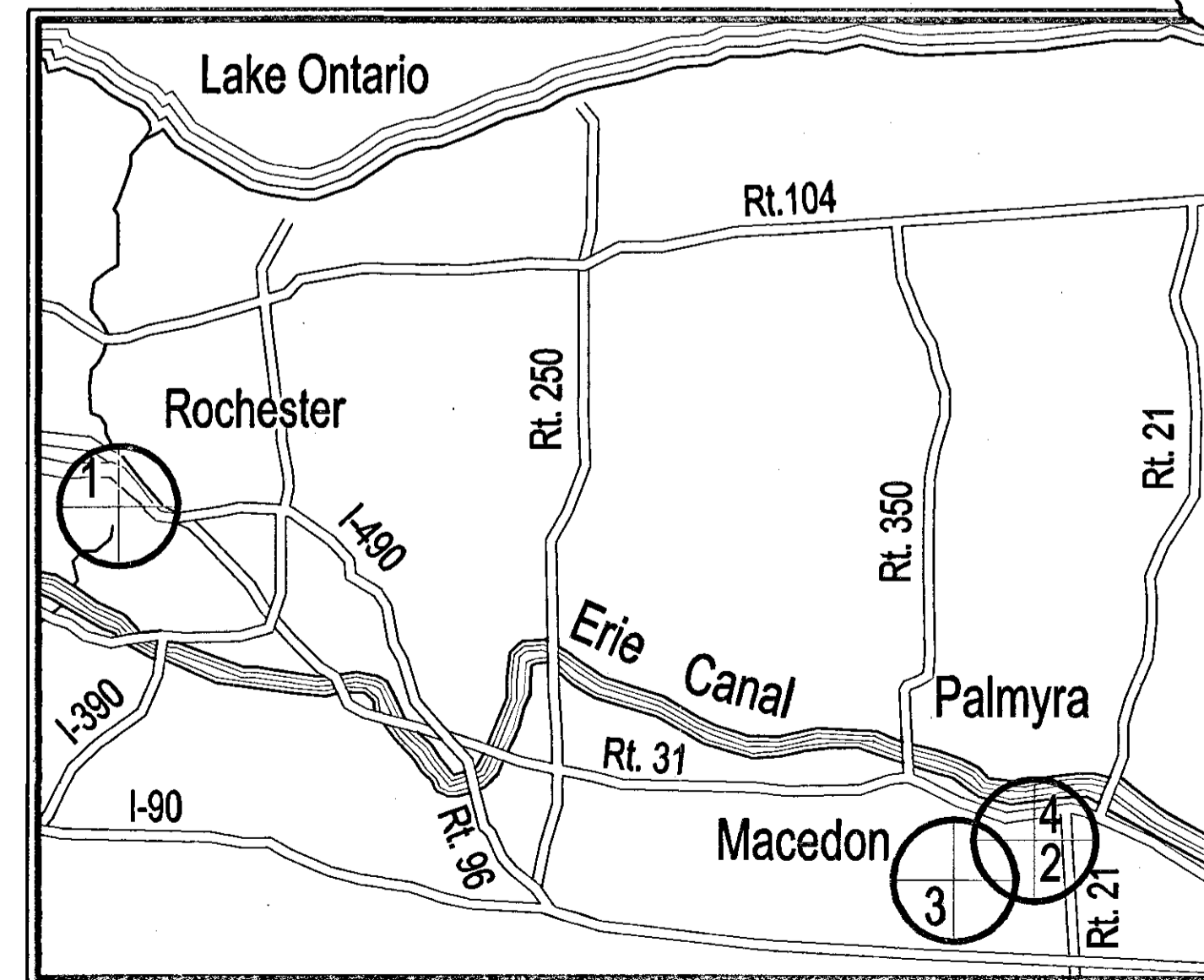
This recording project is part of a local effort to restore the Aldrich Change Bridge and relocate it to a local park. Measured drawings, prepared to Historic American Engineering Record (HAER) standards, are a critical first step in this process. Once completed, the drawings will serve as baseline documentation for the restoration effort and will be donated to the HAER collection at the Library of Congress. The Aldrich Change Bridge Recording Project was co-sponsored during the summer and fall of 1998 under the general direction of E. Blaine Cliver, Chief, HABS/HAER; State University of New York (SUNY) at Buffalo, School of Architecture and Planning, Bruno B. Freschi, Dean; Dennis A. Andrejko, Interim Chair; and Beth Tauke, Interim Associate Chair.

The Aldrich Change Bridge Restoration Committee, Jay Harding, Coordinator, extends thanks to Palmyra Mayor Pete Wilson, Wayne County Senior Planner Jim Coulombe, Canal Corridor Initiative (CCI) Administrator/Wayne County Stuart I. Brown, Bill Rider, and Trica Lynn for their enthusiasm, support, and assistance.

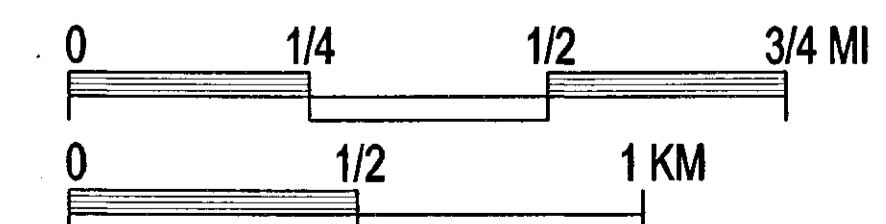
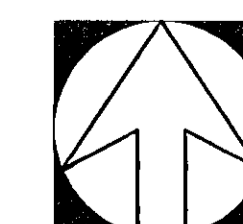
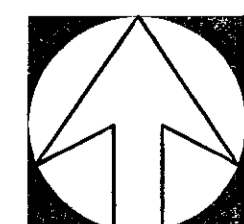
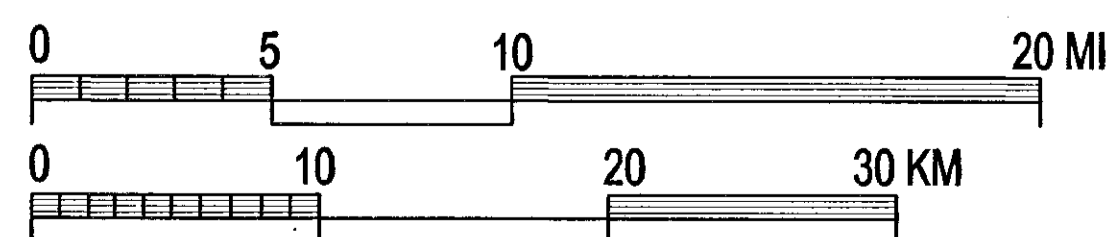
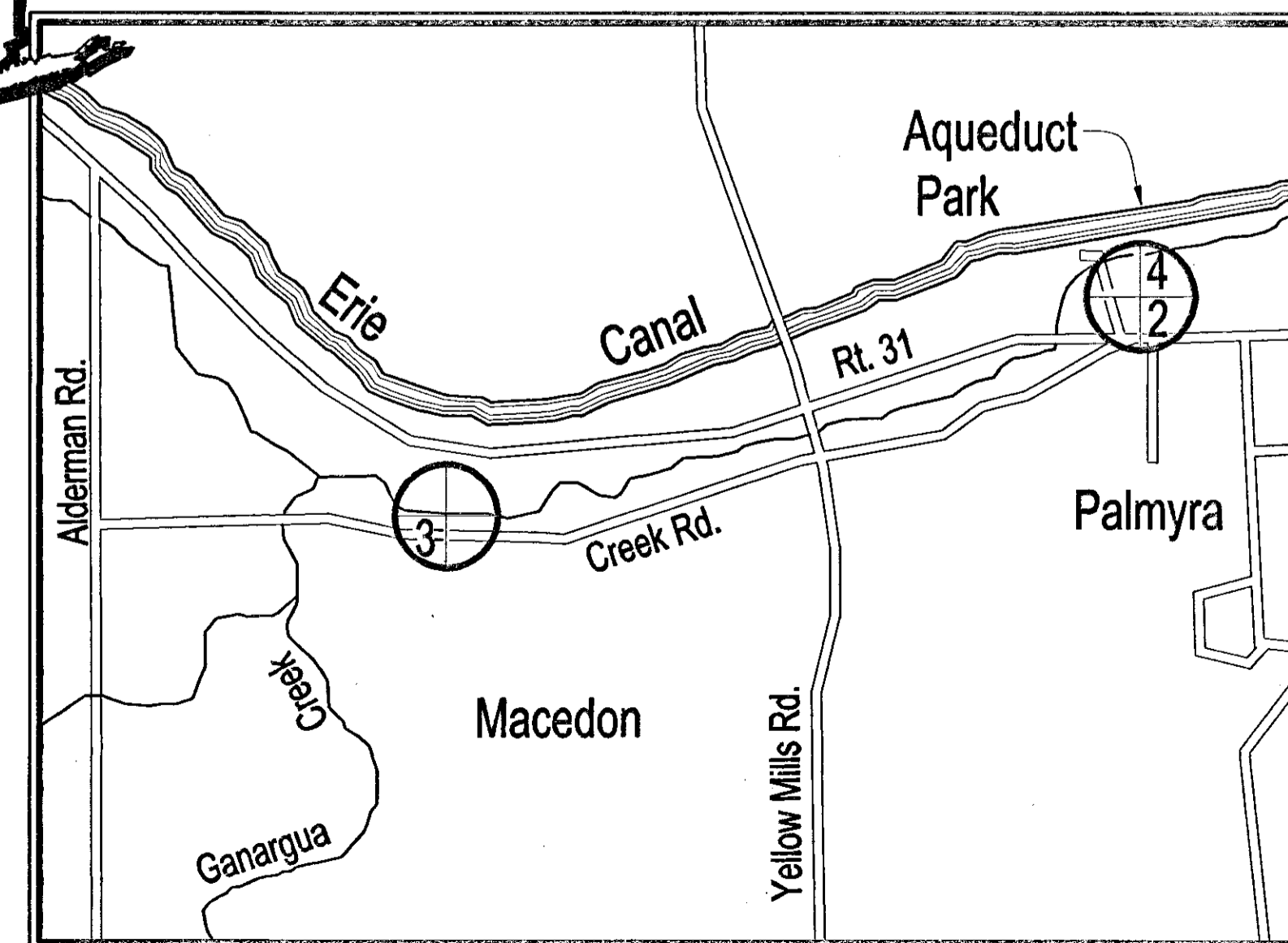
The fieldwork, measured drawings, historical report, and photographs were prepared under the direction of Eric DeLony, HAER chief. Architect Bradley Wales, SUNY Buffalo lecturer, led SUNY students Nicholas Cameron, Anthony Caputo, Jason Dobbs, and Michael Worden in the field measurement and drawing documentation work. The Project Historian was William Chamberlin, PE, Schenectady, New York. Jet Lowe, HAER photographer, produced the large-format photographs.

Funding for this project came from the Department of Housing and Urban Development (HUD) as a grant for the Canal Corridor Initiative program.

REGIONAL MAP



LOCAL MAP



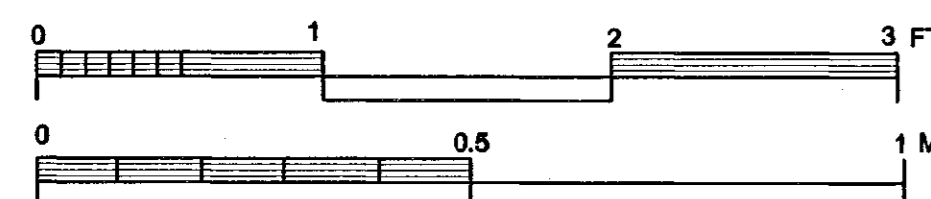
HISTORIC LOCATIONS:

1. Rochester spanning Erie Canal (1858)	12
2. Palmyra spanning Erie Canal (1880)	34
3. Macedon spanning Ganargua creek (1915)	
4. Palmyra Aqueduct Park (projected 2000)	

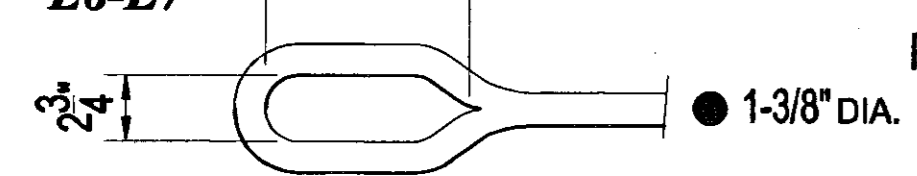
DELINEATED BY: MICHAEL A. WORDEN, 1998
 ALDRICH CHANGE BRIDGE RECORDING PROJECT
 NATIONAL PARK SERVICE
 UNITED STATES DEPARTMENT OF THE INTERIOR
 PALMYRA
 ERIE CANAL: ALDRICH TOWING-PATH CHANGE BRIDGE (1858)
 SPANNING THE NEW YORK STATE HERITAGE TRAIL, AQUEDUCT PARK
 WAYNE COUNTY
 NEW YORK
 SHEET 1 OF 4
 HISTORIC AMERICAN ENGINEERING RECORD
 NY-315
 LIBRARY OF CONGRESS

MEMBER SECTIONS

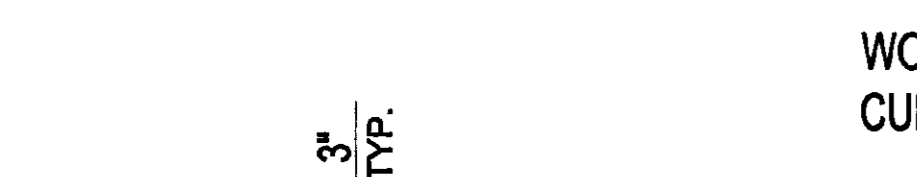
SCALE 1 1/2" = 1'-0"



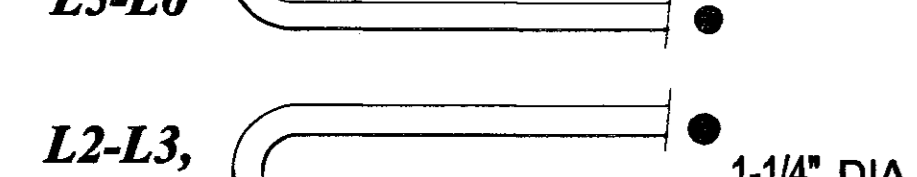
L0-L1, L6-L7 LOWER TENSION RODS



L1-L2, L5-L6 LOWER TENSION RODS



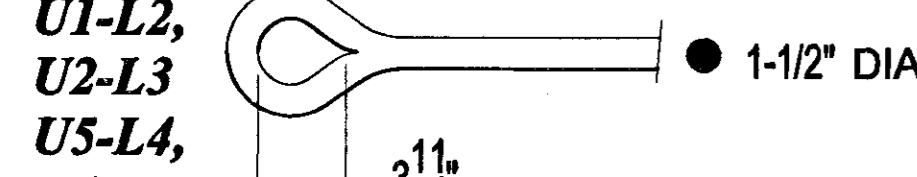
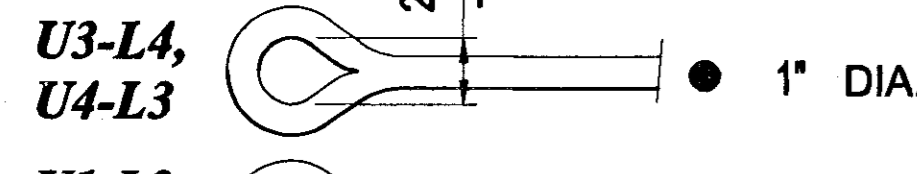
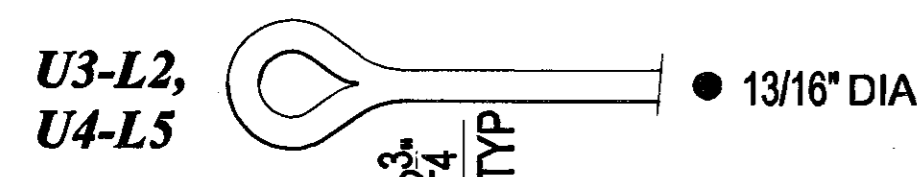
L2-L3, L4-L5 LOWER TENSION RODS



L3-L4 LOWER TENSION RODS



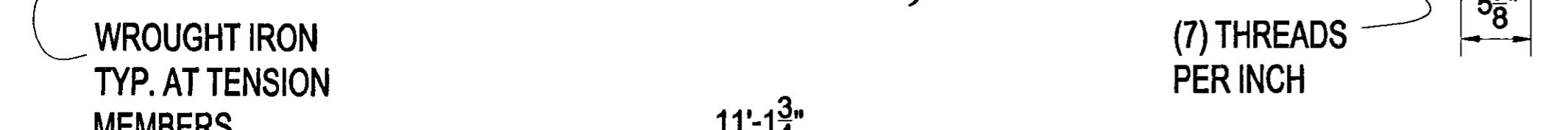
LOWER TENSION LOOPS



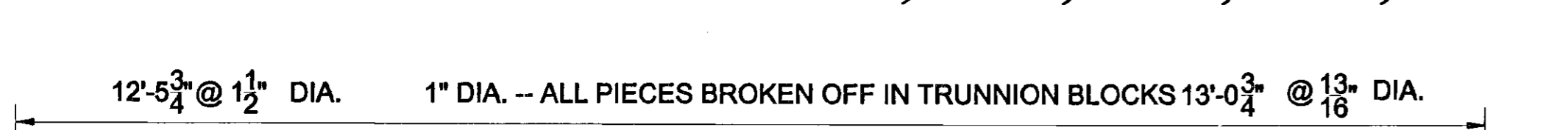
DIAGONAL TENSION RODS



LOWER TENSION RODS L0-L1, L6-L7



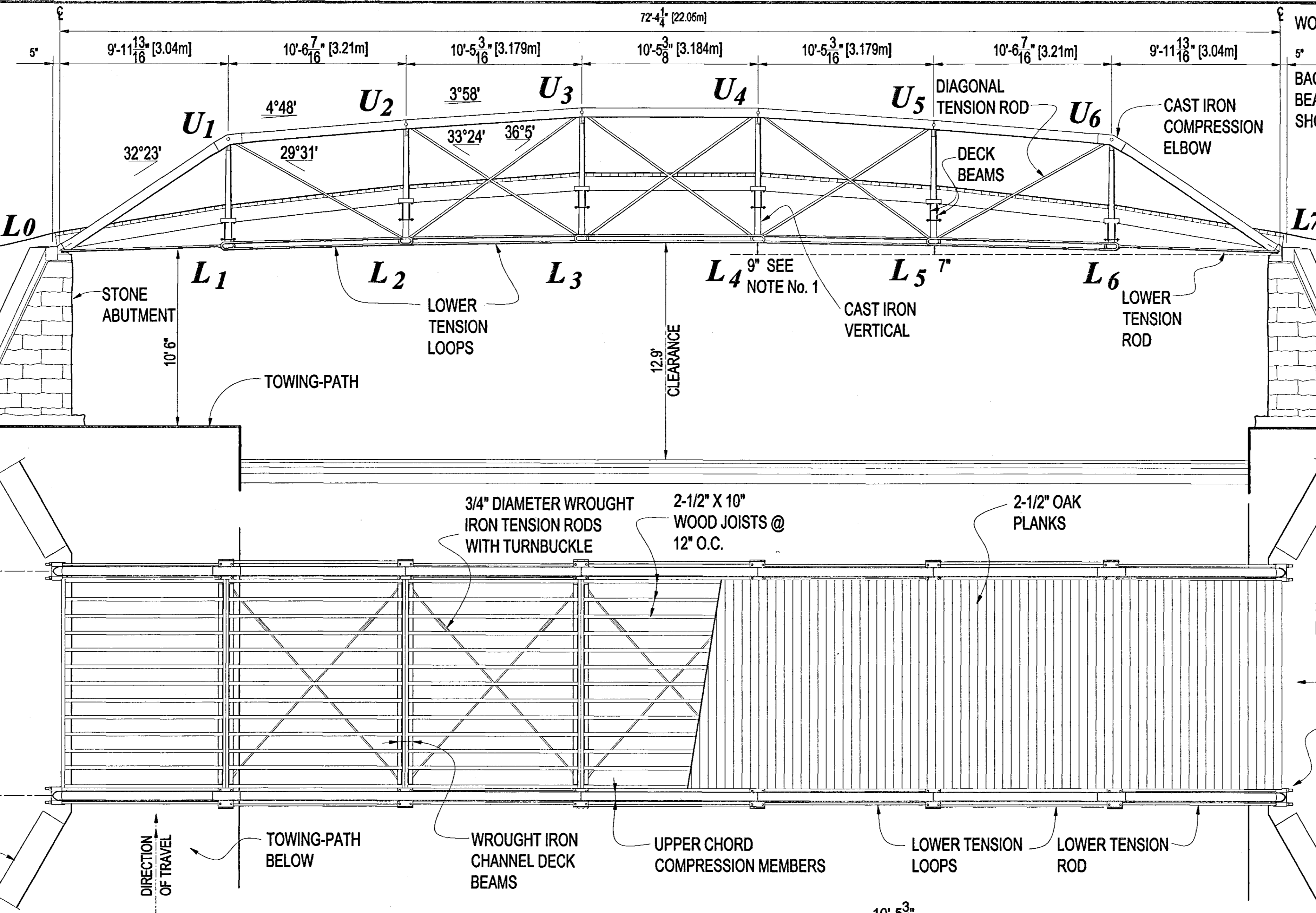
LOWER TENSION LOOPS L1-L2, L2-L3, L3-L4, L4-L5, L5-L6



DIAGONAL TENSION RODS TYPICAL U-L

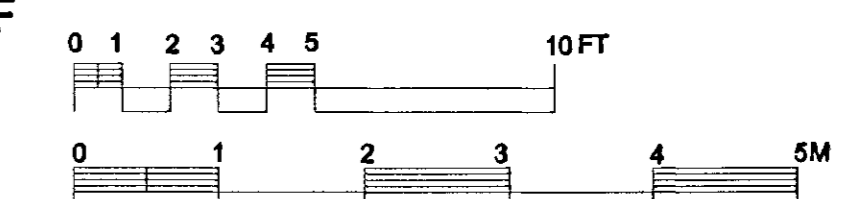


TENSION MEMBERS



ELEVATION / PLAN

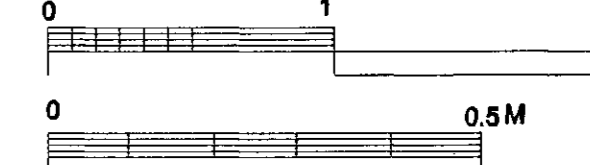
SCALE 1/4" = 1'-0"



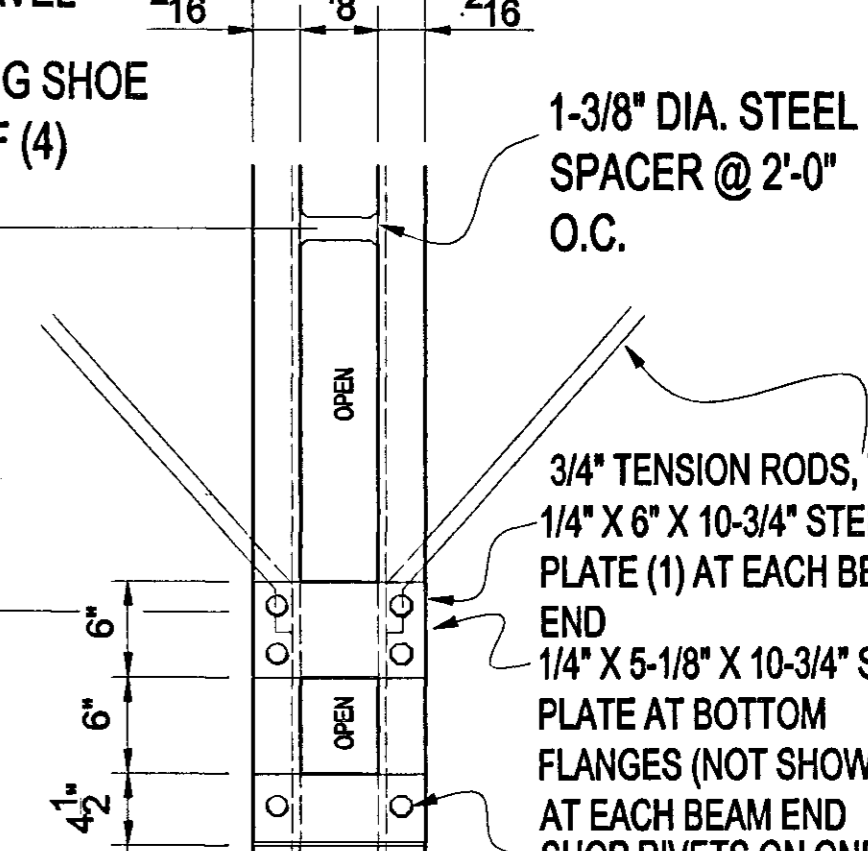
NOTE: 1. PER 1896 INSPECTION REPORT OF THE ERIE CANAL WESTERN DIVISION/NYS ARCHIVE RECORD SERIES No. B1211-85: 16 INCHES "END PANEL DEPRESSED."

TURNBUCKLES

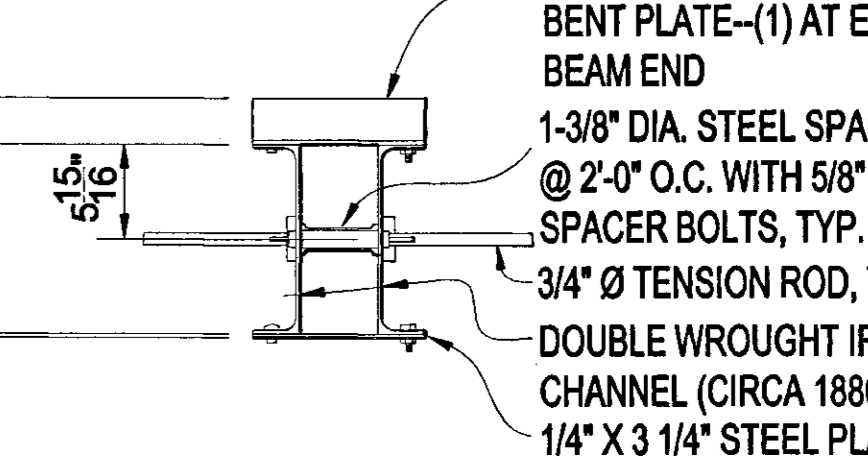
SCALE 1 1/2" = 1'-0"



TOP VIEW



END VIEW

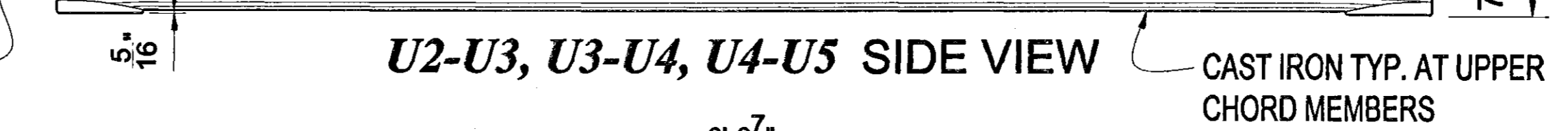


DECK BEAMS

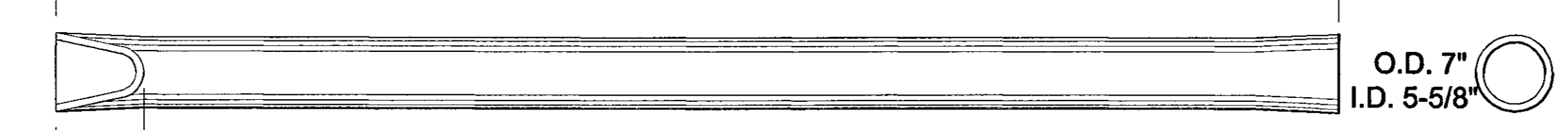


SCALE 1" = 1'-0" MEMBER DETAILS

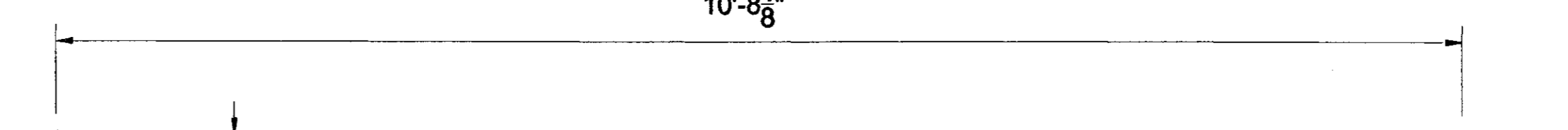
U2-U3, U3-U4, U4-U5 SIDE VIEW



U1-U2, U5-U6 BOTTOM VIEW

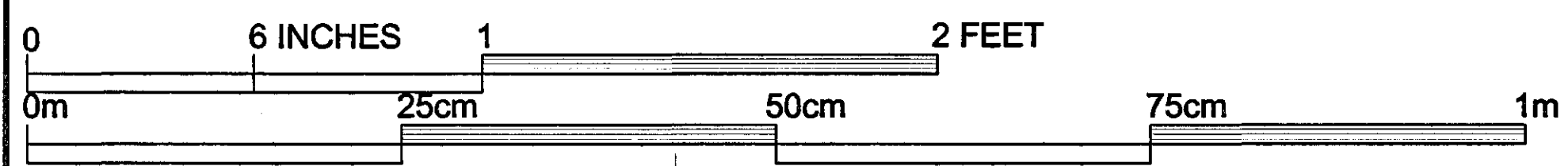


L0-U1, U6-L7 SIDE VIEW



UPPER CHORD MEMBERS

DELIMITED BY: JASON M. DOBBS, 1998
ALDRICH CHANGE BRIDGE RECORDING PROJECT
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR
PALMYRA
ERIE CANAL: ALDRICH TOWING-PATH CHANGE BRIDGE (1858)
SPANNING THE NEW YORK STATE HERITAGE TRAIL, AQUEDUCT PARK
WAYNE COUNTY
NEW YORK
SHEET 2 OF 4
HISTORIC AMERICAN ENGINEERING RECORD
NY-315



SCALE: 3" = 1'-0"
 ALL METRIC COVERSIONS SHOWN
 IN CENTIMETERS (CM) UNLESS
 INDICATED OTHERWISE.

(2) 5/8" Ø WROUGHT
 IRON STRAPS

2 1/4" Ø
 WROUGHT
 IRON PIN
 (±81/4LBS.),
 TYPICAL

NOTE:
 UPPER CHORD
 MEMBERS NOT
 SHOWN

CAST IRON UPPER
 CHORD MEMBER
 TYP. (SIDE VIEW
 SHOWN DASHED)

CAST IRON
 VERTICAL
 MEMBER

CAST IRON
 VERTICAL
 MEMBER

SHOP-RIVETS ON
 ONE SIDE AND 5/8"
 Ø FIELD BOLTS ON
 OTHER SIDE - SEE
 SHEET No.2

3/4" Ø HOLE

DECK BEAM NOT
 SHOWN

LOWER TENSION
 LOOP

DECK
 BEAM SEAT

TRUNNION
 BLOCK,
 TYP.

FRONT VIEW

SIDE VIEW

L1

VERTICALS

LOWER TENSION
 ROD, TYP.

PLAN

SIDE

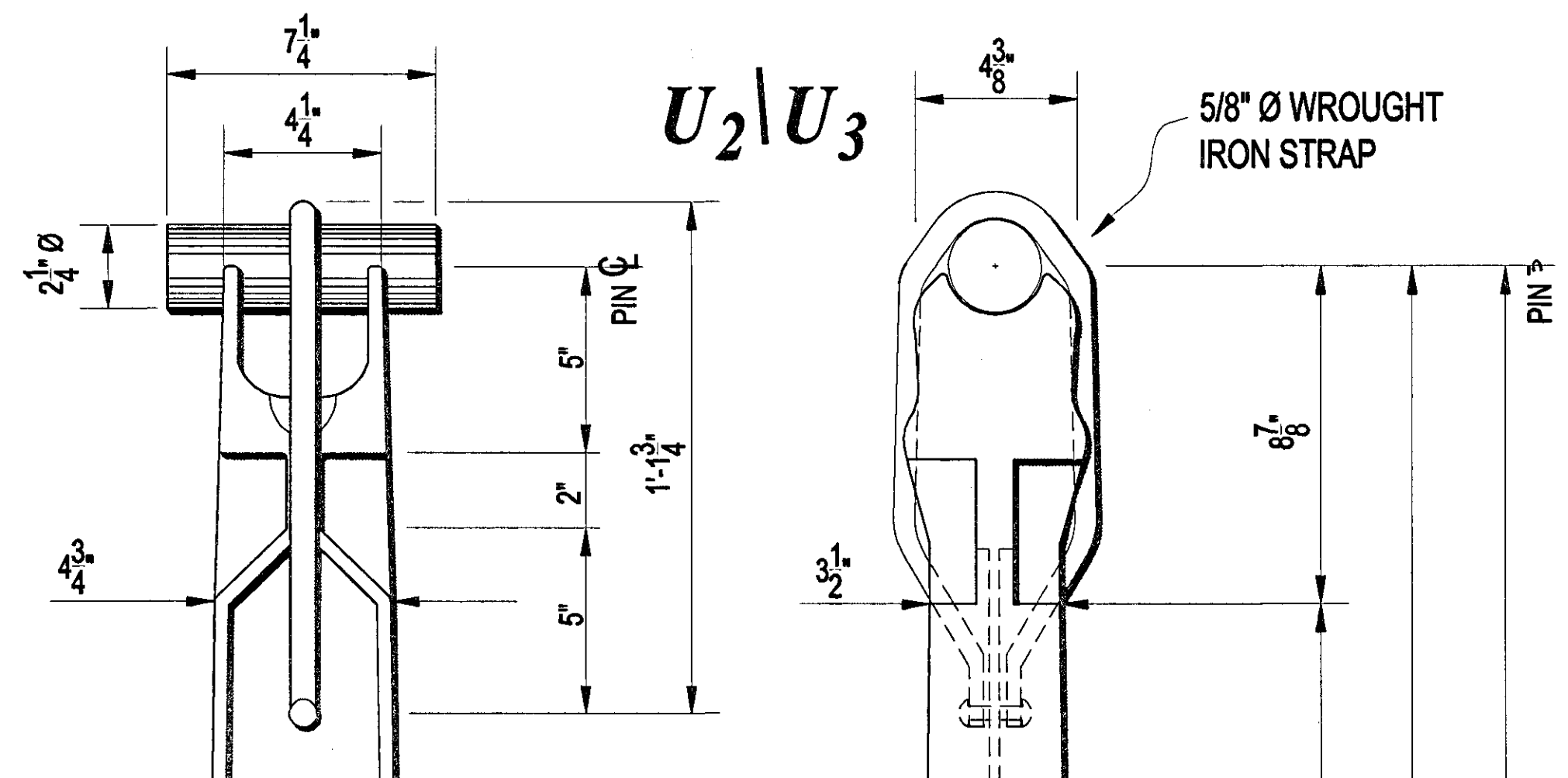
SECTION

BACK

FRONT

BEARING SHOE

CAST IRON BEARING
 SHOE, TYP. OF (4)



U1

PLAN VIEW

U2/U3

5/8" Ø WROUGHT
 IRON STRAP

NOTE:
 UPPER CHORD
 MEMBER NOT SHOWN
 IN FRONT VIEW

NOTE:
 PLANKING SHOWN DASHED

NOTE:
 FLANGE FILLET VARIES.
 TYPICAL SECTION
 SHOWN.

DECK
 JOIST

3/4" Ø HOLE

DECK BEAM SEAT
 AT L3

PLATE @ DECK
 BEAM. SEE SHEET
 #2, TYP.

DECK BEAM SEAT
 AT L2 SHOWN
 DASHED

DECK BEAM NOT
 SHOWN

DIAGONAL TENSION
 ROD SHOWN
 DASHED

FRONT VIEW

SIDE VIEW

L2/L3

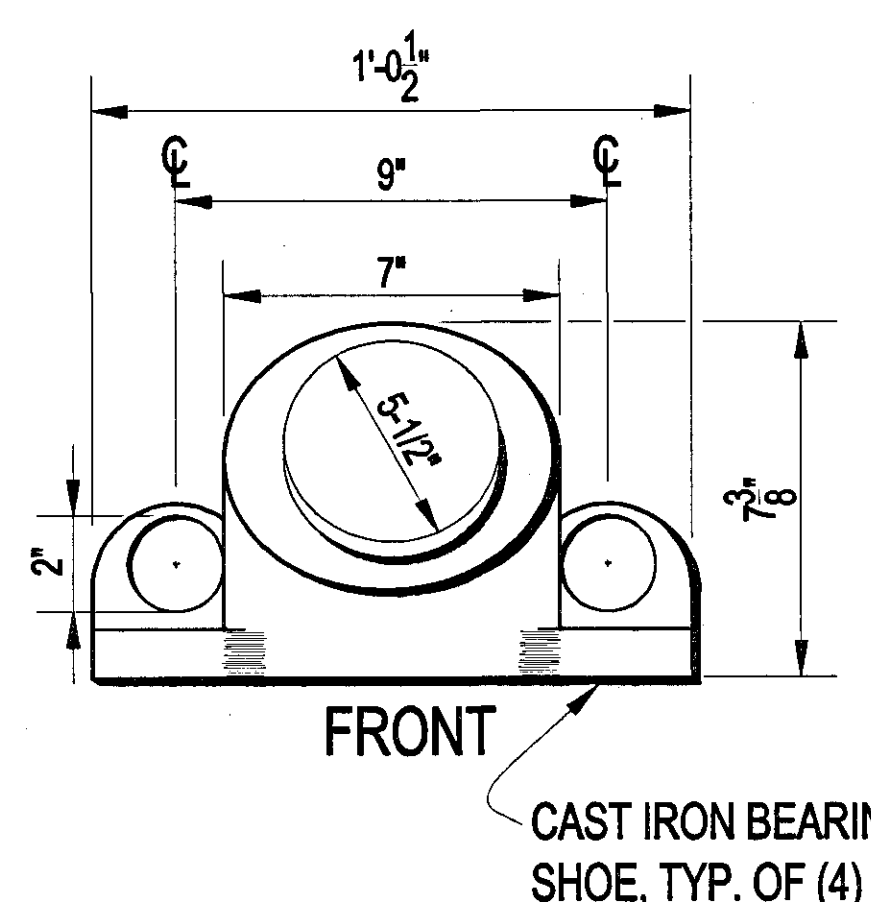
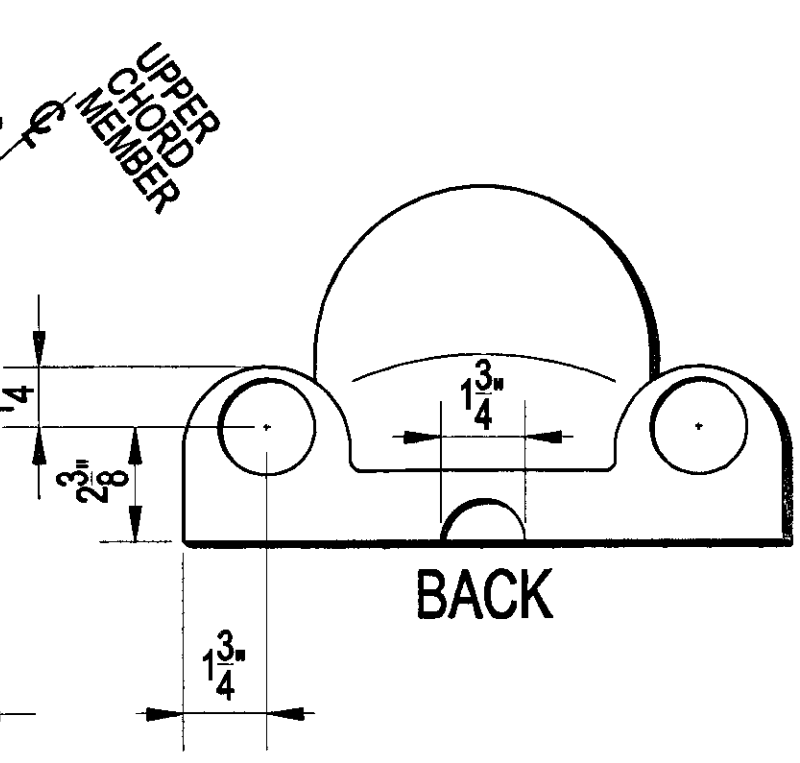
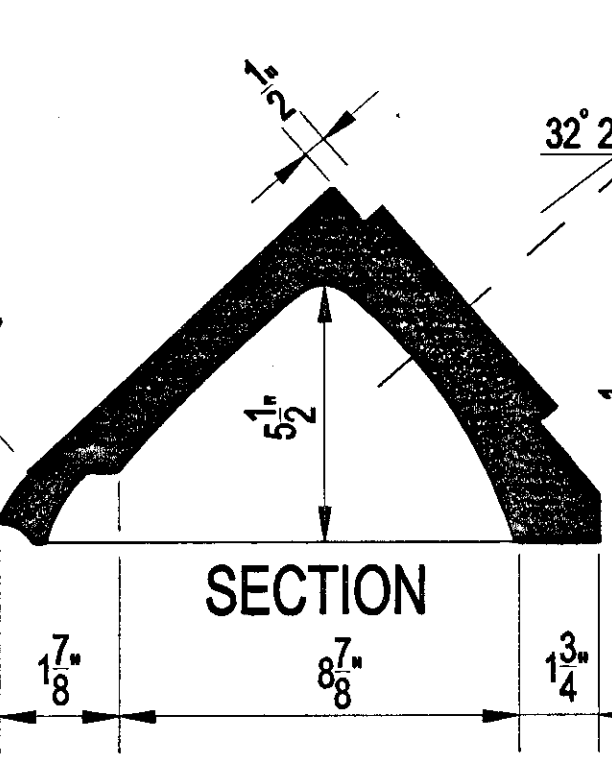
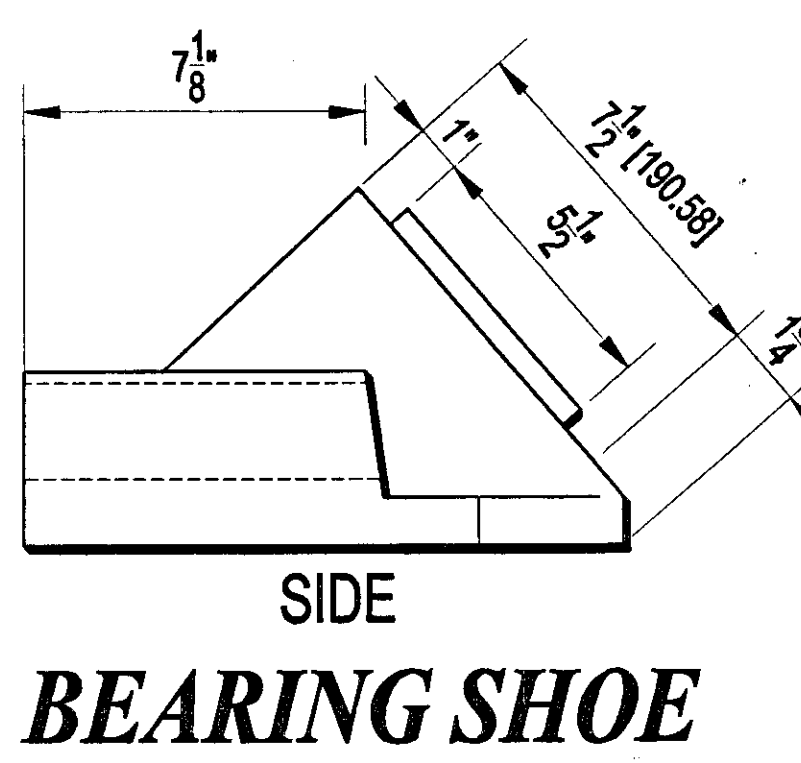
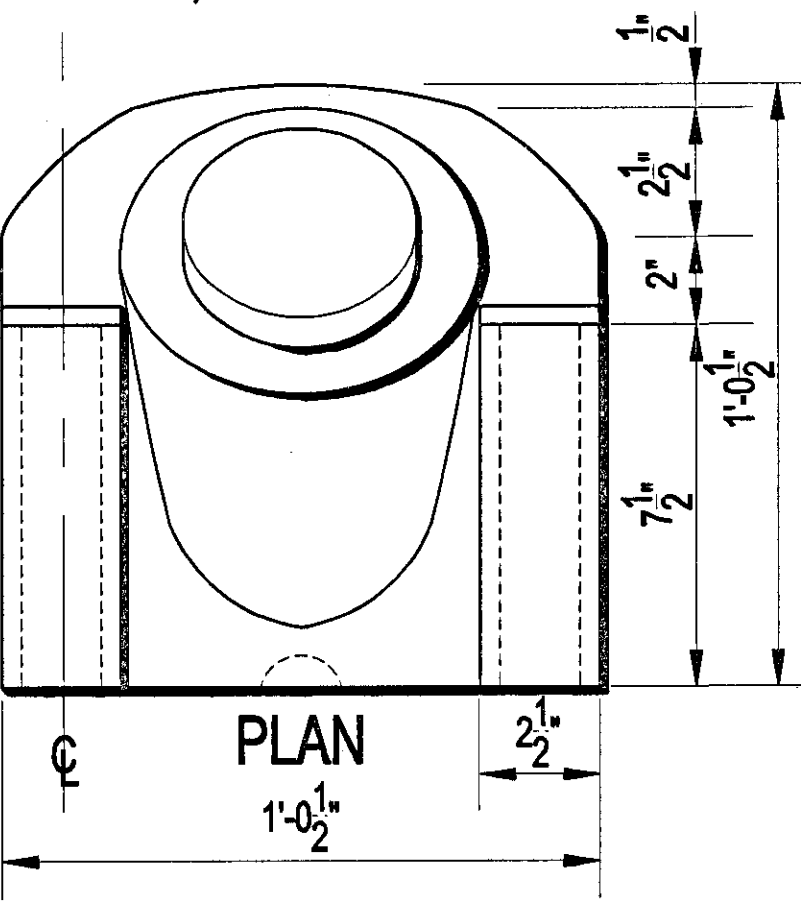
LOWER TENSION
 LOOPS SHOWN
 DASHED

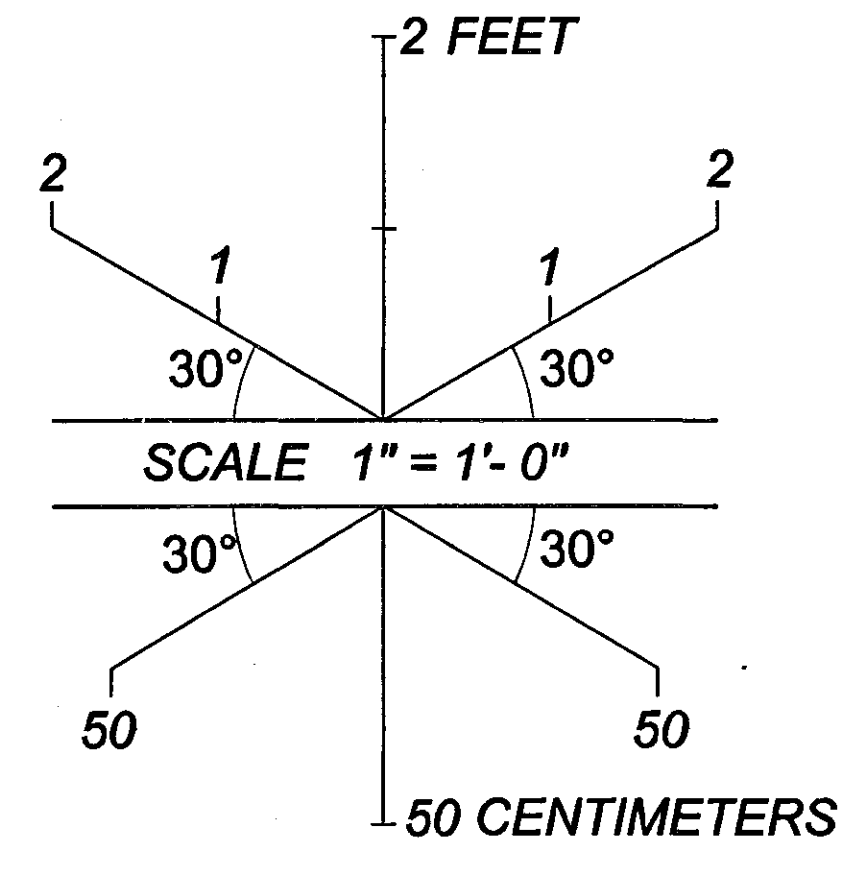
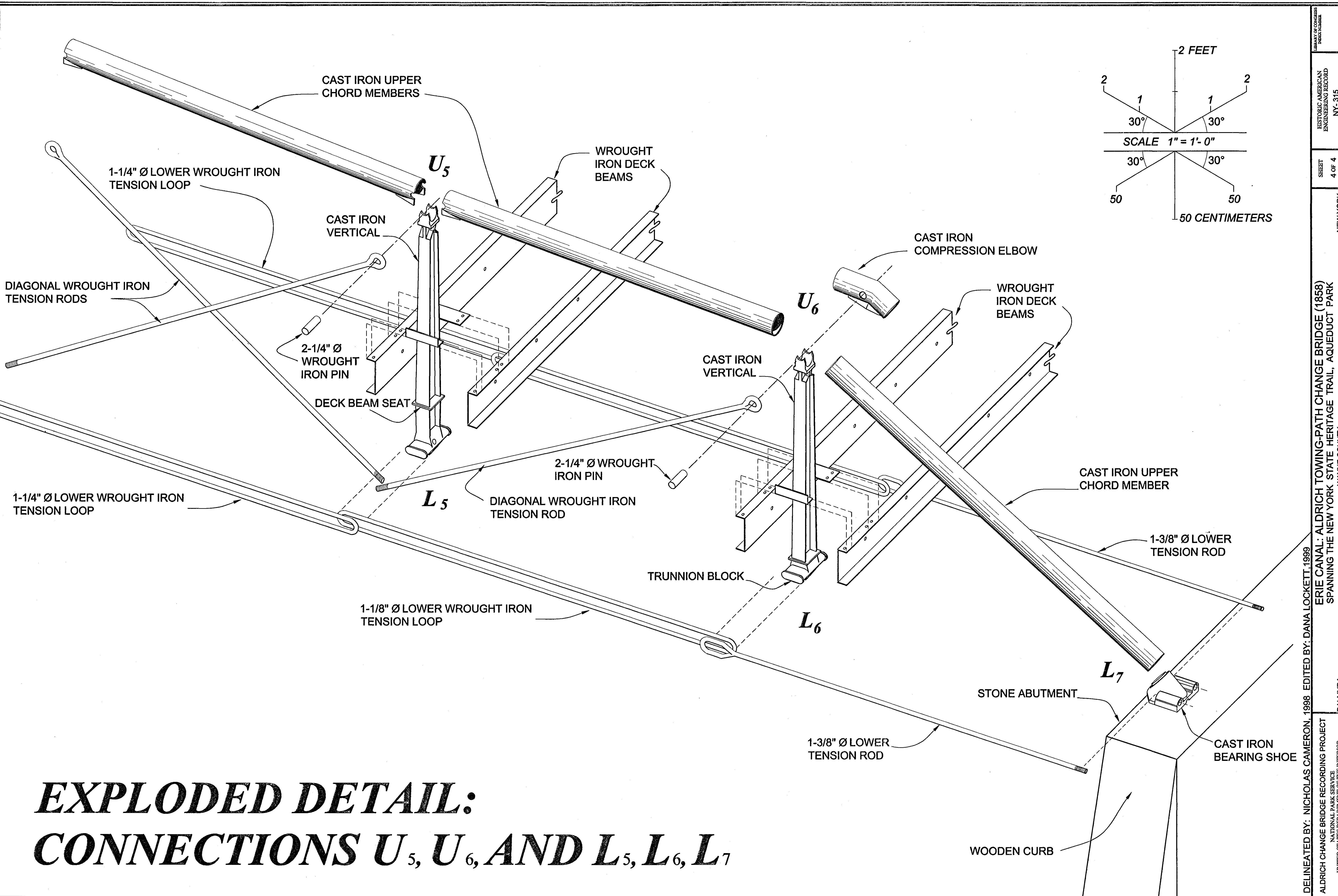
TRUNNION
 BLOCK, TYP.

NOTE:
 LOWER TENSION
 LOOPS NOT SHOWN

DIAGONAL TENSION
 ROD, TYP.

BOTTOM VIEW





**EXPLODED DETAIL:
CONNECTIONS U₅, U₆, AND L₅, L₆, L₇**

DELINEATED BY: NICHOLAS CAMERON, 1998 EDITED BY: DANA LOCKETT, 1999
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