

Terminal Railroad Association Collection

Scope and content

The Terminal Railroad Association Collection consists of 570 original drawings of the Eads Bridge. We do not have corporate records of the Terminal Railroad Association, nor we have personnel files related to the building of the Eads Bridge.

Historical note re: Eads Bridge

Begun in 1867 and completed in 1874, the Eads Bridge was named after its designer, James Buchanan Eads. It was the first bridge to span the Mississippi at St. Louis, the first bridge to make significant use of steel, and one of the first bridges in the U.S. to make use of pneumatic caissons (the caissons sunk for the bridge are still among the deepest ever). It was also the first bridge to be built entirely using cantilever construction methods, avoiding the need for falsework, and the first bridge designed so that any part could be removed for repair or replacement. The bridge is now a National Historic Landmark.

Source of acquisition

The 570 drawings which make up the Terminal Railroad Association Collection were placed on deposit at Washington University in 1974 by the Terminal Railroad Association. A deed of gift turning over these drawings to Washington University was executed in June 1997. An additional 93 drawings of the bridge are owned by the American Bridge Company, Pittsburgh, Pennsylvania and housed at Washington University. In this inventory, all of the Eads Bridge drawings, from both Terminal Railroad and American Bridge Company, have been brought together in order to facilitate their use. A separate inventory containing only the 93 American Bridge drawings is available.

Organization and arrangement:

Each of the drawings is individually numbered and described. No attempt has been made to organize the drawings by date, portion of the bridge covered, etc. The following information is given for each drawing.

- Drawing number: Unique number, assigned by W.U. for identification purposes; will have the form "TR-#"
- Title of drawing: Description of drawing by the original architects; copied verbatim from the drawing.
- Scale of drawing
- Date of drawing
- Signature which appears on the drawing: Usually the name of either James Eads or Walter Katte, resident engineer for the Keystone Bridge Company, which fabricated and erected the bridge's superstructure.
- Microfilming note: If the word "Microfilmed" appears, then a microfilm copy exists of this drawing. All the microfilmed drawings are available on one reel of film housed in the Washington University Archives.
- Dimensions of drawing

If any of these elements is missing from the description, it means that the information does not appear on the drawing.

Restrictions on access

No restrictions on access. Because of their age and physical condition, the original drawings are not available via Interlibrary Loan.

Microfilmed Drawings: Reproductions of 208 drawings exist on one reel of microfilm, which is housed in the University Archives. The reel of microfilmed drawings is available for ILL purposes. Microfilmed drawings are listed on a separate inventory.

Digitized Drawings: Digital reproductions exist for 48 of the drawings. Digitized drawings are listed on a separate inventory.

Terminal Railroad Association Collection

Inventory of Eads Bridge Drawings at Washington University
Processed by Catherine Forslund, 1995

Section 1: Drawing numbers 1-100

- TR-1 #40: Eye-plates connecting struts with steel-pins and wrought iron nuts & washers for steelpins, including list of eye-plates connecting struts with steel-pins of upper members
Scale: 1/4 and 1/8 full size
Date: 1/31/1871; received at St. Louis, 2/10/1871 by Walter Katte (Engineer, Keystone Bridge Company)
Microfilmed
Size: 27x20
- TR-2 #46: Showing mode of supporting the railway on joints 7 & 34 of side spans and 8 & 36 of centre span
Scale: 1/8 full size
Date: 1/18/1871
Signed: Eads
Microfilmed
Size : 27x20
- TR-3 #39: Wrought iron tension-rods between struts, including bracing between struts and table showing the values of "I"
Scale: 1/8 inch=1 foot, 1/8 and 1/4 full size
Date: 1/23/1871; received at St. Louis, 2/10/1871 by Walter Katte
Microfilmed
Size: 27x20
- TR-4 #31: Showing mode of supporting crossbeams of railroad on joints 9 & 10 of side spans
Scale: 1/8 inch=1 foot
Date: 12/24/1870; received at St. Louis, 1/5/1871 by Walter Katte
Signed: Eads
Microfilmed
Size: 27x20
- TR-5 #38: Showing mode of supporting railway at joints (0-7) & (37-44) middle span and (0-6) & (35-42) side spans
Scale: 1/8 full size
Date: 1/9/1871
Signed: Eads
Microfilmed
Size: 27x20

- TR-6 #31: Showing mode of supporting the crossbeams of railroad on joints 9 & 10
of side spans
Scale: 1/8 inch=1 inch
Date: 6/20/1871; received at St. Louis, 8/23/1871 by Walter Katte
Microfilmed
Size: 27x20
- TR-7 #30: Support of crossbeam of lower roadway at joint #s 10 & 34 and 11 & 33
(centre span)
Scale: 1/8 full size
Date: 12/22/1870; received at St. Louis, 1/5/1871 by Walter Katte
Signed: Eads
Microfilmed
Siz: 27x20
- TR-8 #3 (revised): Wrought iron skewbacks for upper members (24 pieces required)
Scale: 1/8 full size
Date: 10/7/1871
Microfilmed
Size: 27x20
- TR-9 #36: Struts made of 9" channelbars (88 pieces required)
Scale: 1/8 full size
Date: 1/20/1870; received at St. Louis, 2/10/1871 by Walter Katte
Micofilmed
Size: 40x27 (in 2 pieces--very fragile)
- TR-10 #29 (revised): Suspension rods
Scale: 1/4 full size
Date: 8/1/1871; received at St. Louis, 8/23/1871 by Walter Katte
Microfilmed
Size:27x20
- TR-11 #s 21 and 21 (revised): Tension rods between steel ribs with connecting straps
and bolts (steel) for middle span and side spans
Scale: 1/8 full size
Date: 4/11/1872
Microfilmed
Size: 26x20

- TR-12 #14 (revised): Wrought iron bars for braces of middle span
Scale: 1/12 full size
Date: 9/12/1870; received at St. Louis, 9/19/1870 by Walter Katte
Microfilmed
Size: 27x20
- TR-13 #5: Wrought iron bars for braces of middle span
Scale: 1/12 full size
Date: 5/23/1870
Signed: Eads (crossed out, "Note-change in diameter of heads made as per instructions of J.B. Eads See letter of J.B. Eads to Walter Katte June 25th 1870")
Microfilmed
Size: 27x20
- TR-14 #11: Tension rods between steel ribs of middle span with connecting straps and bolts
Scale: 1/8 full size
Date: 6/25/1870
Signed: Eads (crossed out)
Microfilmed
Size: 27x20
- TR-15 #11 (revised): Tension rods between steel ribs of middle span with connecting straps and bolts (steel)
Scale: 1/8 full size
Date: 10/6/1870; received at St. Louis, 10/30/1870 by Walter Katte
Microfilmed
Size: 27x20
- TR-16 #10 (revised): Eyeplate washers for middle span (steel)
Scale: 1/4 full size
Date: 10/3/1870; received at St. Louis, 10/24/1870 by Walter Katte
Microfilmed
Size: 27x20
- TR-17 #8: Steel pins for lower members of middle span 176 pieces exclusive skewback pins)
Scale: 1/4 full size
Date: 6/17/1870
Microfilmed
Size: 27x20

- TR-18 #7 (revised): Steel pins for upper members of middle span (172 pieces exclusive skewback pins)
Scale: 1/4 full size
Date: 9/15/1870; received at St. Louis, 9/19/1870 by Walter Katte
Microfilmed
Size: 27x20
- TR-19 #48 (revised): Showing mode of supporting the railway at joint 33 (side span)
Scale: 1/8 full size
Date: 8/11/1871; received at St. Louis, 8/23/1871 by Walter Katte
Microfilmed
Size: 27x20
- TR-20 Joint A1 of middle span
Scale: 1/4 full size
Microfilmed
Size: 26x20
- T-21 (revised): Anchor bolts for steel ribs, a. bolts through piers and b. bolts in abutments and cast iron anchor plates in abutments
Scale: 1/8 full size
Microfilmed
Size: 27x20
- TR-22 #3: Wrought iron anchor bolts and skewbacks for abutments
Scale: 1/8 full size
Date: 7/21/1871
Microfilmed
Size: 27x20
- TR-23 Details of connections with struts for wrought iron tension rods, revised from drawing 39 of 10/2/1873
Scale: 1/2 full size
Microfilmed
Size: 22x20
- TR-24 Details of connections with struts for wrought iron tension rods, revised drawing 39 of 10/1/1873
Scale: 1/2 full size
Microfilmed
Size: 16x19

- TR-25 #44: Anchorage of wind-truss of upper roadway at piers (4 sets required)
Scale: 1/2 inch=1 foot
Date:12/29/1870; received at St. Louis, 1/5/1871 by Walter Katte
Microfilmed
Size: 27x36 (folded)
- TR-26 #74: Diagram showing lengths of tubes and braces near centres of spans (includes spans 1-3)
Scale: 1 inch=4 feet
Date: 2/5/1873
Microfilmed
Size: 27x20
- TR-27 #71: Crossbeams of lower roadway in centre part of spans (includes middle and side spans)
Scale: 1/16 full size
Date: 10/25/1872; received at St. Louis, 12/5/1872
by Walter Katte
Microfilmed
Size: 27x20
- TR-28 #70: Lateral stiffening of support member of outer ribs in centre part of spans
Scale: 1/2 inch=1 foot and 1/4 full size
Date: 7/24/1872; received at St. Louis, 8/7/1872 by Walter Katte
Microfilmed
Size: 25x20
- TR-29 Rear view of bedplates for upper and lower members
Scale: 1/8 full size
Date: 3/7/1871
Microfilmed
Size: 23x15
- TR-30 Rear view of bedplates for upper and lower members
Scale: 1/8 full size
Date: 3/7/1871
Microfilmed
Size: 21x15
- TR-31 Eye plate washer for Eads Bridge, center span, upper tube B, panel point 15
Date: 11/13/1948
Microfilmed
Size: 11x9

- TR-32 Eads Bridge, main spans, repairs to rib braces
Date: 9/24/1947
Microfilmed
Size: 9x11
- TR-33 Eads Bridge, main spans, repairs to rib braces
Date: 7/1947
Microfilmed
Size: 18x11
- TR-34 Eads Bridge, steel eye plate washer for east span
Date: 6/16/1947
Microfilmed
Size: 20x16
- TR-35 Stirrup-Clamp, one right & one left
Scale: 1 1/2 inch=1 foot
Date: 4/28/1873
Microfilmed
Size: 26x13
- TR-36 Section of staves required for new tubes IC 18-19 and IB 19-20 to replace broken tubes
Date: received at St. Louis, 2/4/1874 by Walter Katte
Microfilmed
Size: 16x11
- TR-37 #60: Cornices for approaches, a. over levees and b. from levee to 3rd street
Scale: 1/12 full size
Date: 3/7/1871
Size: 27x20
- TR-38 #60 (revised): Cornices for approaches, a. over levees and b. from levee to 3rd street
Scale: 1/12 full size
Size: 27x20
- TR-39 #60 (revised): Cornices for approaches, a. over levees, b. from levee to 3rd street
Scale: 1/12 full size
Date: 6/3/1871
Size: 27x20
- TR-40 Ornamental castings on Main & 2nd Street bridges
Microfilmed
Size: 26x18

- TR-41 #47 (revised): Support of crossbeam of lower roadway at joint no. 8 (side span)
Scale: 1/8 full size
Date: 8/7/1871; received at St. Louis, 8/23/1871 by Walter Katte
Microfilmed
Size: 27x20
- TR-42 #8: Showing mode of supporting the railway at joint 33 (side span)
Scale: 1/8 full size
Date: 1/24/1871
Signed: Eads
Microfilmed
Size: 27x20
- TR-43 #49: Showing mode of supporting the railway at joints 9 & 35 (centre span)
Scale: 1/8 full size
Date: 1/17/1871
Signed: Eads
Microfilmed
Size: 27x20
- TR-44 #27A (revised): Full size section of wrought iron longitudinal beam and steel rail used in construction of railway, including table of lengths of beams for centre and side spans
Date: 7/27/1871; received at St. Louis, 8/23/1871 by Walter Katte
Microfilmed
Size: 27x20
- TR-45 #16 (revised): Sections of staves used for tubes in side spans
Date: 5/25/1871; received at St. Louis, 6/3/1871 by Walter Katte
Microfilmed Size: 27x20
- TR-46 #56: Joint A1 of middle span
Scale: 1/4 full size
Date: 2/8/1871; received at St. Louis, 2/10/1871 by Walter Katte
Microfilmed
Size: 27x20
- TR-47 #27B (revised): Full size section of wrought iron cross beam used in construction of railway, including table of lengths of beams for centre and side spans
Date: 7/27/1871; received at St. Louis, 8/23/1871 by Walter Katte
Microfilmed
Size: 27x20

- TR-48 #28: Construction of railway track in centre part of spans
Scale: 1/8 full size
Date 7/7/1870; received at St. Louis, 1/5/1871 by Walter Katte, with note "Returned to JBE May 16th 1871 W.K."
Signed: Eads
Microfilmed
Size: 27x20
- TR-49 #29: Suspension rods, including tables for centre and side spans
Scale: 1/4 full size
Date: 12/19/1870; received at St. Louis, 1/5/1871 by Walter Katte
Microfilmed
Size: 27x20
- TR-50 #28 (revised): Construction of railway track in centre part of spans
Scale: 1/8 full size
Date: received at St. Louis, 5/15/1871 by Walter Katte
Microfilmed
Size: 27x20
- TR-51 #35: Struts made of 8" channelbars (88 pieces required), including tables of side and centre spans specifications
Scale: 1/8 full size
Date: 1/23/1871; received at St. Louis, 2/10/1871 by Walter Katte
Microfilmed
Size: 27x40 (in 2 pieces--very fragile)
- TR-52 Cast iron bed plates and clamps for bridges across
Main Street, 2nd Street and alley between Main Street and 2nd Street
Scale: 1/2 full size
Date: 4/20/1871
Microfilmed
Size: 23x20
- TR-53 #33: Struts made of 6" channelbars (172 struts required), including tables of side and middle spans specifications
Date: 12/31/1870; received at St. Louis, 1/5/1871 by Walter Katte
Microfilmed
Size: 26x20
- TR-54 #34: Struts made of 7" channelbars (96 struts required), including tables of side and middle spans specifications
Date: 12/31/1870; received at St. Louis, 1/5/1871 by Walter Katte
Microfilmed
Size: 27x20

- TR-55 #45: Anchorage of wind-truss of upper roadway at abutments
Scale: 1/2 inch=1 foot
Date: 1/3/1871; received at St. Louis, 2/10/1871 by Walter Katte
Microfilmed
Size: 27x36 (in 2 pieces)
- TR-56 #71 (revised): Middle span joints 20-24 and side span joints 19-22
Date: 5/13/1873
Microfilmed
Size: 16x10
- TR-57 Details of cross beams, middle span joints 20-24 and side span joints 19-22, includes tables for middle and side spans specifications
Scale: 3/4 inch=1 foot
Date: 5/7/1873
Microfilmed
Size: 19x11
- TR-58 #73: Adjusting arrangement in central tubes for side spans (marked "Duplicate")
Scale: 1/4 full size
Microfilmed
Size: 30x17
- TR-59 #73 (revised): Adjusting arrangement in central tubes for spans no. II & III
Scale: 1/4 full size
Date: 10/9/1873
Microfilmed
Size 30x19 (with left edge a separate piece)
- TR-60 Wrought iron skewbacks on piers
Date: 12/30/1870
Microfilmed
Size: 11x16
- TR-61 Wrought iron skewbacks on abutments
Date: 12/30/1870
Microfilmed
Size: 11x16

- TR-62 #47: Support of cross beam of lower roadway at joint no. 8 (side span)
Scale: 1/8 full size
Date: 1/18/1871
Signed: Eads
Microfilmed
Size: 27x20
- TR-63 #40: Eye plates connecting struts with steel pins and wrought iron nuts & washers for steel pins, including list of eye plates connecting struts with steel pins of upper members, notation; "Traced Sept 11, 1936"
Scale: 1/8 and 1/4 full size
Date: 1/31/1871; received at St. Louis, 2/10/1871 by Walter Katte
Microfilmed
Size: 27x20
- TR-64 #38 (revised): Showing mode of supporting railway at joints (0-7) and (37-44) middle span and joints (0-6) and (35-42) side spans
Scale: 1/8 full size
Date: 7/28/1871; received at St. Louis, 8/23/1871 by Walter Katte
Microfilmed
Size: 27x20
- TR-65 #32: Support of cross beam of lower roadway at joints #s 31 & 32 (side spans)
Scale: 1/8 full size
Date: 7/28/1871; received at St. Louis, 8/23/1871 by Walter Katte
Microfilmed
Size: 27x20
- TR-66 Position of anchor bolts in abutments
Date: 4/17/1871
Microfilmed
Size: 22x17
- TR-67 Pos[ition?] of skewbacks on west pier
Scale: 1/2 inch=1 foot
Date: 3/17/1871
Size: 51x53 (3/4 are folded together and 1/4 is a separate piece--very fragile)
- TR-68 #27: Full size sections of wrought iron beams and steel rails used in construction of railway, including tables of lengths of beams in centre and side spans
Date: 12/15/1870; received at St. Louis, 1/5/1871 by Walter Katte
Signed: Eads
Microfilmed
Size: 27x20

- TR-69 #1: Cast iron bed plates for upper members (24 pieces required)
Scale: 1/8 full size
Date: 9/14/1870; received at St. Louis, 9/19/1870 by Walter Katte
Microfilmed
Size: 27x20
- TR-70 #2: Cast iron bed plates for lower members (24 pieces required)
Scale: 1/8 full size
Date: 9/14/1870; received at St. Louis, 9/19/1870 by Walter Katte
Microfilmed
Size: 27x20
- TR-71 Wrought iron skewbacks for lower members (24 pieces required)
Microfilmed
Size: 27x20
- TR-72 #4: Wrought iron skewbacks for lower members (24 pieces required)
Date: 9/6/1870; received at St. Louis, 9/19/1879 by Walter Katte
Microfilmed
Size: 27x20
- TR-73 #12 & 22 (revised): Wrought iron sleeve couplings connecting tubes
Scale: 1/4 full size
Microfilmed
Size: 27x20
- TR-74 #12 & 22 (revised): Wrought iron sleeve couplings connecting tubes
Scale: 1/4 full size
Microfilmed
Size: 27x20
- TR-75 #24: Wrought iron bars for braces of side spans
Scale: 1/12 full size
Date: 9/26/1870; received at St. Louis, 10/24/1870 by Walter Katte
Microfilmed
Size: 27x20
- TR-76 #23: Skewbacks and pins for side spans (for upper and lower members)
Scale: 1/4 and 1/8 full size
Date: 10/17/1870; received at St. Louis, 10/24/1870 by Walter Katte
Microfilmed
Size: 27x20

- TR-77 #12 & 22 (revised): Wrought iron steel couplings, including table showing number of pieces required
Scale: 1/4 full size
Date 2/3/1873
Microfilmed
Size: 27x20
- TR-78 #12 (revised): Steel sleeve couplings connecting tubes of middle span
Scale: 1/4 full size
Date: 11/15/1870
Microfilmed
Size: 27x20
- TR-79 #22 (revised): Steel sleeve couplings connecting tubes of side spans
Scale: 1/4 full size
Date: 11/17/1870
Microfilmed
Size: 27x20
- TR-80 #22: Steel sleeve couplings connecting tubes of side spans
Scale: 1/4 full size
Date: 10/18/1870
Signed: Eads and Keystone Bridge Co. J.W.W. 11/10/1870, Eads signature crossed out and additional notation "Returned by the Keystone Bridge Co. Dec. 8, 1870 (date of receipt in St. Louis)"
Microfilmed
Size: 27x20
- TR-81 #10 & 20 (revised): Eye plate washers for middle and side spans (steel)
Scale: 1/4 full size
Date: 4/13/1872
Microfilmed
Size: 27x20
- TR-82 #20: Eye plate washers for side spans (steel)
Scale: 1/4 full size
Date: 10/14/1870; received at St. Louis, 10/24/1870 by Walter Katte
Microfilmed
Size: 27x20
- TR-83 #19: Tubes for side spans
Scale: 1/8 and 1/4 full size
Date: 8/12/1870; received at St. Louis, 9/19/1870 by Walter Katte
Microfilmed
Size: 27x20

- TR-84 #18: Steel pins for lower members of side spans (336 pins exclusive skewback pins)
Scale: 1/4 full size
Date: 7/18/1870; received at St. Louis, 9/19/1870 by Walter Katte
Microfilmed
Size: 27x20
- TR-85 #17: Steel pins for upper members of side spans (328 pieces exclusive of skewback pins)
Scale: 1/4 full size
Date: 10/4/1870; received at St. Louis, 10/24/1870 by Walter Katte
Microfilmed
Size: 27x20
- TR-86 #16: Sections of staves used for tubes in side spans
Date: 7/8/1870; received at St. Louis, 9/19/1870 by Walter Katte
Microfilmed
Size: 27x20
- TR-87 #13 (revised): Skewback tubes and pins for middle span (for upper and lower members)
Scale: 1/8 and 1/4 full size
Date: 9/25/1870; received at St. Louis, 10/10/187 by Walter Katte
Microfilmed
Size: 27x20
- TR-88 Plate I: Showing the influence of variable loads on the ribs of central arch (520 feet span), including suppositions made for the calculation
Microfilmed
Size: 27x18
- TR-89 Plate II: Showing the influence of temperature on the upper and lower member of a rib of centre span, including suppositions made for the calculations
Microfilmed
Size: 19x16
- TR-90 Plate II: Showing the influence of temperature on the upper and lower member of a rib of centre span, including suppositions made for the calculations
Microfilmed
Size: 19x16

- TR-91 Plate III: Showing the strains in the braces (of centre span), including suppositions made for the calculations
Microfilmed
Size: 27x20
- TR-92 Loading diagram of train used in making tests on main spans of Eads Bridge, with average weight of train=4,153# per foot
Date: 7/9 & 10/1929
Signed: A.F.C.
Size: 31x9 (in two pieces)
- TR-93 Eads Bridge center span 1874-1928, influence lines-web members for diagonals inclining toward crown
Scale: 1 inch=0.3 stress
Date: 11/15/1941; traced from blue print
Signed: J.M. Johnson
Size: 15x8
- TR-94 Eads Bridge center span 1874-1928, influence lines-upper tube unit load at panel points
Scale: 1 inch=unity stress
Date: 1/17/1942; traced from blue print
Signed: J.M. Johnson
Size: 15x8
- TR-95 Eads Bridge center span 1874-1928, influence lines-lower tube unit load at each panel point
Scale: 1 inch=unity stress
Date: 11/17/1941; traced from blue print
Signed: J.M. Johnson
Size: 15x8
- TR-96 #7: Steel pins for upper members of middle span (172 pieces exclusive skewback pins)
Scale: 1/4 full size
Date: 6/20/1870
Signed: Eads (crossed out)
Microfilmed
Size: 27x20
- TR-97 #5 (revised): Anchor bolts for steel ribs, includes bolts through piers, bolts in abutments, and cast iron anchor plates in abutments
Scale: 1/8 full size
Date: 9/12/1870; received at St. Louis, 9/19/1870 by Walter Katte
Microfilmed
Size: 27x20

- TR-98 (revised): Anchor bolts for steel ribs, includes bolts through piers, bolts in abutments, and cast iron anchor plates in abutments
Scale: 1/8 full size
Microfilmed
Size: 27x20
- TR-99 (revised): Anchor bolts for steel ribs, includes bolts through piers, bolts in abutments, and cast iron anchor plates in abutments
Scale: 1/8 full size
Microfilmed
Size: 27x20
- TR-100 #3: Wrought iron skewbacks for upper members (24 pieces required)
Date: 9/7/1870; received at St. Louis, 9/19/1870 by Walter Katte
Microfilmed
Size: 27x20