

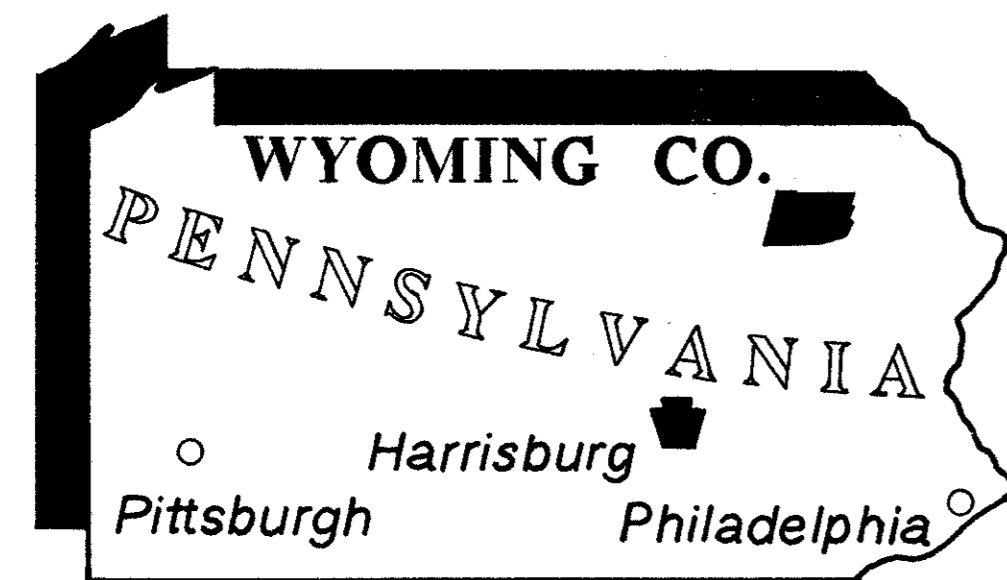
# NICHOLSON TOWNSHIP LENTICULAR BRIDGE

WYOMING COUNTY, PENNSYLVANIA 1881

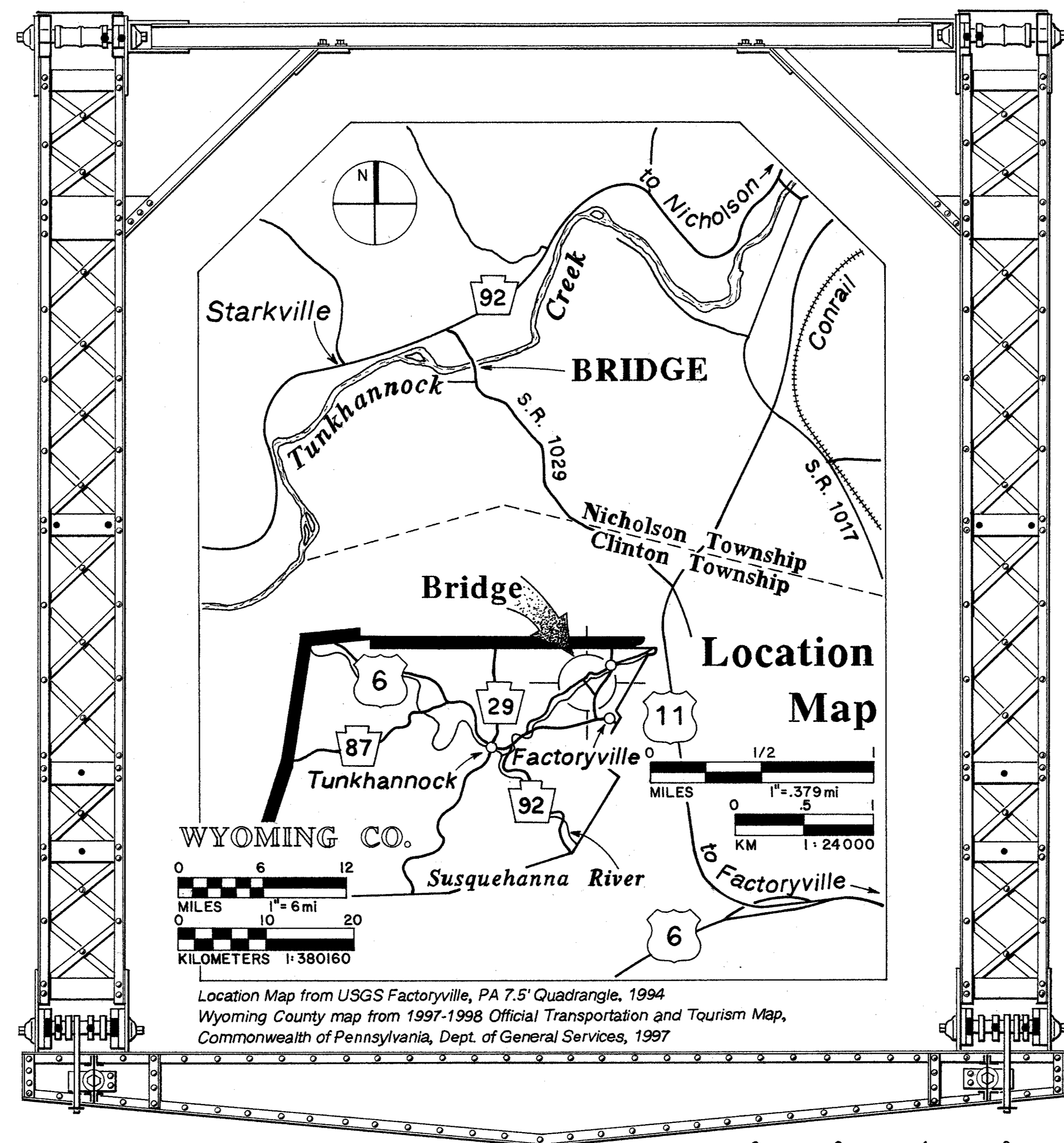
In 1881, the Corrugated Metal Co., later renamed the Berlin Iron Bridge Co., East Berlin, Connecticut, was awarded the contract for a bridge across Tunkhannock Creek for \$20 per foot. The bridge connected the Nicholson Township seat at Starkville, then Peirceville, with farms on the far side of the creek and with Factoryville, an important town in nearby Clinton Township.

The bridge is a fine example of the company's trademark lenticular truss fabricated under W. O. Douglas's 1878 patent. Of special note are the fabrication details of the pin connections at the end post and on the upper chord used to create the distinctive lens-shaped profile. Early examples such as the Nicholson Township Lenticular used wide end-posts to accommodate the top chord and blacksmith work to bend the plates of the top chord. Later bridges used more expensive mitered splices to reduce material and increase the structural efficiency of the design.

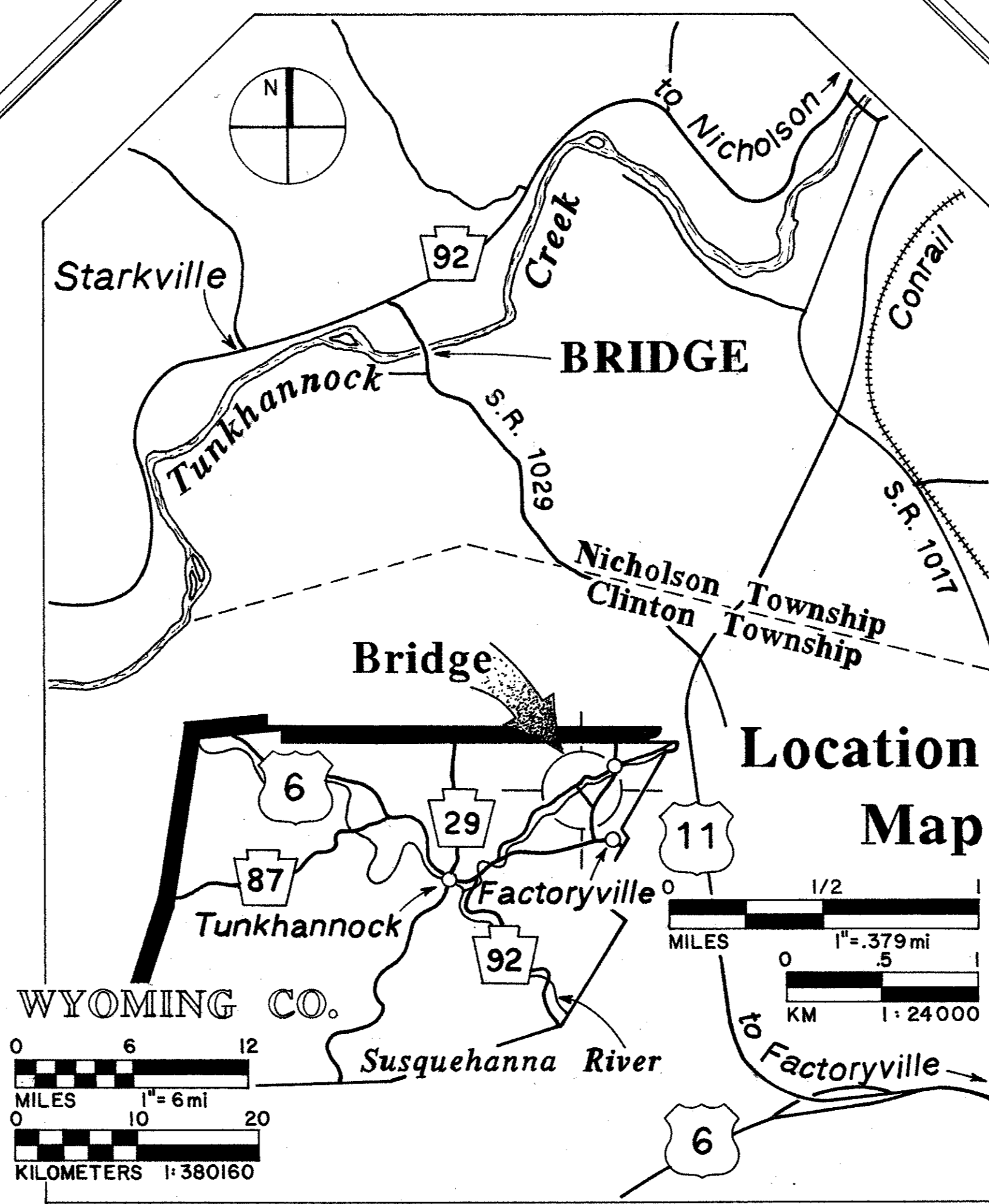
The Nicholson Township Lenticular is one of about 6 lenticulars remaining in Pennsylvania and one of about 50 in the United States. It was placed on the National Register of Historic Places in 1986.



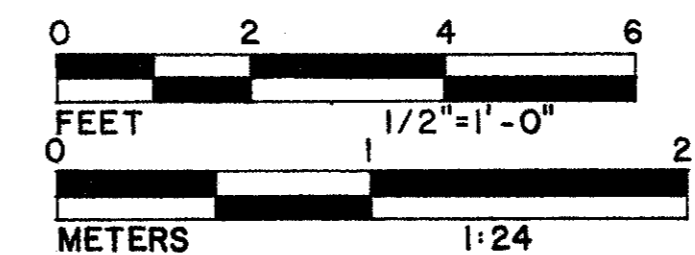
UTM Reference: 18/431400/4606000



**SECTION**  
Looking south at midpoint



Location Map from USGS Factoryville, PA 7.5' Quadrangle, 1994  
Wyoming County map from 1997-1998 Official Transportation and Tourism Map, Commonwealth of Pennsylvania, Dept. of General Services, 1997

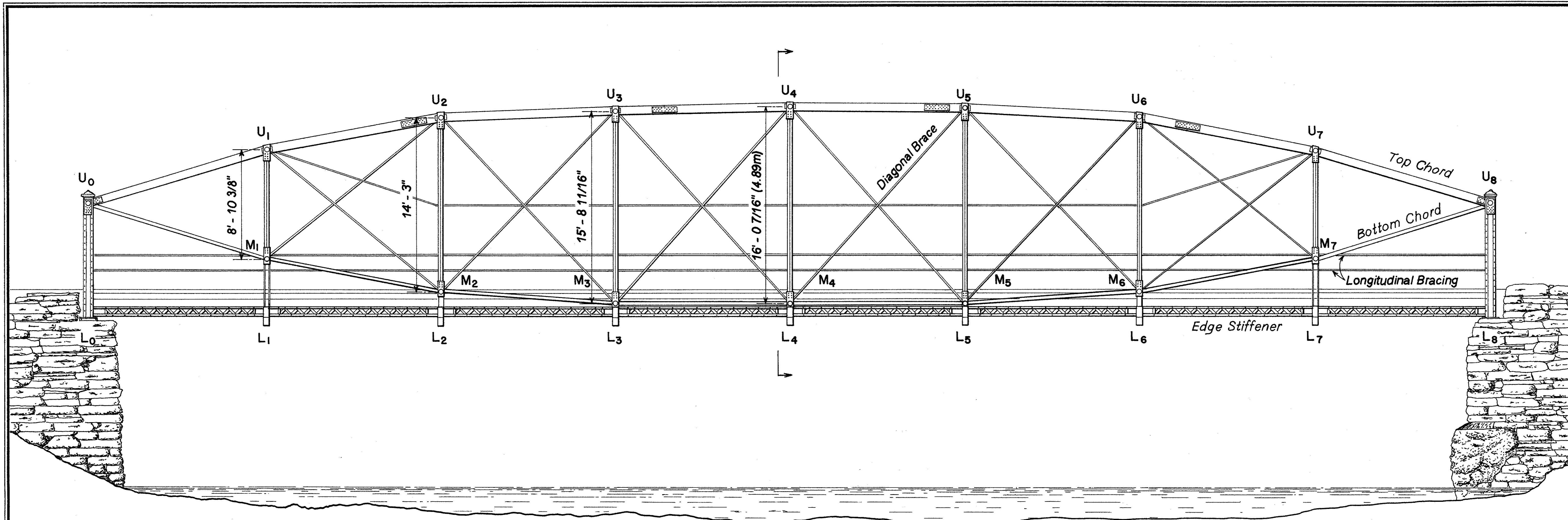


The Pennsylvania Historic Bridges Recording Project - I is a part of the Historic American Engineering Record (HAER), a long-range program of documenting historically significant engineering, industrial, and maritime sites in the United States. The HAER program is administered by the National Park Service, U.S. Department of the Interior. The Pennsylvania Historic Bridges Recording Project - I was co-sponsored during the summer of 1997 by HABS/HAER under the general direction of E. Blaine Cliver, Chief; the Pennsylvania Department of Transportation, Bureau of Environmental Quality, Wayne W. Kober, Director; and the Pennsylvania Historical and Museum Commission, Brent D. Glass, Executive Director and State Historic Preservation Officer.

The fieldwork, measured drawings, historical reports, and photographs were prepared under the direction of Eric DeLony, Chief of HAER. The team consisted of Robert W. Grzywacz, Architectural Supervisor (Architect, New Haven, CT); Slavica Bubic (ICOMOS, Republic of Croatia), Jonathan Cherry (Rice University), Michael Falser (ICOMOS, Austria), and Elizabeth Milnarik (University of Illinois, Urbana - Champaign), Architects; Dr. Mark M. Brown (Pittsburgh, PA), Project Historian; J. Philip Gruen (University of California, Berkeley), Dr. David Rotenstein (Pittsburgh, PA), and Blythe Semmer (Middle Tennessee State University), Historians; Dr. Dario Gasparini, P.E. (Case Western University) and Stephen Buonopane (Cornell University), Engineers, and Joseph Elliott, Photographer.

DELINEATED BY: JONATHAN CHERRY 1997  
 PENNSYLVANIA HISTORIC BRIDGES RECORDING PROJECT - I  
 UNITED STATES DEPARTMENT OF THE INTERIOR  
 NICHOLSON VIC.  
 WYOMING COUNTY  
 SPANNING TUNKHANNOCK CREEK AT S. R. 1029  
 NICHOLSON TOWNSHIP LENTICULAR BRIDGE - 1881  
 SHEET 1 OF 4  
 HISTORIC AMERICAN ENGINEERING RECORD  
 PA - 466

IF REPRODUCED, PLEASE CREDIT: HISTORIC AMERICAN ENGINEERING RECORD, NATIONAL PARK SERVICE, NAME OF DELINEATOR, DATE OF THE DRAWING

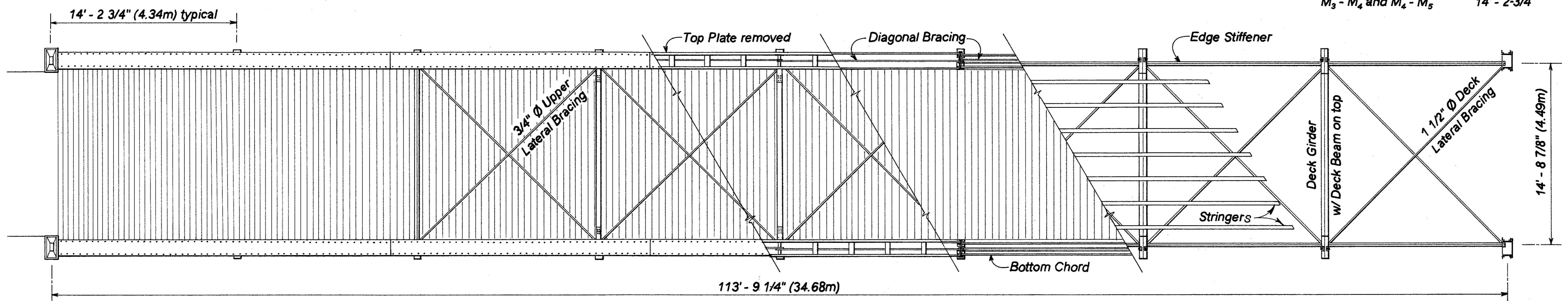


# WEST ELEVATION

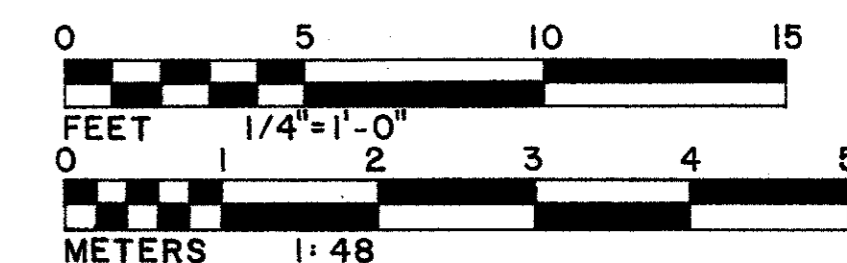
2" x 4" wooden decking, 6" "I" Stringers, and 7" "I" Deck Beams are not original. Original deck system is unknown.

Bottom Chord consists of a series of 2 parallel 3" x 1 1/8" eyebars with pin to pin lengths:

$U_0 - M_1$ and $M_7 - U_8$	15' - 4"
$M_1 - M_2$ and $M_6 - M_7$	14' - 5"
$M_2 - M_3$ and $M_5 - M_6$	14' - 3"
$M_3 - M_4$ and $M_4 - M_5$	14' - 2-3/4"



# PLAN



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 UNITED STATES DEPARTMENT OF THE INTERIOR  
 NICHOLSON VIC.  
 NICHOLSON TOWNSHIP LENTICULAR BRIDGE - 1881  
 SPANNING TUNKHANNOK CREEK AT S.R.1029  
 WYOMING COUNTY  
 PENNSYLVANIA  
 SHEET 2 of 4  
 HISTORIC AMERICAN ENGINEERING RECORD  
 PA - 468

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# ENDPOST DETAIL

## CAST IRON CAP

1'-11" x 11-7/8" x 1'-0" OVERALL DIMENSION

$U_0$

## TOP CHORD

(2) CHANNELS 8" x 2" x 1-1/8"  
(1) PLATE 16" x 5/16"  
4" x 1/4" HORIZONTAL STRAPPING

3-1/2"  $\emptyset$  PIN

COUNTER-SUNK RIVETS

4-1/2"  $\emptyset$  SPOOL WITH 5-1/2" COLLAR

(2) 6"  $\emptyset$  PIN CAP

1-1/8"  $\emptyset$  Bolt

## BOTTOM CHORD

(2) EYEBARS 3" x 1-1/8"

## END POSTS

(4) ANGLES 2" x 2" x 1/4"  
(2) PLATES 9-1/4" x 5/16"  
(1) PLATE 21" x 1/4"  
(5) HORIZONTAL STRAPS 4" x 1/2"  
2'-0" CENTER TO CENTER  
(1) BASE HORIZONTAL STRAP 10" x 1/2"

(2) 3/4"  $\emptyset$  LONGITUDINAL BRACING

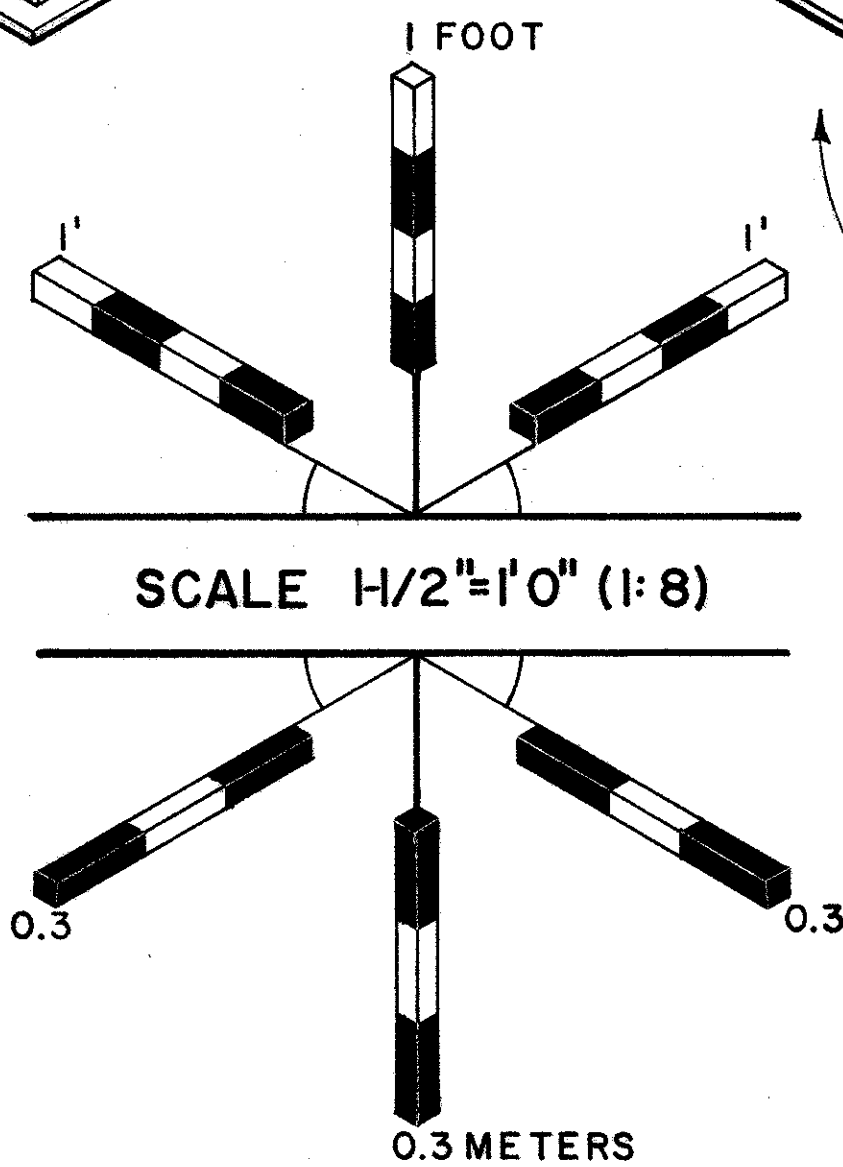
## ROLLER NEST

(2) 2'-1/4" x 1'-4" x 5/8" CAST IRON PLATES  
WITH 2" x 5/8" ROLLER GUIDES  
2-1/4"  $\emptyset$  ROLLERS  
ROLLERS NOT FULLY VISIBLE AT BRIDGE.  
ACTUAL NUMBER AND DIMENSIONS  
DEDUCED FROM EXTERIOR DIMENSIONS  
AND PATENT DRAWINGS.  
(2) 5/8"  $\emptyset$  RODS  
(2) 1-3/4" x 3/8" x 15-1/4" RETAINER PLATES  
INCLUDE BEARING HOLES FOR ROLLERS

## COMPRESSION STRUT

(4) ANGLES 2" x 2" x 1/8"  
1-7/8" x 1/4" LACING BARS

$L_0$



$L_0$

DELINEATED BY: ELIZABETH MILNARIK 1997

PENNSYLVANIA HISTORIC BRIDGES  
RECORDING PROJECT - 1  
NATIONAL PARK SERVICE  
UNITED STATES DEPARTMENT OF THE INTERIOR

NICHOLSON TOWNSHIP LENTICULAR BRIDGE - 1881  
SPANNING TUCKHANNOK CREEK AT S.R. 1029

NICHOLSON VIC.

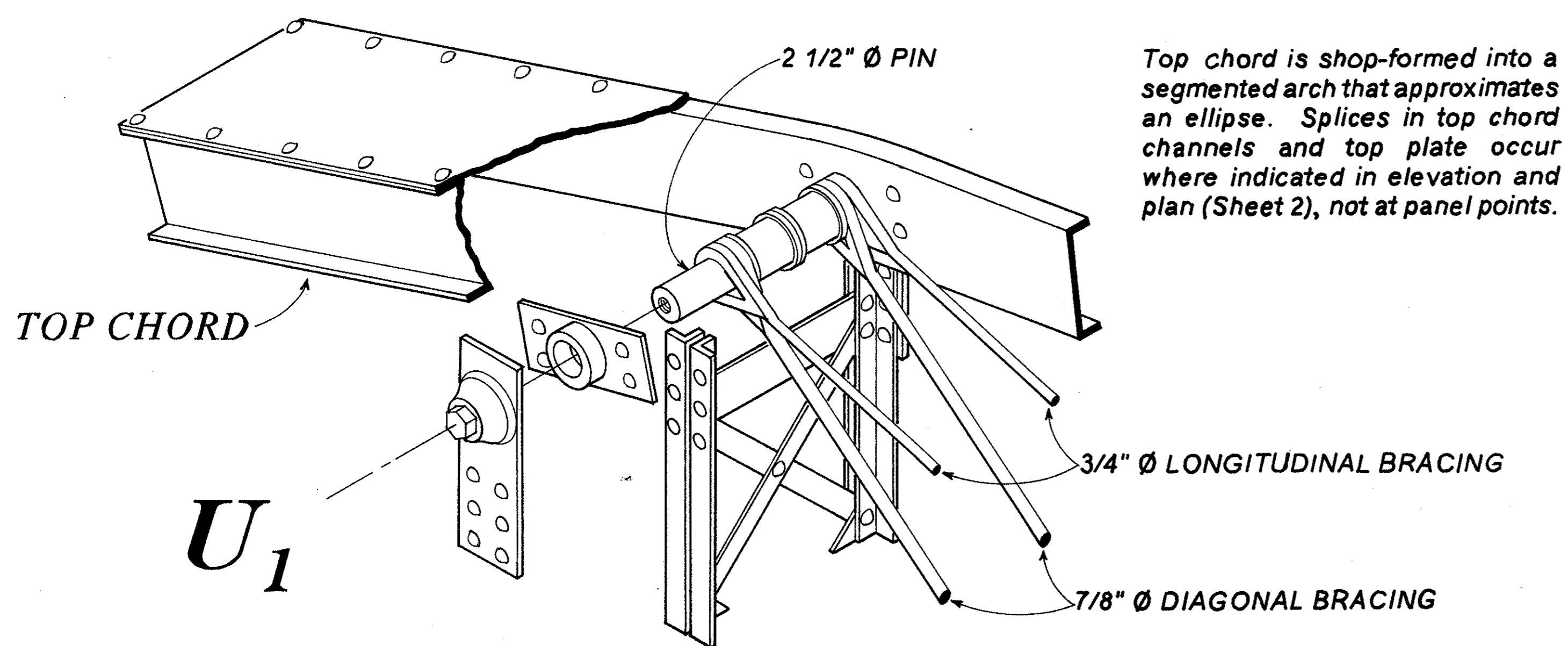
WYOMING COUNTY

PENNSYLVANIA

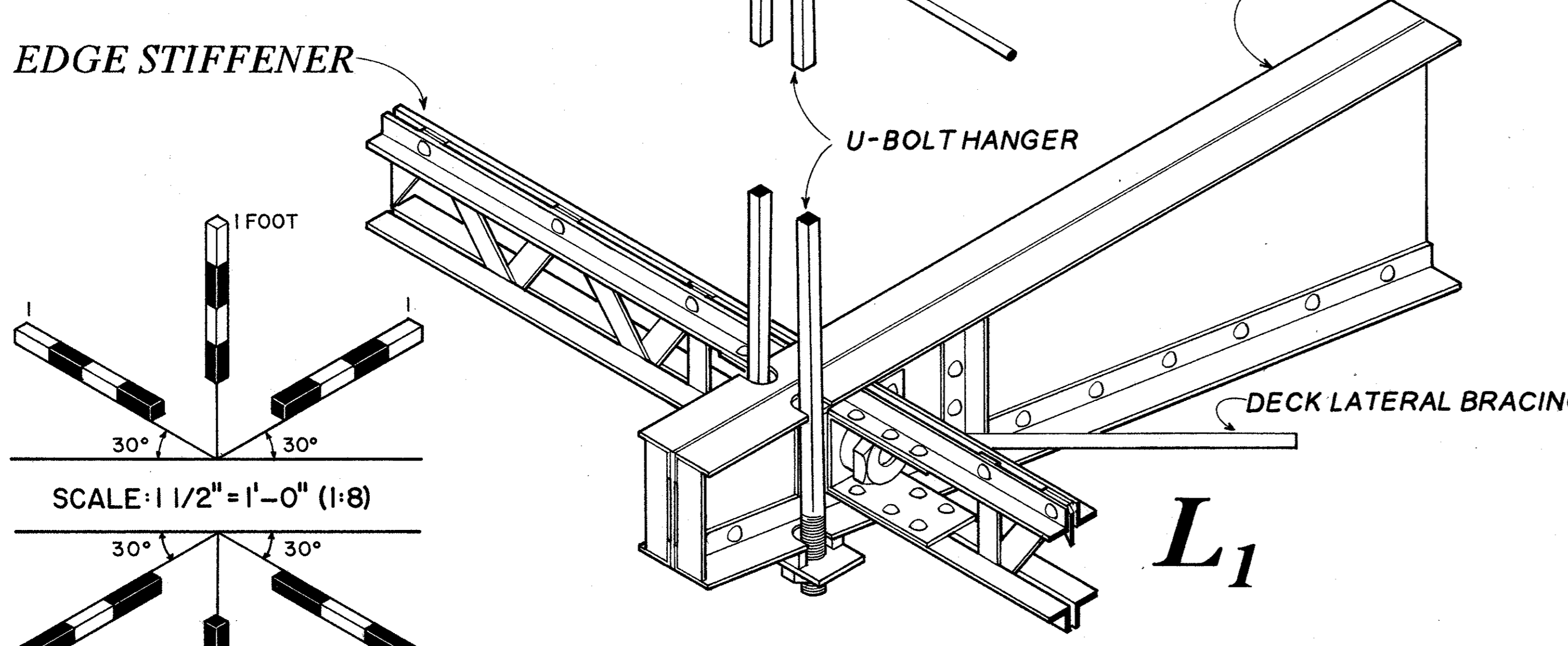
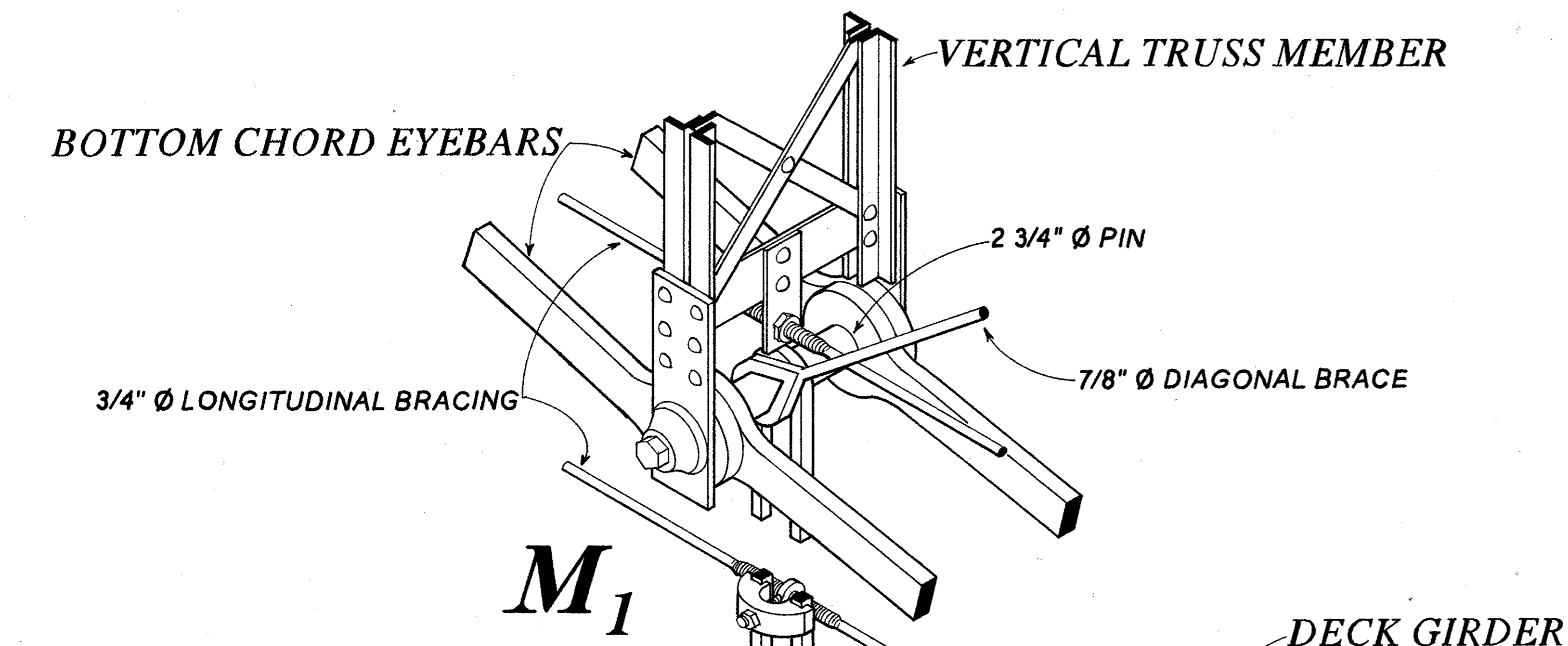
SHEET  
3 OF 4

HISTORIC AMERICAN  
ENGINEERING RECORD  
PA-468

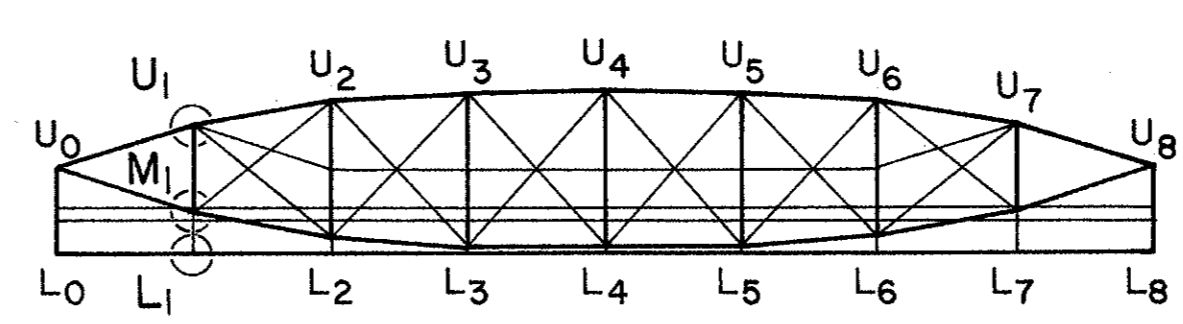
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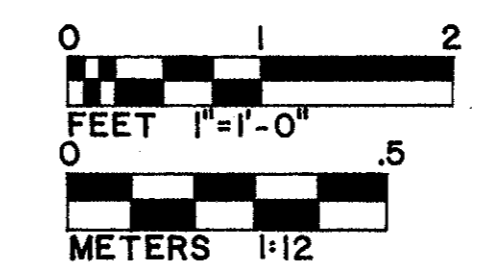
Top chord is shop-formed into a segmented arch that approximates an ellipse. Splices in top chord channels and top plate occur where indicated in elevation and plan (Sheet 2), not at panel points.



# TRUSS DETAIL



## TABLE OF MEMBER SECTIONS



<b>TOP CHORD</b> U <sub>0</sub> to U <sub>8</sub> (2) CHANNELS 8" x 2" x 5/16" (1) Plate 16" x 5/16" 4" x 1/4" HORIZ. STRAPS (4 per panel)		<b>DIAGONAL BRACING</b> U <sub>2</sub> - M <sub>1</sub> (1) 7/8" DIAMETER ROD U <sub>3</sub> - M <sub>2</sub> U <sub>4</sub> - M <sub>3</sub> U <sub>4</sub> - M <sub>5</sub> U <sub>5</sub> - M <sub>6</sub> U <sub>6</sub> - M <sub>7</sub> U <sub>1</sub> - M <sub>2</sub> (2) 7/8" DIAMETER RODS U <sub>7</sub> - M <sub>6</sub> U <sub>2</sub> - M <sub>3</sub> (2) 1" DIAMETER RODS U <sub>3</sub> - M <sub>4</sub> U <sub>5</sub> - M <sub>4</sub> U <sub>6</sub> - M <sub>5</sub>
<b>BOTTOM CHORD</b> U <sub>0</sub> - M <sub>1</sub> , M <sub>1</sub> - L <sub>2</sub> , L <sub>2</sub> - L <sub>3</sub> , L <sub>3</sub> - L <sub>4</sub> , L <sub>4</sub> - L <sub>5</sub> , L <sub>5</sub> - L <sub>6</sub> , L <sub>6</sub> - L <sub>7</sub> , L <sub>7</sub> - U <sub>8</sub> (2) EYEBARS 3" x 1 1/8"		<b>LONGITUDINAL BRACING</b> TOP (2) 3/4" DIAMETER RODS MIDDLE (1) 3/4" DIAMETER ROD & BOTTOM
<b>EDGE STIFFENER</b> L <sub>0</sub> to L <sub>8</sub> (4) ANGLES 1 3/4" x 1 3/4" x 1/4" 1 1/2" x 1/4" SINGLE LACING		<b>LATERAL BRACING</b> UPPER 1 PAIR 3/4" DIAMETER RODS (PANELS 3, 4, 5, 6) DECK 1 PAIR 1 1/2" DIAMETER RODS
<b>END POSTS</b> U <sub>0</sub> - L <sub>0</sub> (4) ANGLES 2" x 2" x 1/4" U <sub>8</sub> - L <sub>8</sub> (2) PLATES 9 1/4" x 5/16" (1) PLATE 21" x 1/4" (5) 4" x 1/2" HORIZ. STRAPS (1) 10" x 1/2" BASE HOR. STRAP		<b>UPPER CROSS STRUTS</b> AT PANEL 5" x 2 3/4" "I" BEAM POINTS U <sub>3</sub> , U <sub>4</sub> , U <sub>5</sub> AT PANEL (4) ANGLES 1 3/4" x 1 3/4" x 1/4" POINTS 1 1/2" x 1/4" DOUBLE LACING U <sub>2</sub> , U <sub>6</sub>
<b>VERTICAL TRUSS MEMBER</b> from U <sub>1</sub> - M <sub>1</sub> to U <sub>7</sub> - M <sub>7</sub> (4) ANGLES 1 3/4" x 1 3/4" x 1/4" 1 1/2" x 1/4" DOUBLE LACING		<b>DECK GIRDERS</b> AT PANEL (1) 1/4" PLATE TAPERING POINTS FROM 9 1/2" AT ENDS TO 18" L <sub>1</sub> to L <sub>7</sub> AT CENTER (4) ANGLES 3" x 2" x 1/4", LONG LEG HORIZONTAL (2) ANGLES 2" x 2" x 1/4", EACH END
<b>U-BOLT HANGERS</b> AT PANEL 1" SQUARE EACH LEG POINTS M <sub>1</sub> to M <sub>7</sub>		