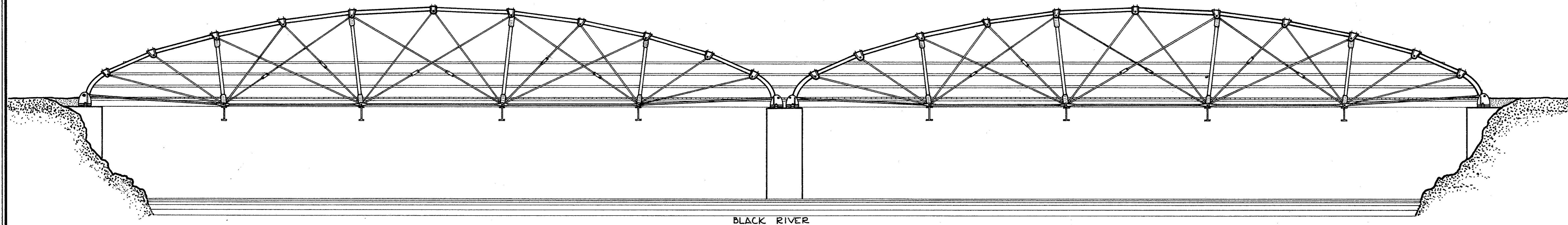


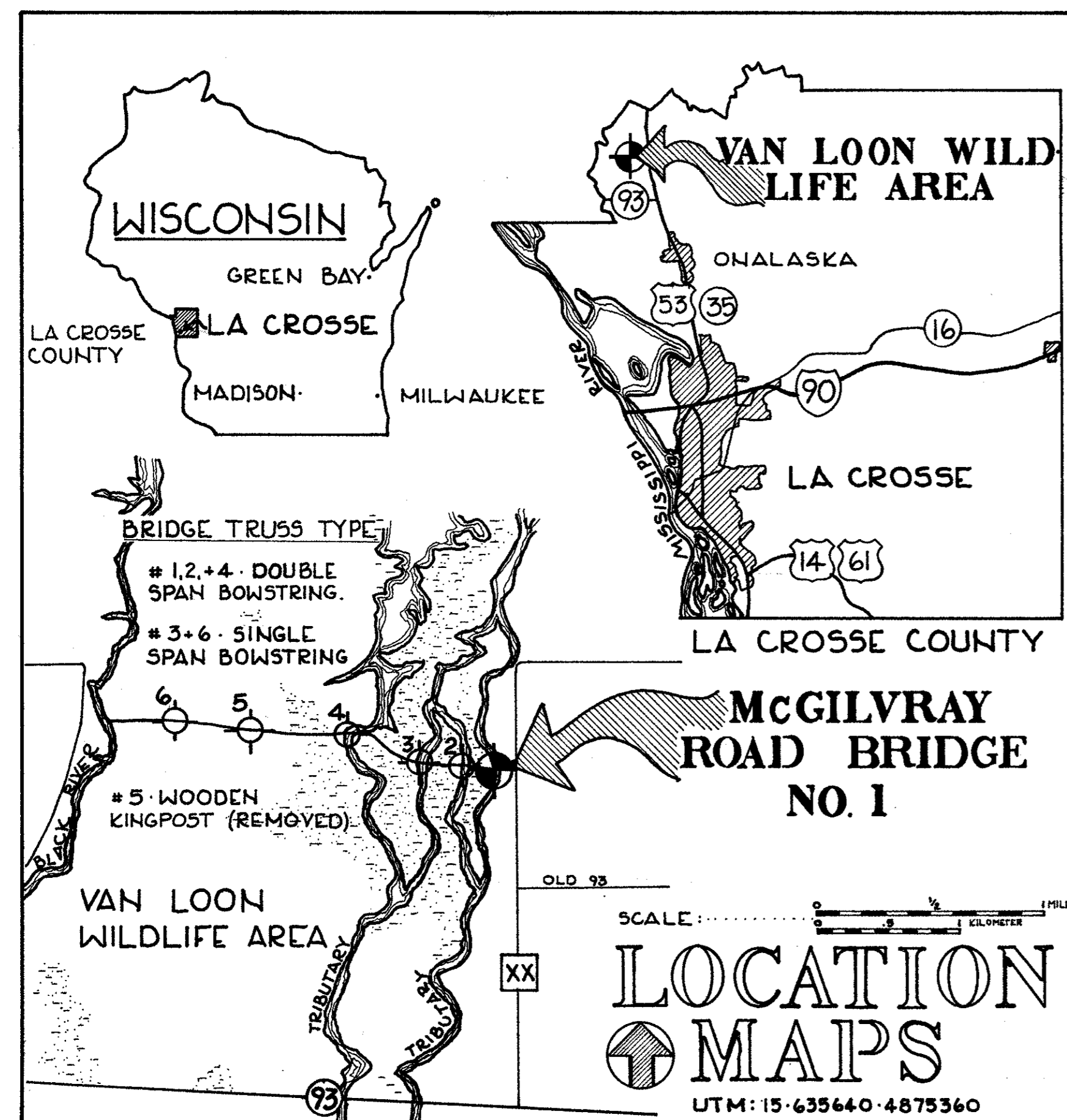
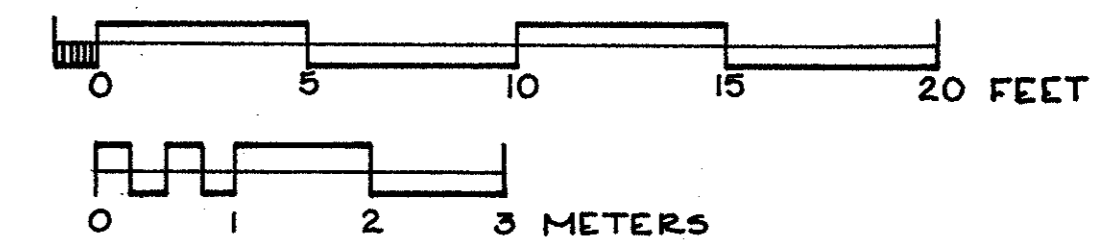
McGILVRAY ROAD BRIDGE No.1 • 1906

VAN LOON WILDLIFE AREA, WISCONSIN



BLACK RIVER

NORTH ELEVATION



IN 1897, CHARLES M. HORTON, OF MINNESOTA, RECEIVED A PATENT FOR AN IMPROVEMENT ON TRUSSES AND BRIDGES. ACCORDING TO HORTON, RIVETED AND BOLTED CONNECTIONS PERFORATED THE METAL, NEEDLESSLY WEAKENING THE JOINTS. INSTEAD, HE CLAIMED, ONE COULD STRENGTHEN A BRIDGE BY SUBSTITUTING ALTERNATIVE DEVICES, SUCH AS HOOK-CLIPS, FOR THE RIVETS AND BOLTS.

THE LA CROSSE BRIDGE AND STEEL COMPANY, LA CROSSE, WISCONSIN, OBTAINED THE RIGHTS TO MANUFACTURE HORTON'S DESIGN WHEN THE FIRM INCORPORATED IN 1900. BETWEEN 1905 AND 1908, THE COMPANY ERECTED FIVE, POSSIBLY SIX, PATENTED BOWSTRING BRIDGES ALONG THE McGILVRAY ROAD. THIS FREQUENTLY TRAVELED HIGHWAY SERVED AS A NATURAL TRANSPORTATION ROUTE FROM THE CITY OF LA CROSSE TO THE NORTHWESTERN PART OF WISCONSIN.

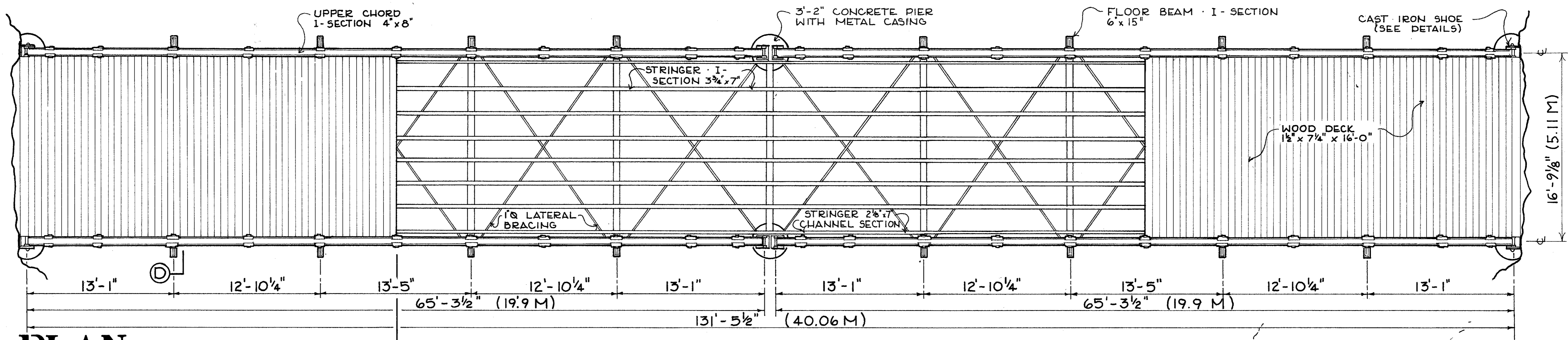
THE McGILVRAY ROAD BRIDGES ARE FIVE OF ONLY SEVEN REMAINING BOWSTRING IN THE STATE. THEY ARE ONE OF THE FEW SURVIVING

EXAMPLES OF A LA CROSSE BRIDGE AND STEEL COMPANY BRIDGE AND POSSIBLY THE ONLY EXAMPLE OF CHARLES M. HORTON'S BRIDGE PATENT.

THE McGILVRAY ROAD BRIDGE WAS DOCUMENTED IN THE SUMMER OF 1987 AS PART OF THE WISCONSIN HISTORIC BRIDGE RECORDING PROJECT BY THE HISTORIC AMERICAN ENGINEERING RECORD (HAER), NATIONAL PARK SERVICE, US DEPARTMENT OF THE INTERIOR. THE PROJECT WAS CO-SPONSORED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION, MARVIN SCHAEFFER, ADMINISTRATOR, DIVISION OF HIGHWAYS + TRANSPORTATION SERVICES.

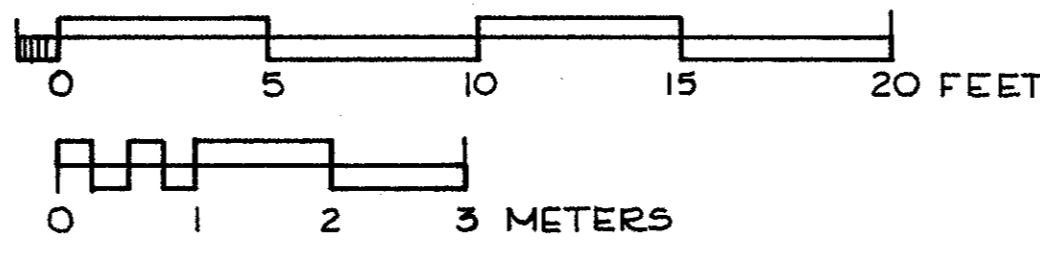
FIELD WORK AND DOCUMENTATION, MEASURED DRAWINGS, HISTORICAL REPORTS AND PHOTOGRAPHS WERE PREPARED UNDER THE GENERAL DIRECTION OF DR. ROBERT KAPSCHE, CHIEF, HISTORIC AMERICAN BUILDINGS SURVEY/HISTORIC AMERICAN ENGINEERING RECORD. THE FIELD TEAM, UNDER DIRECTION OF ERIC DELONY, CHIEF AND PRINCIPAL ARCHITECT, HAER, CONSISTED OF JOSEPH BILELLO (UNIVERSITY OF NEW MEXICO), PROJECT SUPERVISOR, DIANE KROMM (HAGLEY FOUNDATION) PROJECT HISTORIAN, ARCHITECTURAL TECHNICIANS: DAVID JAMISON (OHIO STATE UNIVERSITY) AND SCOTT BARBER (UNIVERSITY OF WISCONSIN-MILWAUKEE); ARCHITECTURAL HISTORIANS: LOLA BENNETT (UNIVERSITY OF VERMONT) AND ED CORDES (CREIGHTON UNIVERSITY) AND PHOTOGRAPHER MARTY STUPICH (MASSACHUSETTS COLLEGE OF ART). ROBERT NEWBERY, HISTORIAN (WISCONSIN DEPARTMENT OF TRANSPORTATION) WAS PROJECT ADVISOR.

HISTORIC AMERICAN ENGINEERING RECORD
 SHEET 1 of 3
 WISCONSIN
 LA CROSSE COUNTY
 WISCONSIN
 ROAD NO. XX
 9 MILES NORTH OF LA CROSSE
 WILDLIFE AREA
 1906
 McGILVRAY ROAD BRIDGE
 NATIONAL PARK SERVICE, NAME OF DELINEATOR, DATE OF THE DRAWING
 DELINEATED BY: SCOTT BARBER, 1987
 WISCONSIN HISTORIC BRIDGE RECORDING TEAM
 HISTORIC AMERICAN ENGINEERING RECORD
 UNITED STATES DEPARTMENT OF THE INTERIOR



PLAN TOP VIEW

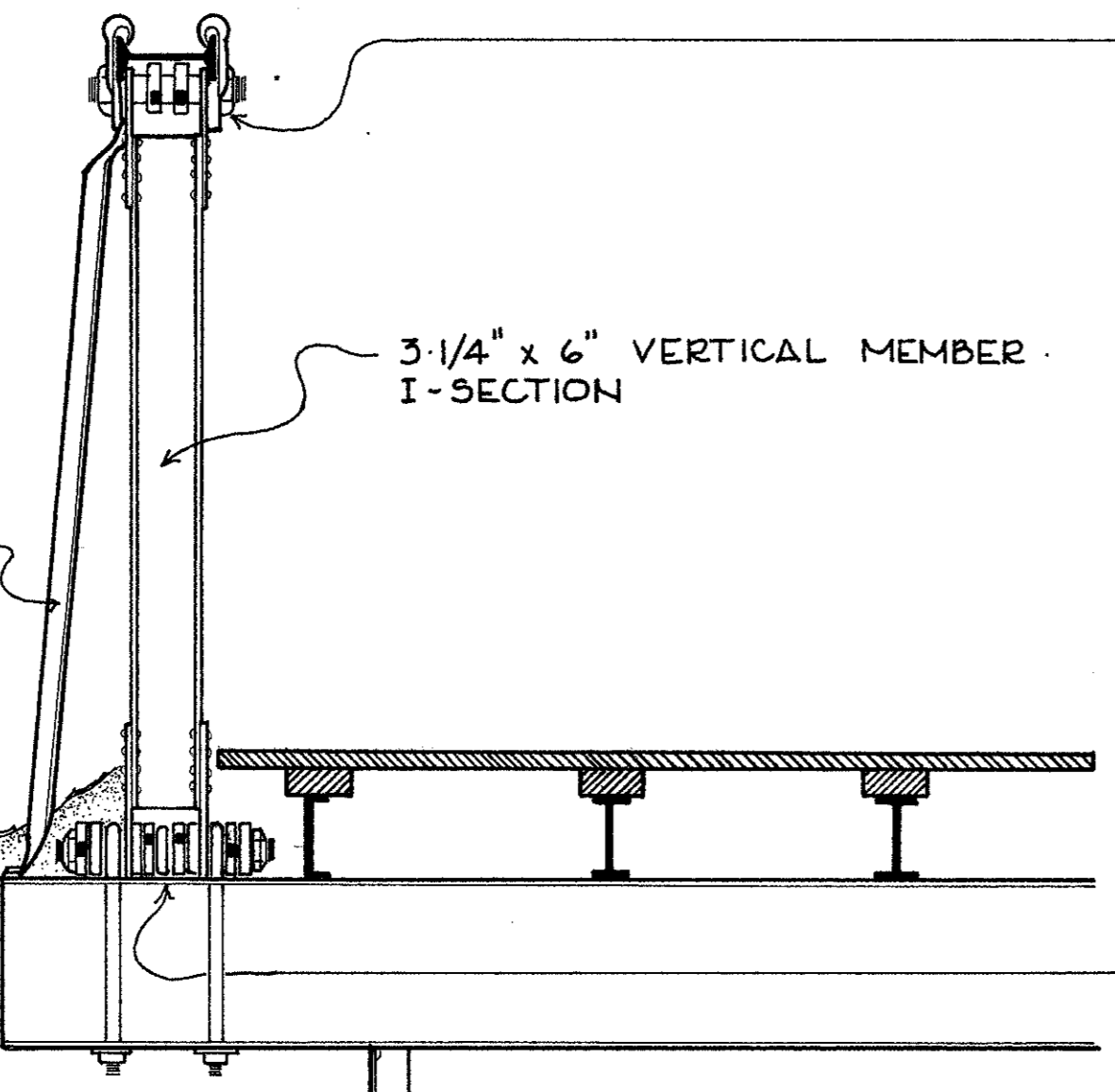
DECK REMOVED



DECKING AND SUBSTRUCTURE

- 1" LATERAL BRACE
- 6" x 1'-3" FLOOR BEAM I SECTION
- 2-1/8" x 7" CHANNEL SECTION STRINGERS
- 3-3/4" x 7" I-SECTION STRINGERS
- 1-1/2" x 7-1/4" x 16'-0" WOOD PLANKS

Z SECTION: 2-1/8" x 2-1/8" OUTRIGGER



UPPER CHORD CONNECTION

- 2-7/8" SQUARE I-BARS
- 4" x 8" TOP CHORD I-SECTION
- 1 3/4" THREADED PIN
- 8" x 8 1/4" HOOK CLIP (CAST IRON)
- 5 1/2" x 12 3/4" REINFORCING PLATE
- HEX NUTS 3 1/2" OVER FLATS

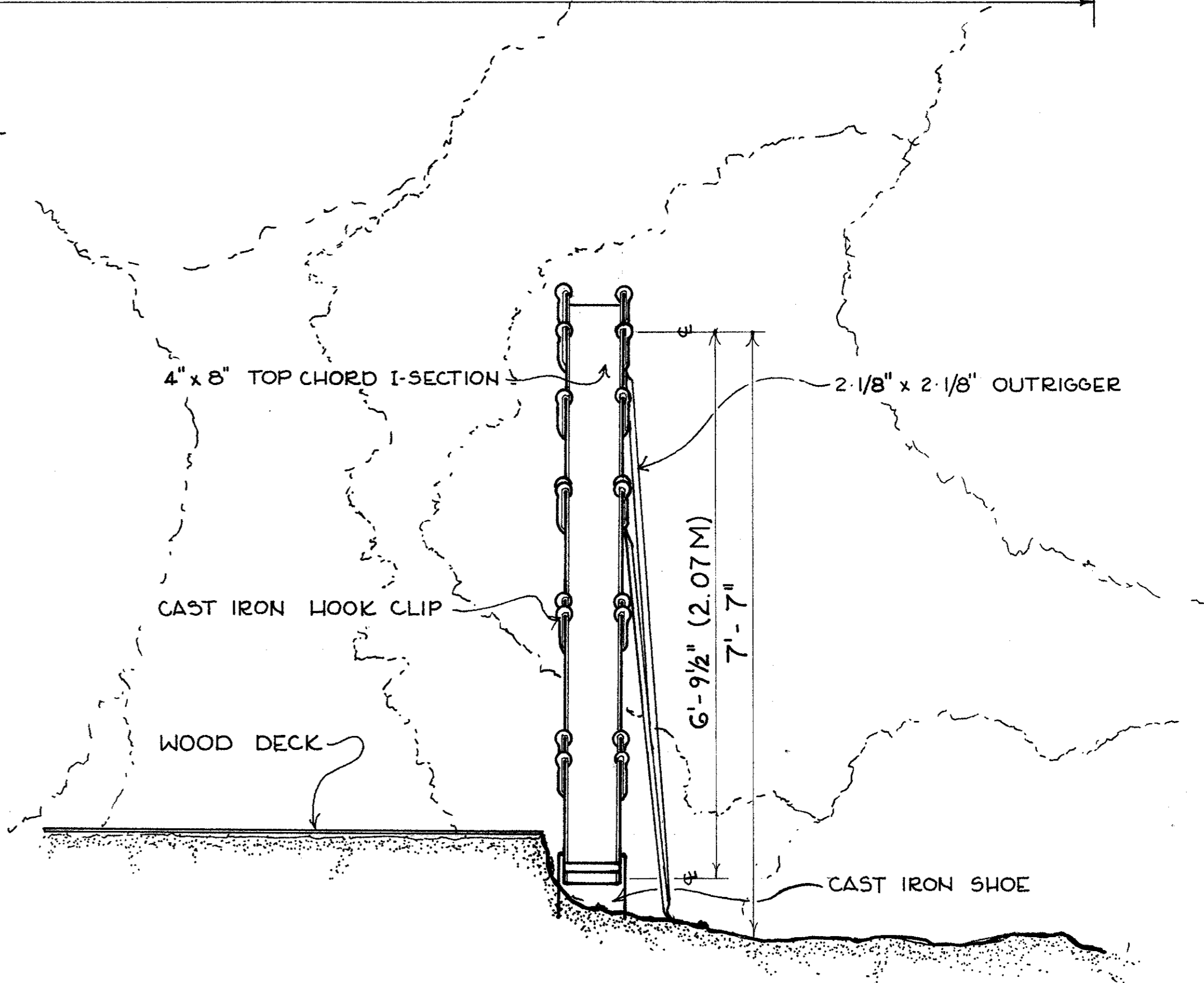
LOWER CHORD CONNECTION

- 1 1/2" BEAM HANGER
- 4 1/2" x 7" x 1/8" BEAM HANGER PLATE
- 2" SQUARE LOWER CHORD EYE BARS
- 7/8" SQUARE LATERAL BRACING
- 1 3/4" THREADED PIN
- 3 1/2" HEX NUTS
- REINFORCING PLATES 5 1/2" x 12 3/4"
- 2" HEX NUTS

ABUTMENTS

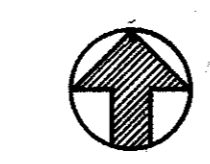
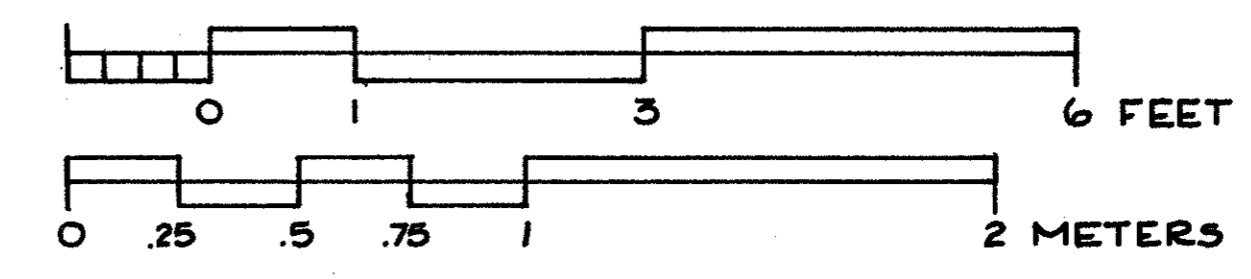
- 3'-4" PIER TOP PLATE
- 5'-1 1/2" SHEET METAL ABUTMENT
- 3'-2" CONCRETE PIER WITH SHEET METAL CASING
- 2 L's: 3" x 2" x 1/4"
- 4 L's: 1 1/2" x 3" x 1/4"
- 8 L's: 1-7/8" x 1-5/8" x 1/4"

SECTION AT D

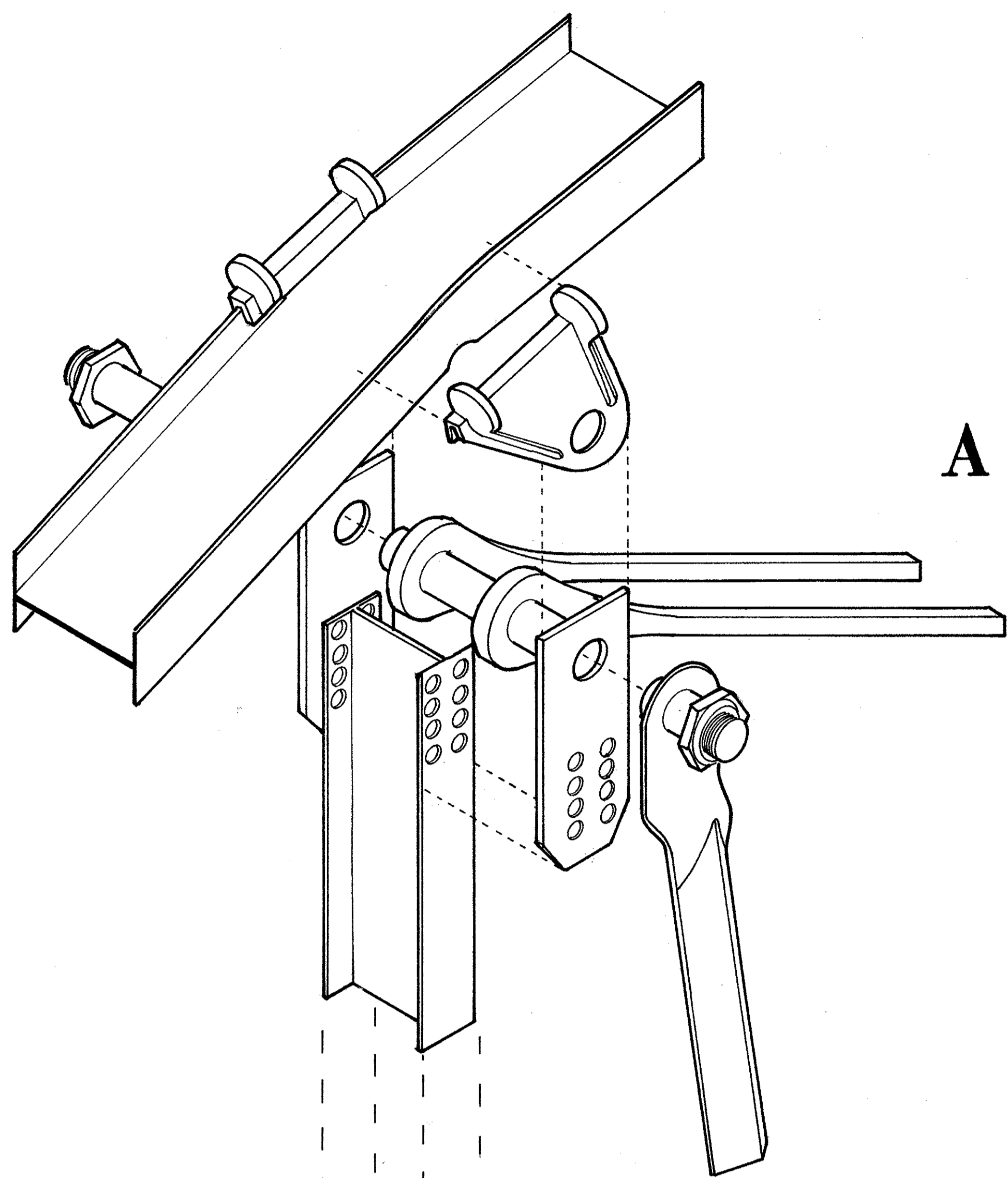


ELEVATION END VIEW

SCALE: 3/4" = 1'-0"



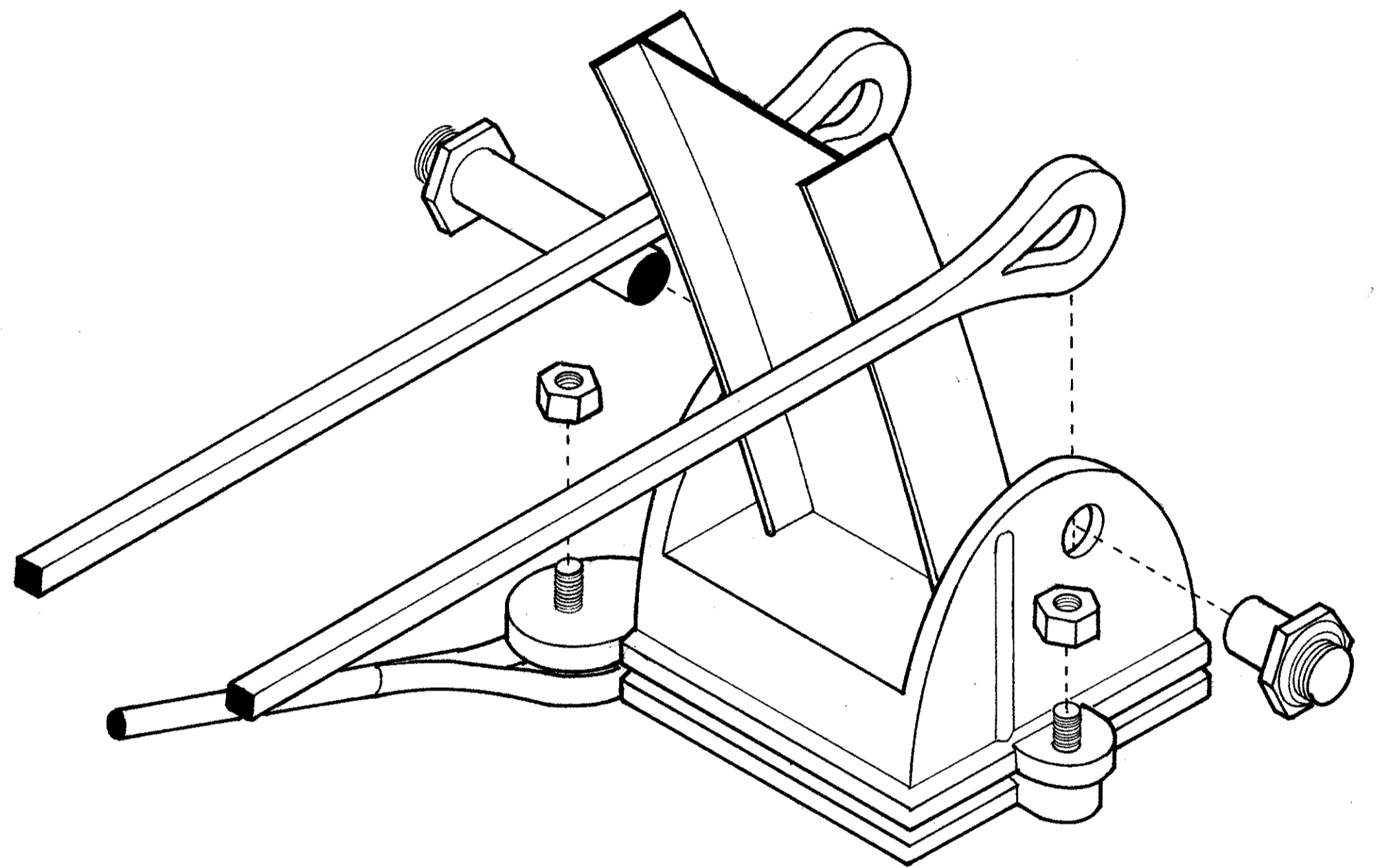
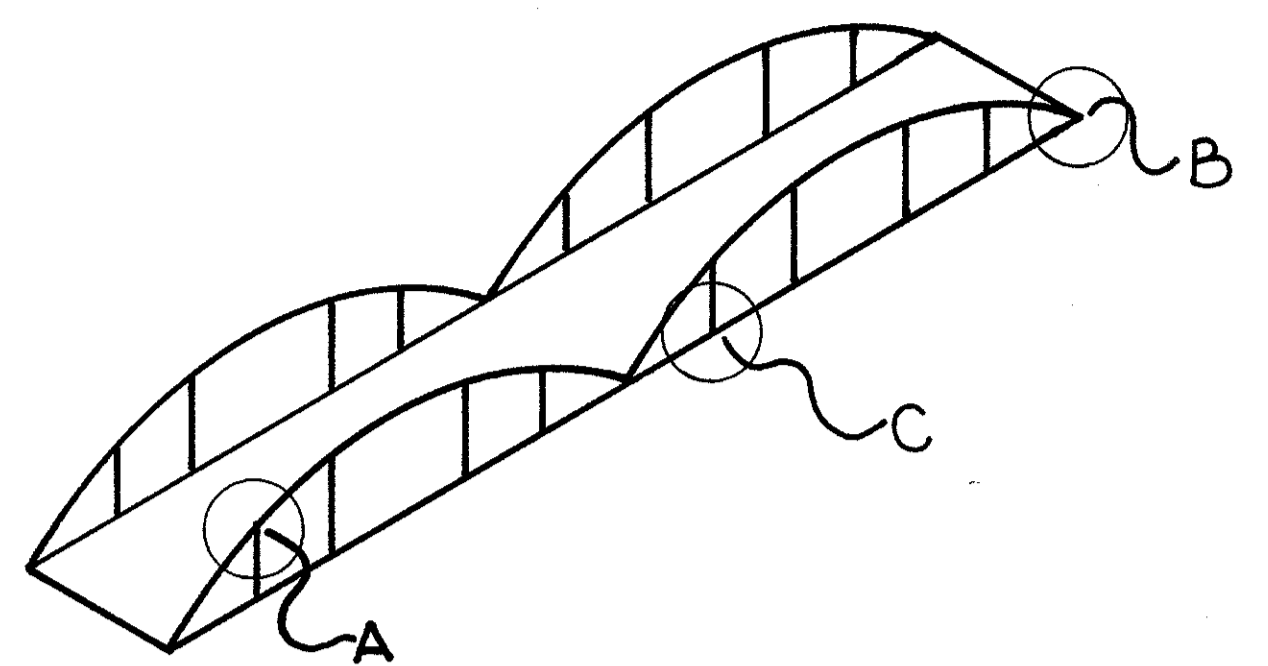
DELINEATED BY: DAVID E. JAMISON, 1987
 WISCONSIN BRIDGE RECORDING TEAM
 HISTORIC AMERICAN ENGINEERING RECORD
 UNITED STATES DEPARTMENT OF THE INTERIOR
 HISTORIC AMERICAN ENGINEERING RECORD
 SHEET 2 of 3
 W1-22
 WISCONSIN
 LA CROSSE COUNTY
 SPANNING THE BLACK RIVER AT THE ENTRANCE TO THE WILDLIFE AREA 9 MILES NORTH OF LA CROSSE ON COUNTY RD. XX
 VAN LOON WILDLIFE AREA
 McGILVRA ROAD BRIDGE No. 1, 1906
 IF REPRODUCED, PLEASE CREDIT: HISTORIC AMERICAN ENGINEERING RECORD, NATIONAL PARK SERVICE, NAME OF DELINEATOR, DATE OF THE DRAWING



A

VERTICAL/TOP CHORD CONNECTION

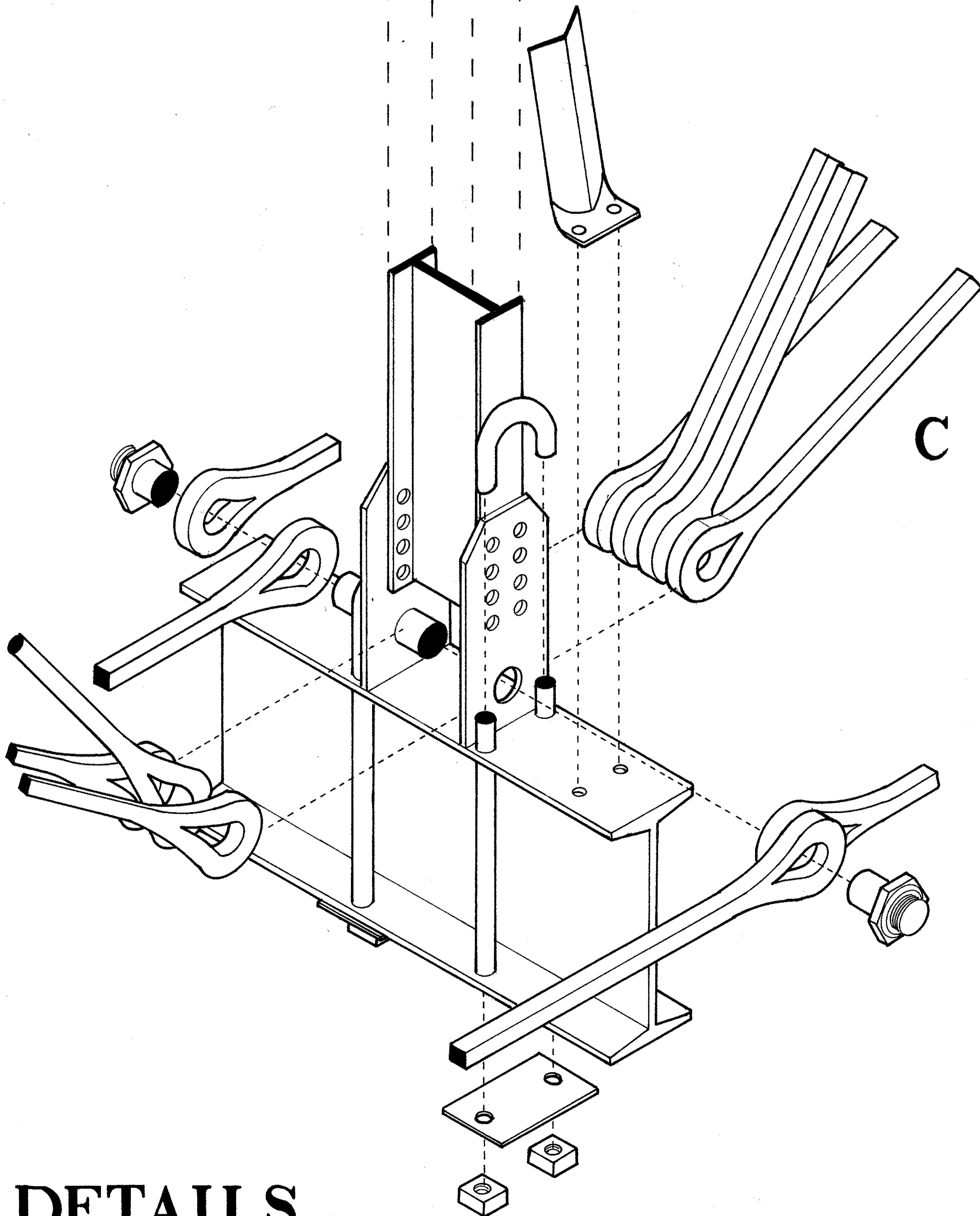
- 4" x 8" TOP CHORD I-SECTION
- 3/4" x 6" VERTICAL I-SECTION
- CAST STEEL HOOK CLIP
- 5 1/2" x 12 3/4" REINFORCING PLATE
- 2-7/8" SQ. DIAGONAL RODS
- 1 3/4" Ø THREADED PIN
- 2-3 1/2" HEX NUTS
- 2" NOTCH



B

SHOE/TOP CHORD CONNECTION

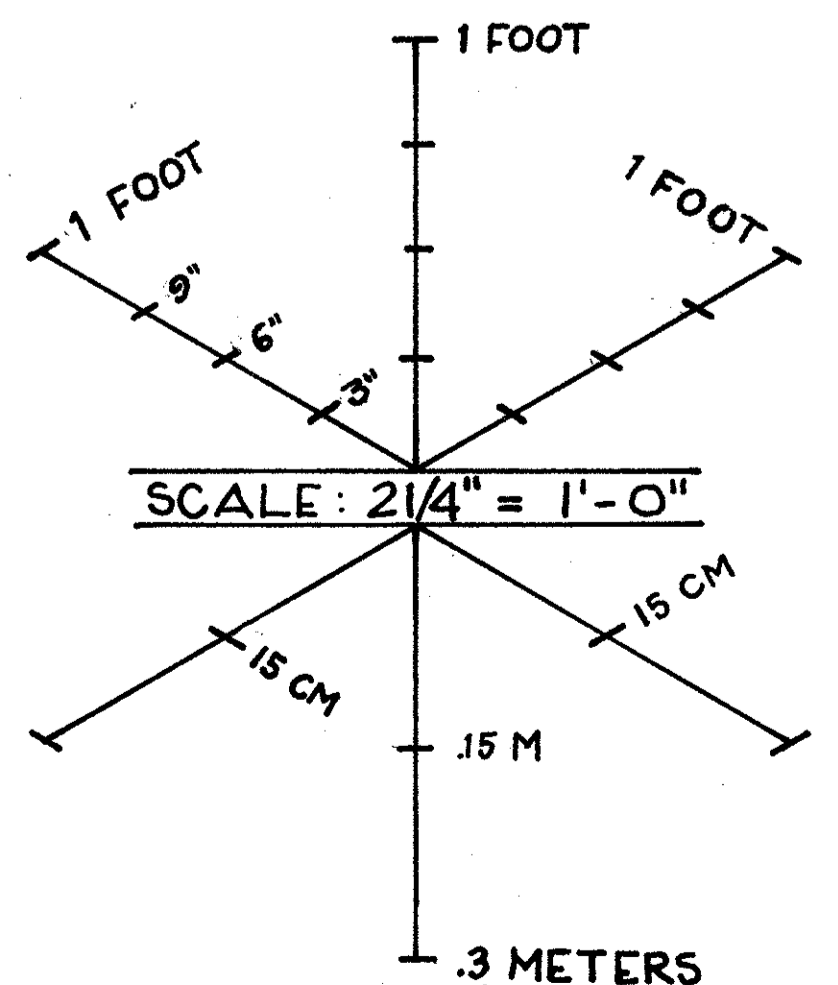
- 4" x 8" TOP CHORD I-SECTION
- 2-1" SQ. BOTTOM CHORD MEMBERS
- 1 3/4" Ø THREADED PIN
- 1" Ø LATERAL BRACING
- 2-3 1/2" HEX NUTS
- 2-1 3/4" HEX NUTS
- CAST STEEL SHOE



C

VERTICAL/BOTTOM CHORD CONNECTION

- 6" x 15" FLOOR BEAM I-SECTION
- 3/4" x 6" VERTICAL I-SECTION
- 4-1" SQ. BOTTOM CHORD MEMBERS
- 6-7/8" SQUARE DIAGONAL BRACING
- 2 1/8" x 2 1/8" OUTRIGGER
- 2-5 1/2" x 12 3/4" REINFORCING PLATES
- 1 3/4" Ø THREADED PIN
- 2-1 1/2" Ø BEAM HANGERS
- 2-4 1/2" x 7" BEAM HANGER PLATES
- 1/4" Ø DIAGONAL BRACE
- 2-3 1/2" HEX NUTS
- 4-2" SQUARE NUTS



DETAILS

DELINEATED BY: DAVID E. JAMISON, 1987

WISCONSIN BRIDGE RECORDING TEAM
HISTORIC AMERICAN ENGINEERING RECORD
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

McGILVRAY ROAD BRIDGE No. 1, 1906
SPANNING THE BLACK RIVER AT THE ENTRANCE TO THE WILDLIFE AREA 9 MILES NORTH OF LA CROSSE ON COUNTY RD. XX
VAN LOON WILDLIFE AREA LA CROSSE COUNTY WISCONSIN

SHEET
3 OF 3

HISTORIC AMERICAN
ENGINEERING RECORD
WI - 22

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