



# CITY OF BEACON New York

Anthony J. Ruggiero, M.P.A.  
City Administrator

OFFICE OF CITY ADMINISTRATOR

845-838-5000

To: Mayor Casale and City Council

From: Anthony J. Ruggiero, MPA, City Administrator

Date: May 23, 2018

**Re: Tioronda/South Avenue Bridge**

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This was last before the City Council at the Workshop on February 26, 2018. The next day on February 27, 2018, the City's Consulting Bridge Engineer, Barney T. Martin, Jr., PhD, PE, transmitted to the City Council visualizations of the latest bridge alternative – a one lane bridge with two sidewalks, the presentation made on February 26, 2108 with a dimensioned section of the one lane bridge added, and the HAER drawings of the original bridge. These items are attached again.

At this point, before moving forward with additional designs and monies, the Council needs to come to a decision on if a bridge is desired and what type of bridge design.

# TIORONDA BRIDGE

BEACON • 1872 - 73 • NEW YORK

THE TIORONDA BRIDGE, CARRYING SOUTH AVENUE ACROSS FISHKILL CREEK IN THE CITY OF BEACON, NEW YORK, WAS ERECTED DURING 1872 OR 1873. THIS BRIDGE IS A RARE SURVIVING EXAMPLE OF THE IRON "BOWSTRING" TRUSS BRIDGE PATENTED BY JOHN GLASS, GEORGE P. SCHNEIDER, AND WILLIAM B. REZNER ON DECEMBER 10, 1867 (NO. 71,868). THE BRIDGE ALSO UTILIZES A DISTINCTIVE, ADJUSTABLE CAST IRON SKEWBACK (FOOTBLOCK) PATENTED BY WILLIAM B. REZNER ON JULY 2, 1872 (NO. 128,509).

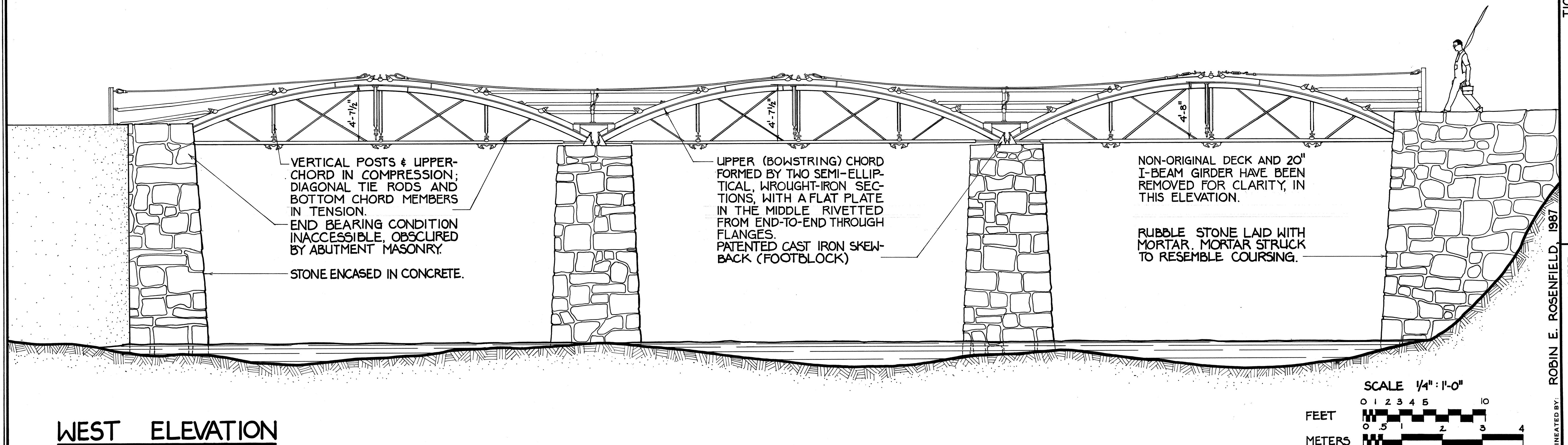
REZNER CALLED HIS BRIDGE AN OVAL WROUGHT-IRON TUBULAR ARCH TRUSS. OF EQUAL INTEREST AS THE FOOT BLOCKS ARE THE TUBULAR ARCHES. THEY WERE FABRICATED FROM TWO HALF-SECTIONS OF WROUGHT-IRON ROLLED IN AN ELLIPTICAL FORM THAT HE CALLED "CRESTS," AND A FLAT PLATE HE CALLED A "MIDRIFF." ALL THREE PIECES WERE CURVED AND RIVETED FROM END-TO-END THROUGH FLANGES.

THE TIORONDA BRIDGE WAS BUILT BY THE OHIO BRIDGE COMPANY OF CLEVELAND, A COMPANY FORMED BY GLASS, SCHNEIDER, AND REZNER IN 1869. THE OHIO BRIDGE COMPANY, ONE OF THE MANY SMALL BRIDGE BUILDING COMPANIES TO ARISE AND BRIEFLY PROSPER IN THE YEARS AFTER THE CIVIL WAR, CEASED TO EXIST IN 1873.

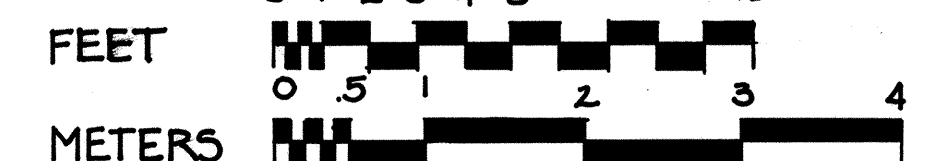
THIS RECORDING PROJECT IS PART OF THE HISTORIC AMERICAN ENGINEERING RECORD (HAER), A LONG-RANGE PROGRAM TO DOCUMENT THE ENGINEERING AND INDUSTRIAL HERITAGE OF THE UNITED STATES. THE HAER PROGRAM IS ADMINISTERED BY THE NATIONAL PARK SERVICE, U.S. DEPARTMENT OF THE INTERIOR. THE NEW YORK HISTORIC BRIDGES RECORDING PROJECT WAS COSPONSORED DURING THE SUMMER OF 1987 BY THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION. FRANKLIN E. WHITE, COMMISSIONER; DANIEL J. EGAN, DIRECTOR, PROGRAM PLANNING AND MANAGEMENT GROUP; MARY E. IVEY AND

KAREN McCANN, ENVIRONMENTAL ANALYSIS BUREAU; WILLIAM P. CHAMBERLIN, ENGINEERING RESEARCH AND DEVELOPMENT BUREAU.

FIELD WORK, MEASURED DRAWINGS, HISTORICAL REPORTS, AND PHOTOGRAPHS WERE PREPARED UNDER THE GENERAL DIRECTION OF DR. ROBERT J. KAPSCHE, CHIEF, HISTORIC AMERICAN BUILDINGS SURVEY/HISTORIC AMERICAN ENGINEERING RECORD (HABS/HAER), AND ERIC DELONY, PRINCIPAL ARCHITECT, HAER. THE RECORDING TEAM CONSISTED OF CHARLES SCOTT, PROJECT HISTORIAN; HUGH S. O'BRIEN, ARCHITECTURAL SUPERVISOR; ANDREW Q. COLE (MARY WASHINGTON COLLEGE) ASSISTANT HISTORIAN; AND KIM KUYKENDALL (UNIVERSITY OF ARIZONA), ROBIN E. ROSENFELD (TEXAS TECH UNIVERSITY), AND CHARISSA WANG (UNIVERSITY OF MARYLAND), ARCHITECTURAL DELINEATORS. RECORD PHOTOGRAPHS WERE TAKEN BY MARTIN STUPICH. CONSULTING SERVICES WERE PROVIDED BY JOHN R. BOWIE, AIA.



SCALE 1/4" = 1'-0"



WEST ELEVATION

TIORONDA BRIDGE, 1872-73

ON SOUTH AVENUE, OVER FISHKILL CREEK, 1 MILE SOUTHWEST OF BEACON  
DUTCHESS COUNTY

BEACON

ROBIN E. ROSENFELD, 1987

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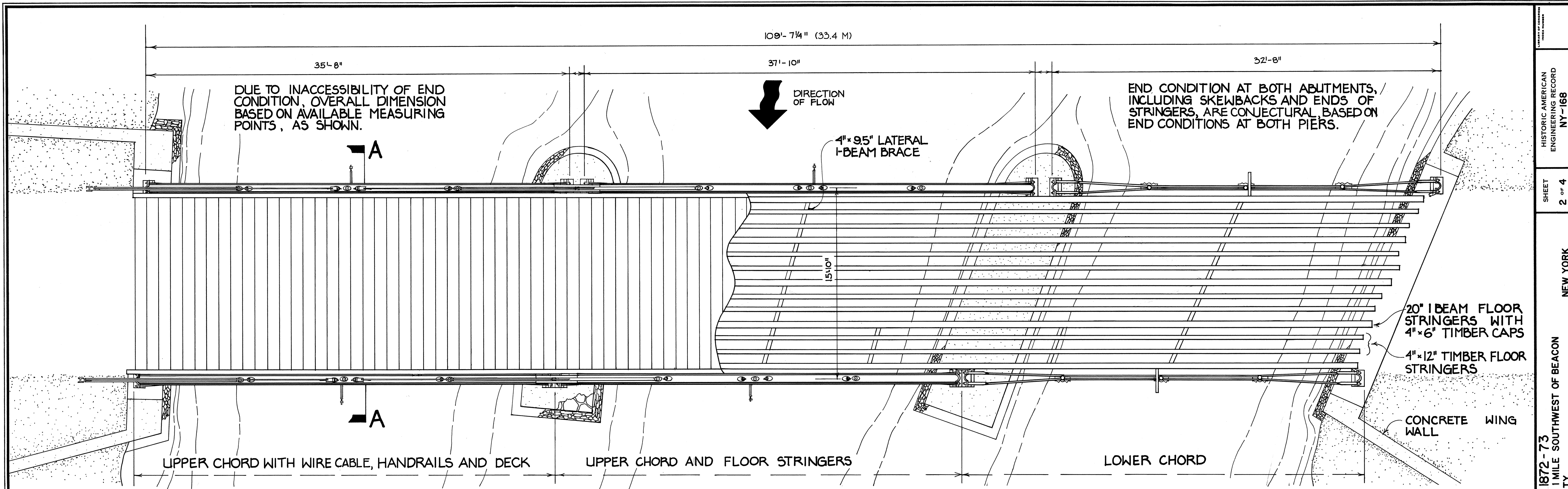
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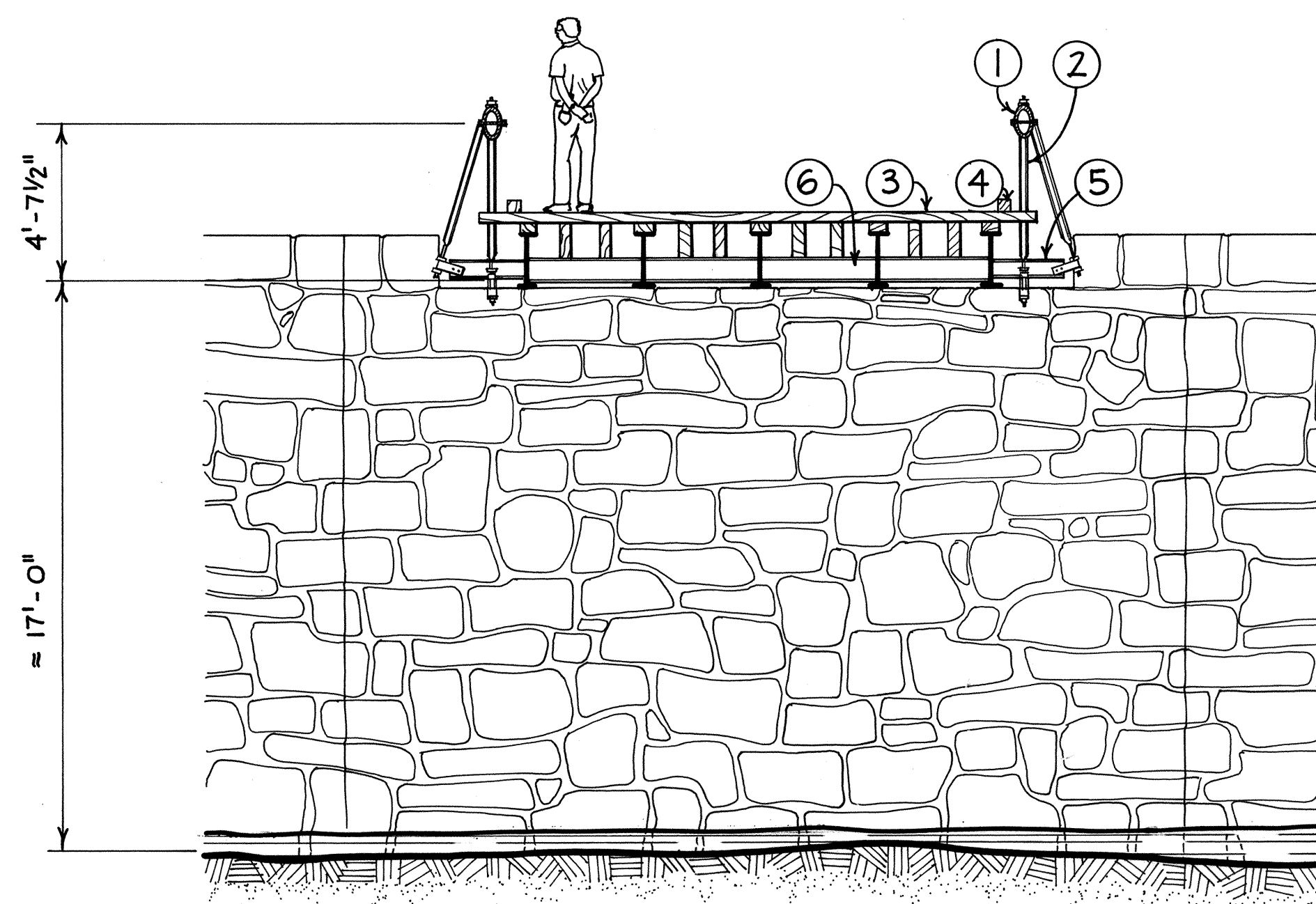
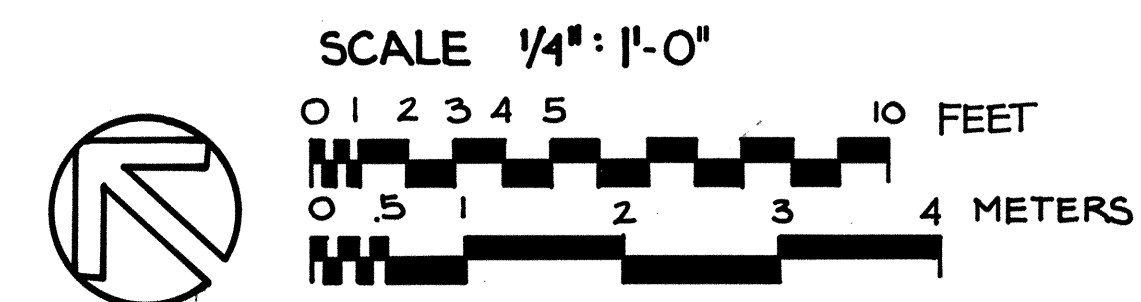
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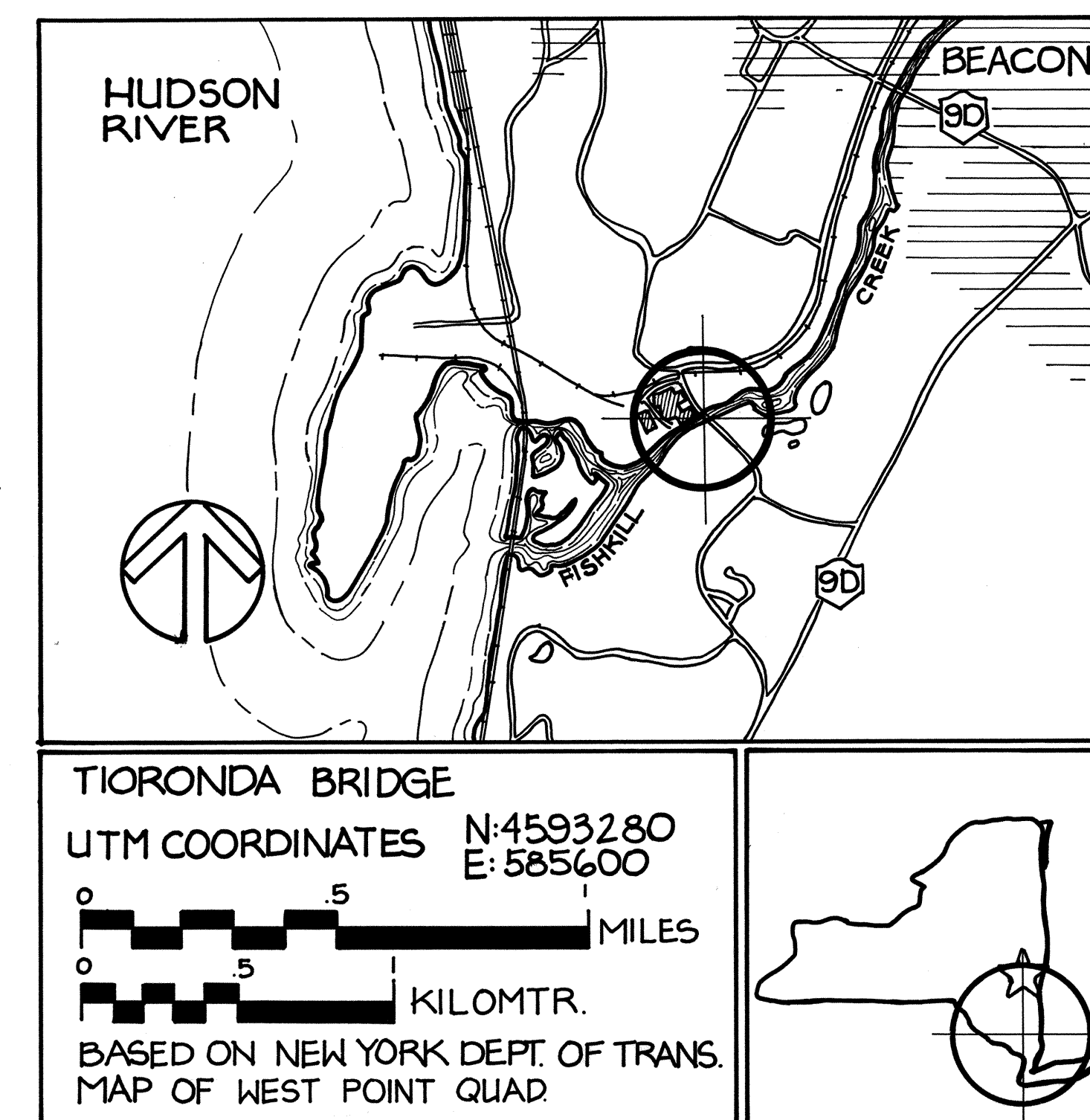
FLOOR PLAN



SECTION A-A

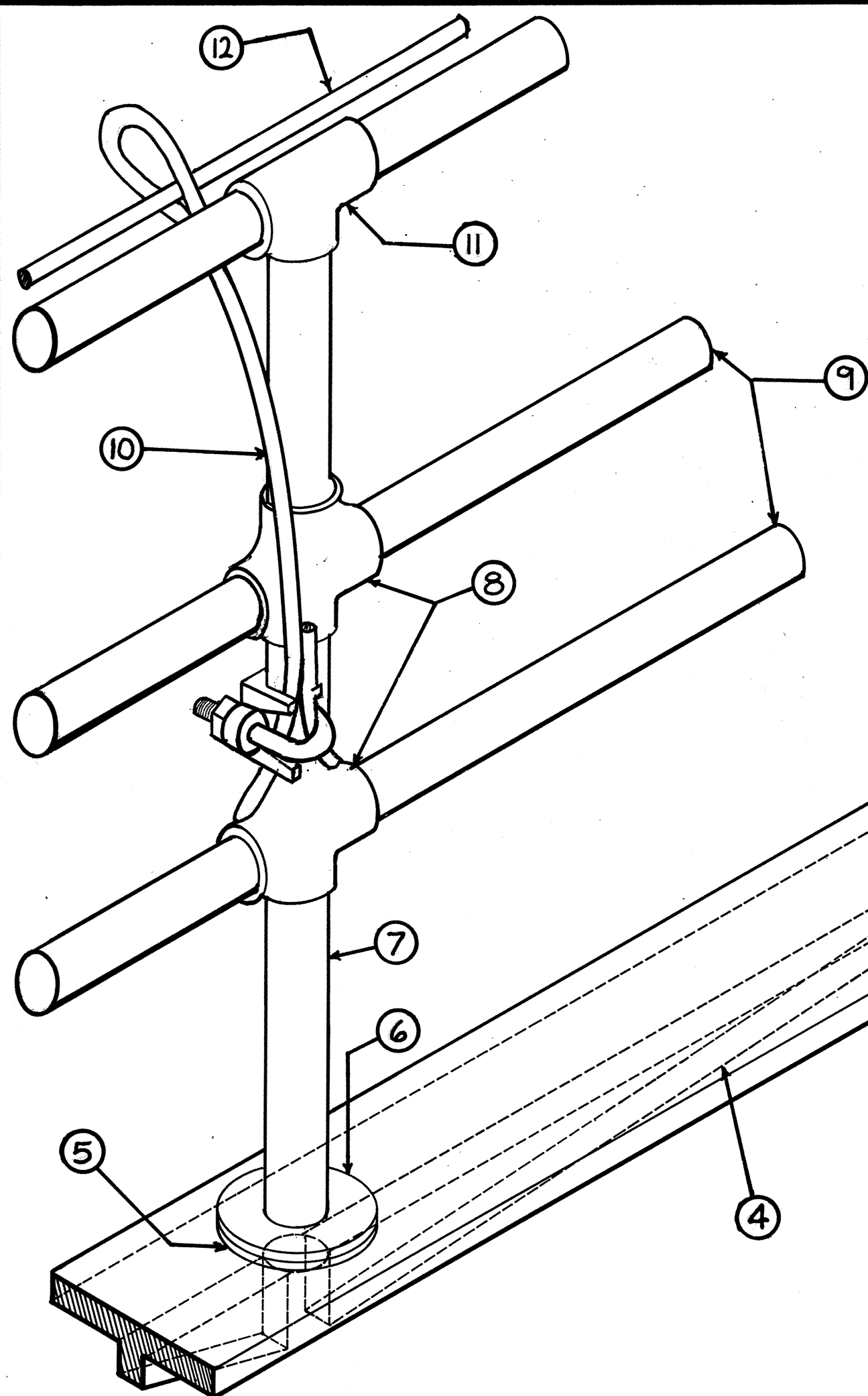
KEY

- ① RIVETED, SEMI-ELLIPTICAL WROUGHT-IRON SECTION WITH A FLAT PLATE IN THE MIDDLE
- ② MIDSPAN POSTS IN COMPRESSION
- ③ 3 1/2" WOOD PLANK DECK
- ④ 4" x 4" WOOD CURB
- ⑤ 6" x 2 3/4" x 3/8" STEEL GIRDER AT MIDSPAN
- ⑥ 4" x 95" LATERAL I-BEAM BRACE

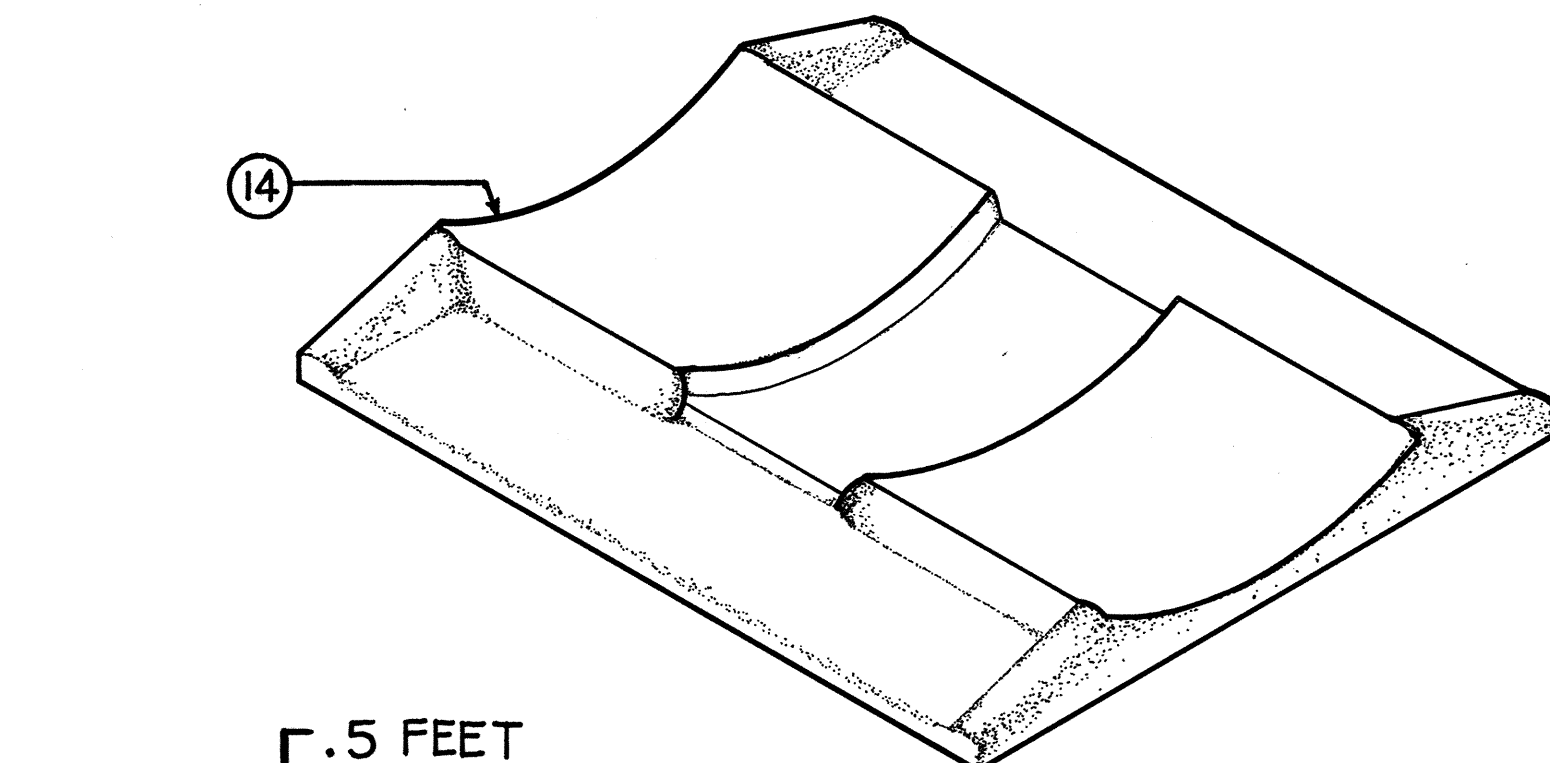
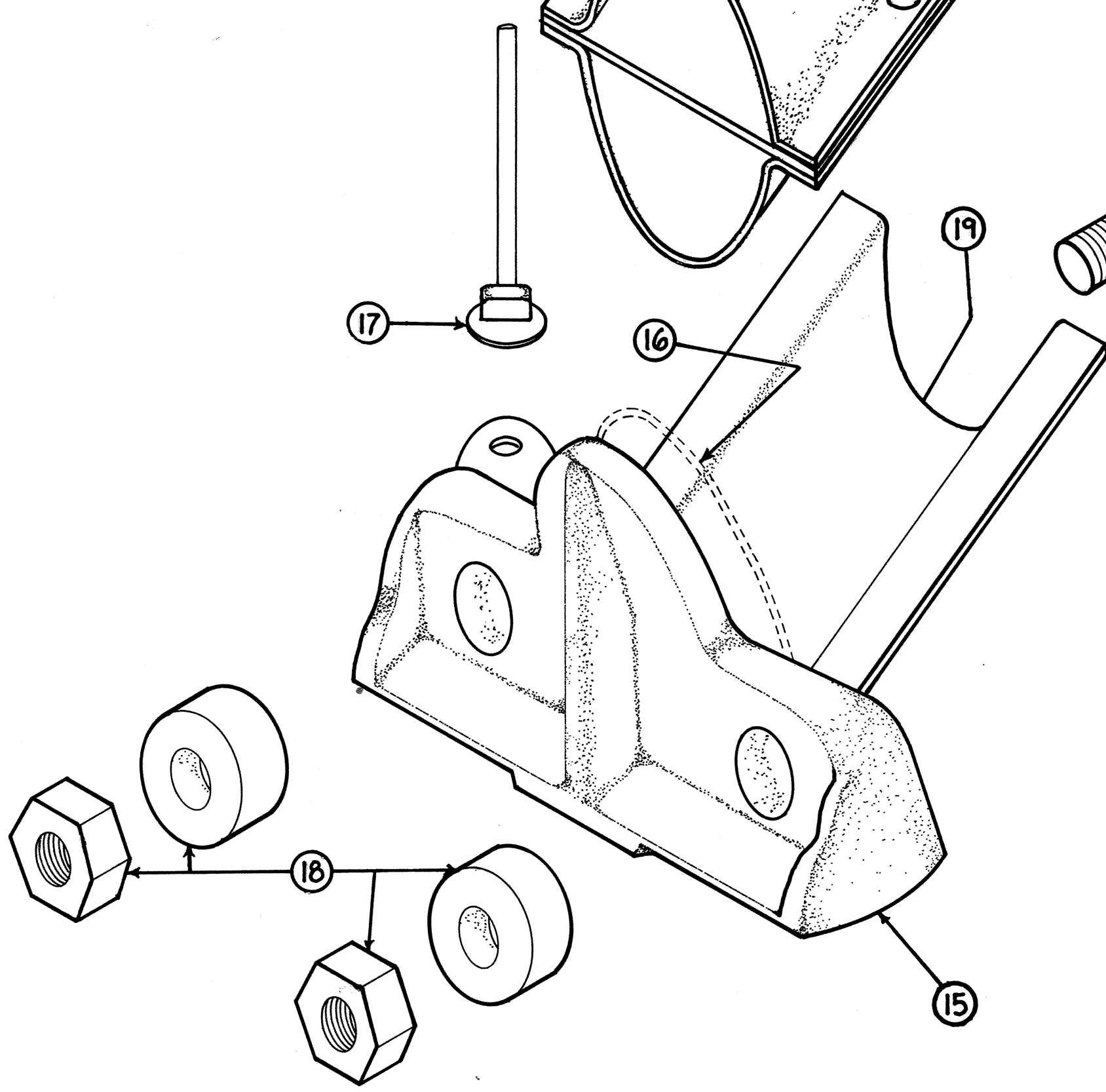
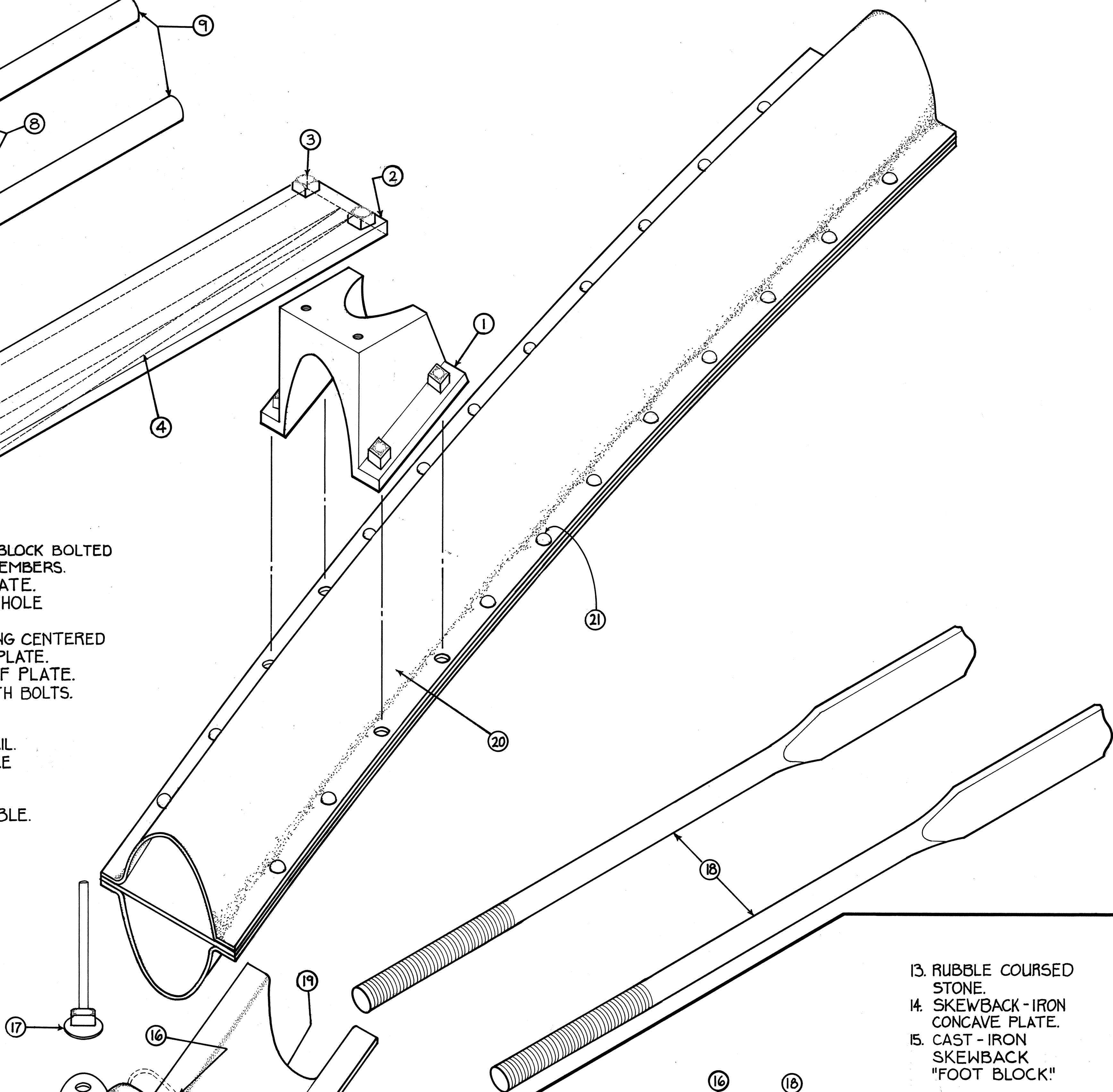




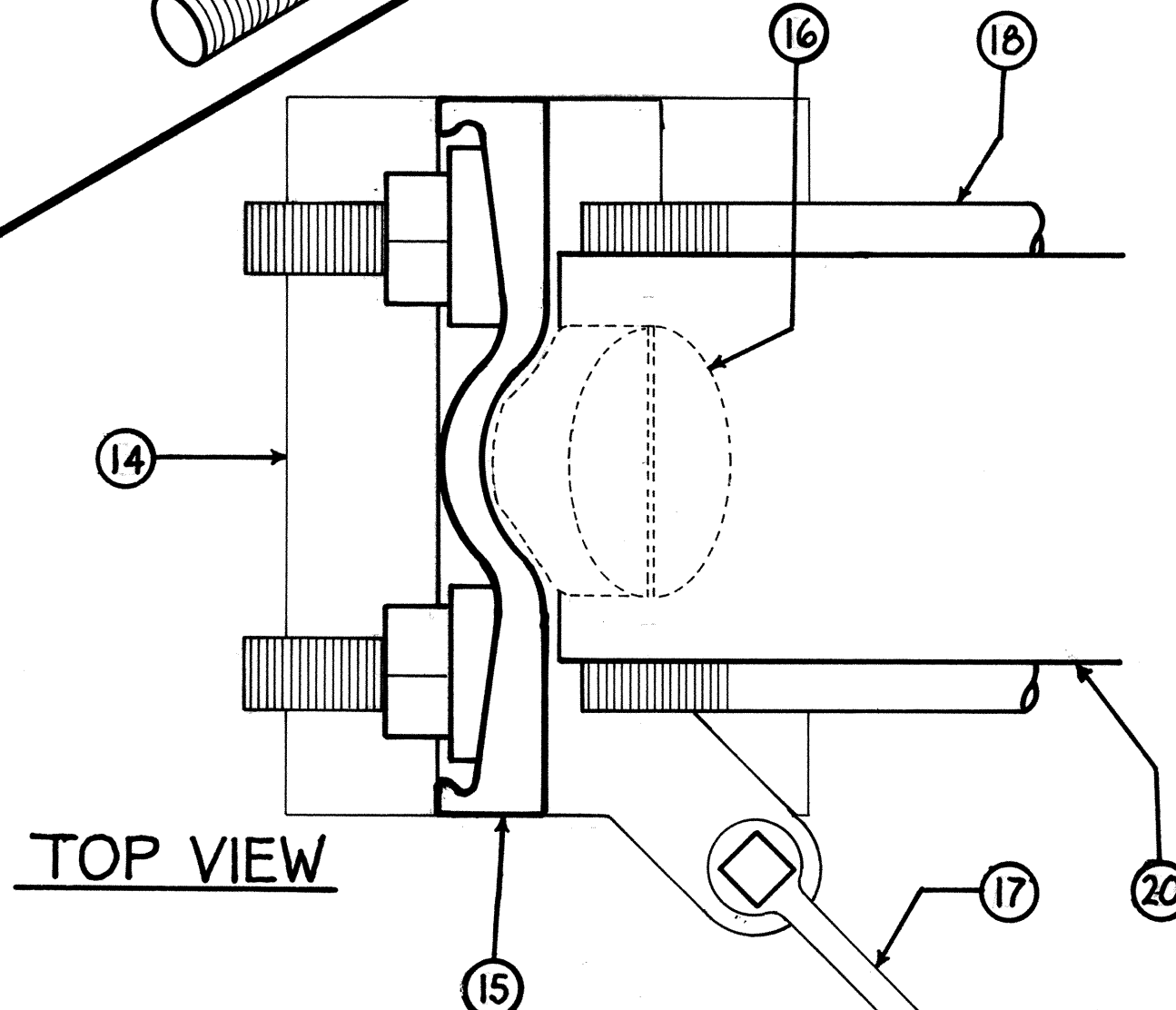
# END DETAIL HANDRAIL AT MIDSPAN



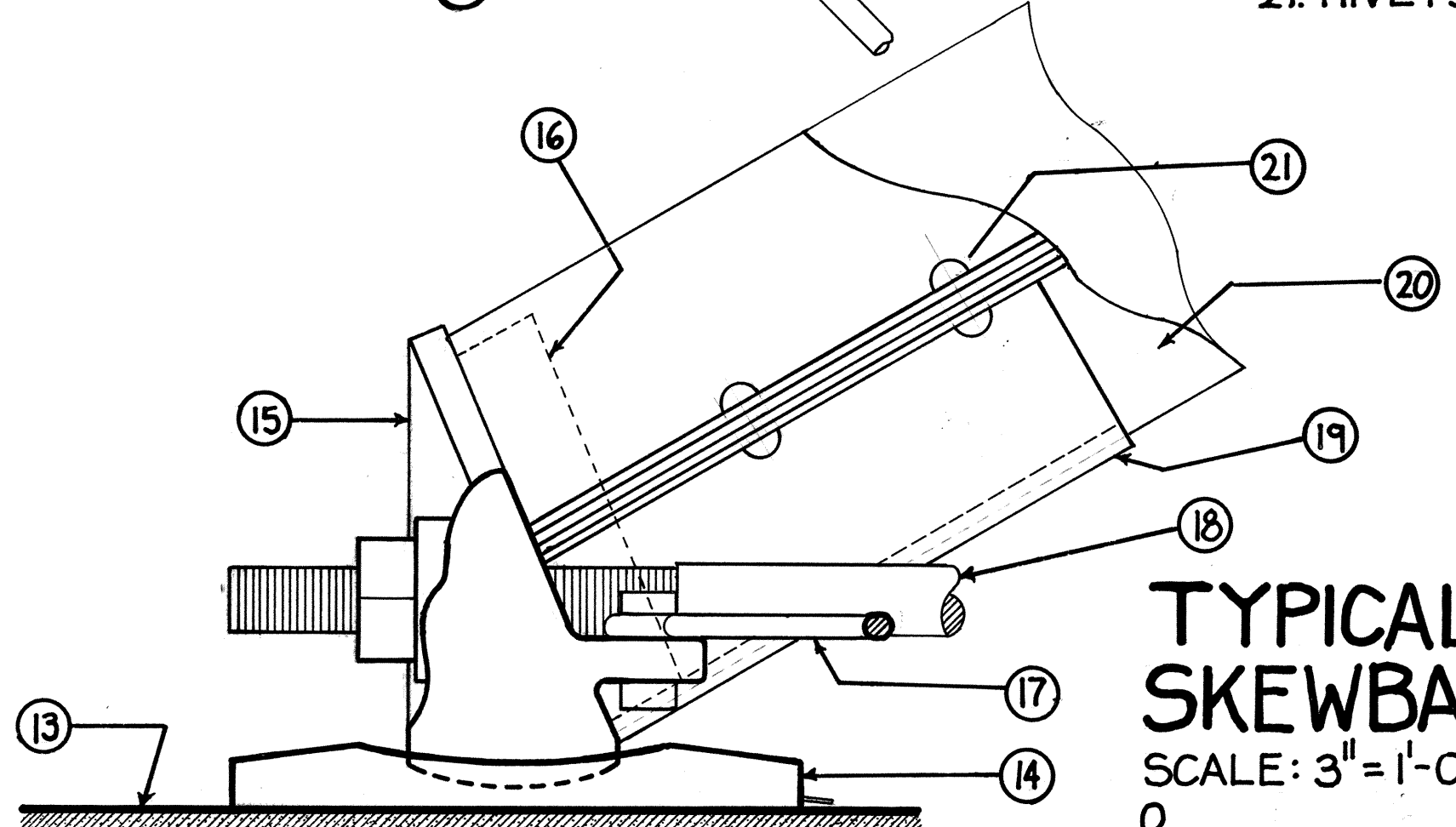
1. CAST-IRON SADDLE BLOCK BOLTED TO UPPER CHORD MEMBERS.
2. HANDRAIL POST PLATE.
3. BOLTS - SHAFT AND HOLE SIZE (CONJECTURAL)
4. CAST ANGLED BRACING CENTERED ON UNDERSIDE OF PLATE.
5. CAST LIP ON TOP OF PLATE.
6. WASHER PLATE WITH BOLTS.
7. METAL PIPE POST
8. CROSS FITTING.
9. METAL PIPE HANDRAIL.
10. BRAIDED WIRE CABLE CLASP FITTING.
11. 'T' FITTING.
12. BRAIDED WIRE CABLE.



SCALE: 3" = 1'-0"



TOP VIEW

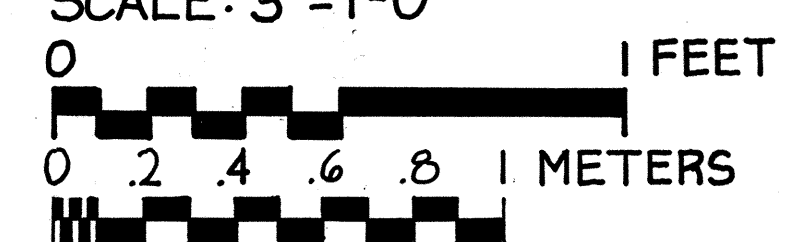


SIDE VIEW

13. RUBBLE COURSED STONE.
14. SKEWBACK - IRON CONCAVE PLATE.
15. CAST - IRON SKEWBACK "FOOT BLOCK."
16. FORMED BOSS MENTIONED IN PATENT DESCRIPTIONS (\*128,509, DATED JULY 2, 1872) - INACCESSIBLE TO FIELD INVESTIGATION. DELINEATION SHOWN IS CONJECTURAL.
17. LOWER LATERAL TIE ROD.
18. THREADED BOTTOM CHORD WITH BOLT AND SLEEVE WASHER.
19. SLEEVE PLATE FORMED TO TUBULAR ARCH.
20. TUBULAR ARCH.
21. RIVETS.

## TYPICAL SKEWBACK

SCALE: 3" = 1'-0"



DELINEATED BY: KIM KUYKENDALL / DONALD M. PURST, 1987

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TIORONDA BRIDGE, 1872-73  
ON SOUTH AVENUE, OVER FISHKILL CREEK, 1 MILE SOUTHWEST OF BEACON  
DUTCHESS COUNTY

NEW YORK

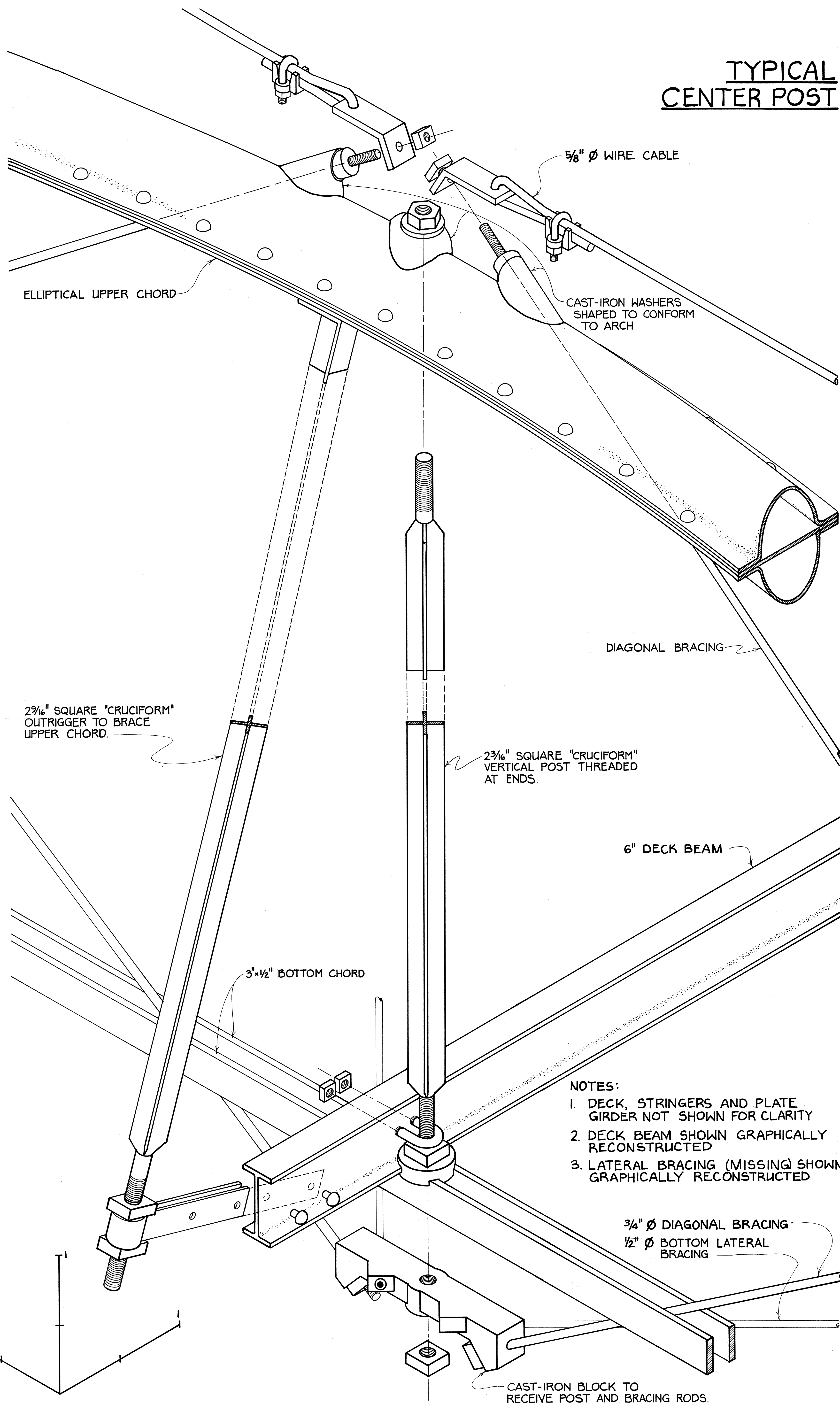
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# TYPICAL CENTER POST



## NOTES:

1. DECK, STRINGERS AND PLATE GIRDER NOT SHOWN FOR CLARITY
2. DECK BEAM SHOWN GRAPHICALLY RECONSTRUCTED
3. LATERAL BRACING (MISSING) SHOWN GRAPHICALLY RECONSTRUCTED

DELINEATED BY: CHARISSA WANG, 1987

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