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Cooper Bridge Plan Collection (# 4709)

Series III. Drawings, Prints, Blueprints

Explanation of sequence: Entries appear in alphabetical order by **working title**. Original titles, whether or not they are the same as the working title, appear in quotation marks, following the working title. Original titles include both those that actually appear on the piece itself, and those that, at some point in the collection's history, had been noted on the verso of some untitled pieces. Working titles were determined according to the following criteria:

Proper name of bridge, if that is either the same as, or appears in, the original title of the item, e.g., **Blue River Bridge** for "General Plan of Blue River Bridge"; also, if the proper name is known, even if it is not explicit on the item;

Proper name of bridge *type* (or of eponymous individual) if that is either the same as, or appears in, the original title, or is known, e.g., **Pratt truss bridge** for "Plan of draw, Newburyport ..."; **Fink triangular truss bridges ...** for "Bridges on the B. & O. ... by Albert Fink";

Name of town or of waterway; e.g., **Easton bridge** for "Highway bridge...at Easton, Pa."; **Jones' Falls bridge** for "N. C. Ry. Bridge over Jones' Falls";

Name of railroad, if that is the most prominent or the only proper name in the original, e.g., **New York Central & Hudson River RR...Bridge** for "N.Y.C. & H.R.R.R. ... Bridge #307"

Bridge type or bridge part, in absence of any proper names

Entries that are part of composite items (more than one bridge per plan) are indicated as such. Dimensions of each item are in approximate inches.

Note: Graphics that appear in Theodore Cooper's paper, *American Railroad Bridges* (**Transactions of the American Society of Civil Engineers**, 1889) are indicated by: **[ARB Pl. number]**

Housing: four very long blueprints are rolled up and in boxes: two are together in **Box 2**, and two additional ones are each in **Box 3** and **Box 4**; these three locations appear after their respective descriptions. All remaining plans are in fourteen map-case drawers, according to the following scheme:

First drawer: **duplicates** of some plans appearing elsewhere in collection; includes seven rolls of vellum and multiple copies of some o/s plans; in a few instances, although the image is identical, there are minor variations in title and/or annotations; [the seven duplicate vellum rolls are noted in brackets following their respective main entries in the

list]

Second-fifth drawers: Folder nos. 1-57, arranged as far as possible according to size (e.g., Folder # 1 is the smallest plan); some folders contain multiple pieces (several versions of the same bridge)

Sixth-fourteenth drawers: Folder nos. 58-102; plans not in folders, but encapsulated and mounted on foam boards. For efficiency, these items are also called Folders, which continue the numerical sequence of the preceding "real" folders.

Please note: some of these plans are in several pieces, identified, e.g., as "Folder 91-a" and Folder 91-b." Multiple pieces that are consecutive parts of one continuous plan are noted as such.

Barren River bridge, Louisville & Nashville RR: see: Fink triangular truss bridges .. *Folder 12*

Blue River Bridge "General Plan of Blue River Bridge. J.M. & I.R.R." ([Jeffersonville, Madison, & Indianapolis R.R.]; March 17, 1871; Louisville Bridge & Iron Co. side, bottom and x-sect. views of girders; also, "joint at foot of trussed braces" lower right: Am. Photo-Lithographic Co. N.Y. (Osborne's process.) Photolithograph on thin paper, 17.5 x 11.5; **[ARB PI. XIX]**
Folder 17

Bollman Patent Iron Suspension Truss Bridge "Bollman Patent Iron Suspension Truss Bridge Built by Wendell Bollman, Patapsco Bridge & Iron Works Established 1858 at Canton Office: No. 8 South Gay St. Baltimore" [compression members (chords and posts) of cast iron; tension members of wrought iron] Lithograph on thin paper, 19.5 x 13.5; 4 cc. **[ARB PI. XII]**
Folder 14

Bollman Patent Iron Suspension Truss Bridge [untitled] Elevation of truss; cross-section; plan of floor bracing; plan of top bracing; intermediate post; pedestal; [per Prof. Tom Peters, 6/19/89: possibly Savage Bridge, near Bethlehem, Pa.] Print, 39 x 24
Folder 62

Brandywine Creek Bridge, New York & Erie RR, 1848 (Whipple) "Brandywine Creek Bridge, N.Y. & E.R.R., Susquehanna Div. Sec. 199. Designed and built by Squire Whipple C E 1848. Scale one inch to three feet." Elevation(?); plans of upper and lower chords; sections. [Third iron railroad bridge built in the U.S.] Print, 37.5 x 30.5
Folder 60

Bridge parts, specifications, and types (9 entries):

bridge parts: channels and ends of posts [untitled drawing in red and black, labelled: " 10" channels, 93 lbs. pr. yd."], 37.5 x 17.5

Folder 37

bridge parts: counter rod, plus: intermediate post, pedestal, suspension bars (2), upper chord panel [untitled drawing] Print on vellum, 38 x 25

Folder 46

bridge parts: joints [untitled drawing of metal (?) joints], 13 x 10

Folder 1

bridge parts: shoes, washers, posts [untitled diagrams of shoes, washers, and posts (side and top views)], 24.5 x 18

Folder 18

bridge parts: trusses [18 untitled diagrams of trusses, including details of joints, etc.]; 12 of the sheets are gummed together at one end, and 11 of them are signed by H. R. Clarke and Henry Alex; last sheet reads, after their signatures: "April 13 1861 Battle of F. Sumpter[sic] Charleston"; all 17.5 x 14

Folder 3

bridge specifications--force diagram "Alternative of Class B, Cooper's specifications." "Decbr 6th [18]87; Theodore Cooper, consulting engineer"; verso: untitled sketches of trusses; Marking in upper right corner: "10" Pencil drawing on browned paper, 37.5 x 24

Folder 47

bridge specifications: truss [untitled table of measurements for parts of truss (T.C., M.B., C.B., Post, and B.C.; i.e., chords, bars, and posts?) with 16 joints, with corresponding diagram of truss], 22.5 x 31

Folder 44

bridge type: drawbridge [untitled blueprint diagram of a drawbridge, side elevation] Blueprint, 23 x 12

Folder 4

bridge type: suspension [untitled color drawing of tubular (?) suspension (?) bridge]; "T. Cooper del." 27 x 18

Folder 25

Cascade Glen Arch, New York & Erie RR At Lanesboro, Pa. [Susquehanna Co.] "Cascade-Glen Arch. 275 ft. Span. Delaware Division N.Y. & E.R.R., 1848. Designed by Julius W. Adams Resident Engineer (1893 Past President & Honorary Member Am. Soc. C.E.)" Complete side view; additional plans & diagrams. Scale: 1/8 in. = 1 ft. Print in two consecutive pieces: 31.5 x 30.5; 23 x 30.5

Folders 59-a,b

[Duplicate: drawing on vellum (single piece, rolled), marked "Fig. 21," 24 x 51.5]
Duplicates drawer

Chemung River bridge "Wrought iron railroad bridge over the Chemung River at Elmira, N.Y. Erie Railway." Patented April 2d, 1872. Elevation of side truss; Elevation of Middle Truss; Plan of Lower Chord; Plan of Upper Chord. Built by the Phillipsburg Manufacturing Co., Phillipsburg, N.J., Daniel Runkle, President. [at bottom: "The Major & Knapp Eng., Mfg., & Lith. Co. 56 Park Place, N.Y."; Verso of c. 2 has autograph: "Jos. O. Dairs"] Print, 40 x 23; 2 cc.
Folder 30

Columbia Bridge over Schuylkill River [composite] "Columbia Bridge across the Schuylkill River near Peters' Island. Philadelphia & Columbia Railroad. Built about 1832." Elevation; 5 arches of 138 ft. span; 2 arches of 125 ft. span; X-sect. Print, with: **Salmon River bridge**, 36 x 31
Folder 61

Cumberland River Bridge, Louisville & Nashville RR "Cumberland River Bridge L. & N. R. R. Nashville Tenn." lower middle: "German & Bro.; Lith. Louisville, Ky"; lower right: "J. H. Pearson Del"; includes side view of entire bridge; half side, partial top, etc., view of a span;; details of beams and pins. Lithograph on tracing (?) paper, 22.5 x 17.5
Folder 19

David Lyman Viaduct--details, etc. "David Lyman Viaduct, New Haven, Middletown and Willimantic RR 1869" [from verso]: "Details of Connections for Combination Viaduct. Built November 1869 By Clarke, Reeves & Co., Now: The Phoenix Bridge Co. Phoenixville, Pa" Lower rt.: "J.J.E. Wolffe, 1893." Print in two pieces: 1) "Details of connections ... ," (28 x 31); 2) "Transverse sections of columns," (24 x 31)
Folder 64-a,b

David Lyman Viaduct--general plan "General Plan David Lyman Viaduct, New Haven, Middletown & Willimantic RR Built by The Phoenix Bridge Co. Phoenixville Pa. 1869. General elevation, Horizontal section at AB. . Middle piece also includes "Top view." Print in three consecutive pieces: 40.5 x 31; 24 x 25.5; 24 x 31
Folders 63-a,b,c

Dunkirk, Allegheny Valley & Pittsburgh R.R. Bridge "Dunkirk, Allegheny Valley & Pittsburgh R.R. Bridge at Youngsville, Pa." [Warren Co., nw Pa.] with notes: "To be erected 1893"; "Open-hearth steel-drilled"; "Note: Material 'Acid Open Hearth Steel.' Bent Angles and Bent Plates Annealed." "N. Y. C. & H. R. R. R. approved Mar 19 1892; G. H. Thomson [signature] Engr. of Bridges" and: "N. Y. C. & H. R. R. R. approved Mar 21 1892 [signature] Walter [Katte] [chief engr] (these two bracketed words cut off); Print in two pieces: 30.5 x 29; 17.5 x 28.5
Folder 66-a,b

Easton Bridge "Highway bridge over the river Delaware at Easton, Pa." [Northampton Co., east Pa.; to Phillipsburg, NJ] In black and red; n.d.; Built by Timothy Palmer; Pencil note at left side: "Cooper on Bridges." Drawing, 27.5 x 12.5 **[ARB PI. V]**
Folder 28

Easton Bridge "Highway bridge over the river Delaware at Easton, Pa. Built by Timothy Palmer." 1) "Section of bridge at centre"; 2) partial elevation, showing "Bolts 'c' fastened with keys"; 3) plan of chord "a" Print, with: **Schuylkill Permanent Bridge**, 24.5 x 14
Folder 28

Easton Bridge--elevation "Highway Bridge (covered) over the Delaware River at Easton, Pa.: Elevation of 1st half of 1st. Truss" Drawing, 40.5 x 13.5
Folder 35

Easton Bridge--side view "Highway Bridge (covered) over the Delaware River at Easton, Pa.: Side view of the Approach and the 1st half of 1st span; also front view and section" Drawing, 40.5 x 13.5
Folder 35

Economy bridge "Bridge 'Economy,' The Principle of which is across Neshaminy, on the Post Road from Philada. to N. York & over Frankfort Creek": with four other bridges on lithograph, "**Wernwag's Bridges**"
Folder 9

Elizabeth River bridge, Norfolk & Petersburg RR "Bridge over South Branch of Elizabeth River" ("Fig. 14" on: **Fink bridges on the Norfolk & Petersburg RR**)
Folder 10

Fink bridges on the Norfolk & Petersburg RR [composite] "Bridges on the Norfolk and Petersburg Rail Road. **Bridge over South Branch of Elizabeth River** (Fig. 14). **Bridge at Petersburg, Va.** (Fig. 16). **Bridge at Norfolk, Va.** (Fig. 18.)" [at upper right]: "Plate V. Entered according to Act of Congress in the year 1860 by Albert Fink." [shares sheet with **Green River Bridge**] Print, 25.5 x 19.5
Folder 10

Fink combination bridge [composite] 5 individual plans (plus details) on single sheet; one plan entitled "Fink Combination Bridge" **[ARB PI. XIV]**; the other four are each a duplicate of four separate pieces elsewhere in the collection: Whipple Trapezoidal Truss; Plan of Green River Bridge; 400 feet span of Ohio River Br. at Louisville; General Plan of Blue River Bridge. Printed at top right: "American Society of Civil Engineers, advance proof, Cooper on American railroad bridges." Print (4 cc.), 40 x 27
Folder 48

Fink triangular truss bridges, Baltimore & Ohio, 1860--plans, etc. "Bridges on the Baltimore and Ohio, and North Western Virginia Rail Road; on the Plan Patented by Albert Fink. [At upper right] "Plate L. Entered according to Act of Congress in the year 1860..." [35 separate figures: elevations, plans, sections, joint details, etc. of apparently 6 different unnamed bridges] ; Note at bottom center: "Lith of A. Hoen & Co. Balt" Print, 25.5 x 19.5

Folder 13

Fink triangular truss bridges, N. W. Virginia ... [composite], 1860 "Bridges on the North Western Va. and Louisville and Nashville R.R. on the plan patented by Albert Fink" [Upper right:] "Plate IIII. Entered according to Act of Congress in the year 1860 by Albert Fink.."; at bottom: "Lith. A. Hoen & Co. Balto." On North Western Virginia: **Tigarts Valley Br.** [a Bollman patent?] **Simpsons Creek Br. Middle Island Creek Br.** [Bollman?] On Louisville & Nashville: **Barren River Br.** [Bollman?] **Sulphur Fork Br.** [Bollman?] Print, 25 x 19.5

Folder 12

Fink triangular truss--details "Details of Fink Triangular truss." Includes diagrams of castings, trussed bars, end brace shoe. Print, 38 x 25.5

Folder 29

[Duplicate: drawing on vellum (one piece, rolled), marked "Fig. 25," 24.5 x 51.5]

Duplicates drawer

Goelzsch-Thal Viaduct, Saxony, 1845-1851 "Goelzsch-Thal Viaduct, over the Valley of the Goelzsch Creek, Saxony. Saxo-Bavarian R.R.. "Time of construction: 6 years; extreme height: 260 feet length over all: 1900 feet; cost: 7,000,000 Marks [\$1,680,000]" [with: **Kinzua Viaduct; Pecos River Viaduct**], Blueprint, 22 x 20

Folder 20

Green River Bridge "Plan of Green River Bridge Louisville & Nashville Rail Road" (full side view; "Fig. 1" on composite with **Fink bridges on the Norfolk & Petersburg Rail Road**) [part of ARB Pl. XV]

Folder 10

Gwynn's Falls Bridge Gwynn's Falls Bridge on the Washington Line of the Baltimore & Potomac Railroad; [Stamp on versos: "Made by Williams, Brown & Earle, N.E. Cor. 10th & Chestnut Sts., Phila.; Blue or blue on white prints."]; Stamped at lower right or left of each print: "Drawing No. Wilson Brothers & Co., Civil Engineers & Architects, Drexel Building, Phila."; 6 printed sheets of details, all in *Folder 31 (a-f)*

Gwynn's Falls Bridge--chord details "Chord Details of Gwynn's Falls Bridge on Washn Line B. & P. R. R. Long Span" no. stamped at bottom: "11017"; 38 x 24.5

Folder 31-a

Gwynn's Falls Bridge--compression members A-C "Details of Compression Memb'rs Gwynn's Falls Bridge on Washn Line B. & P. R. R"; no. stamped at bottom: "11019"; 38.5 x 24

Folder 31-b

Gwynn's Falls Bridge--compression members D-G "Details of Compression Memb'rs Gwynn's Falls Bridge on Washn Line B. & P. R. R"; no. stamped at bottom: "11020"; 37 x 24.5

Folder 31-c

Gwynn's Falls Bridge--floorsystem "Details of Floorsystem Gwynn's Falls Bridge on Washn Line B. & P. R. R"; no. stamped at bottom: "11022"; 37.5 x 25.5

Folder 31-d

Gwynn's Falls Bridge--intersections Details of Intersections Gwynn's Falls Bridge on Washn Line B. & P. R. R. Long Span"; no. stamped at bottom: "11015"; on verso, in pencil: "Gwynn's Falls Bridge Washington Line, B & P. R. R. ..."; 38.5 x 25

Folder 31-e

Gwynn's Fall Bridge--struts "Diagram and Details of Struts. Gwynn's Falls Bridge on Washn Line B. & P. R. R"; no. stamped at bottom: "11013"; 38 x 24.5

Folder 31-f

Harpers Ferry Bridge (timber), 1836 (Latrobe) [on verso:] "Harper's Ferry Bridge B. & O. R.R.. Designed by B. H. Latrobe. Built by Lewis Wernwag, 1836; General plan [crosses both Potomac R. and Chesapeake & Ohio Canal]; elevation of truss; cross-sections; plans; other details; verso: the title, plus circular stamp of Standard Sun Printing Co. Print, 41.5 x 30.5

Folder 82

Harpers Ferry Bridge (timber), 1836 (Latrobe) [untitled plans for a railroad bridge across the Potomac River from Harper's Ferry, Va. to Maryland (Chesapeake and Ohio Canal)]; Plans marked: "General plan. Elevation of truss C-D. Cross section of span C-D. Plan of span A-B. Details of cast iron shoes at "g" and "h" Plan of span B-C. Plan of span C-D." Drawing on vellum (rolled), marked "Fig. 20," 24 x 46

Duplicates drawer

Harpers Ferry Bridge (iron), 1852 (Bollman) "Winchester Span. Baltimore and Ohio Railroad. Designed by Wendel Bollman. Built 1852." Details of the trussing of floorbeams; post plate; suspender washer. Print, 17 x 26

Folder 65

Howe truss bridge [designed by William Howe; wooden] undated, but no earlier than 1840, when Howe patented it; ; Lithograph on heavy paper, 26 x 13.5, 2 cc.; Drawing on vellum, annotated "Cooper on bridges"; 26 x 13.5 **[ARB PI. XI]**

Folder 33

Howe truss bridge, iron, 1849 "Iron Howe Truss Bridge. Boston & Providence R.R.. Built by Stone & Harris, Springfield, Mass., 1849. Scale: 1/2in.=1FT"; Views: elevation of truss; cross-section; half plan; sections of brace and of top chord; double track; Print, 37.5 x 30
Folder 72

Howe truss bridge, modern type [1890] "Modern Type Arched Howe Truss. Wilson Brothers & Co. Engineers, Philadelphia. General scale 1/4in.=1FT. Scale of details: 3/4in.=1ft" elevation; plan of floor; lower & upper lateral bracing; cross-section; lower rt.: "Pontrichet's improved sunprint"; Print, 40.5 x 30.5
Folder 73

Howe truss bridge, 2d form, Salisbury, Ct., 1870 "Howe Truss Bridge at Salisbury, Conn. Built in 1870. By R.F. Hawkins. 130 ft. span. Presented by R.F. Hawkins' Iron Works. Springfield, Mass. Successors to Wm. Howe, Stone & Harris and Harris & Hawkins" 7 labelled sectional views: elevation; bottom plan; top plan; cross section; details, cast block; oak clamp. Print, 37 x 30.5
Folder 74

Howe truss bridge (first Howe railroad bridge), Springfield, Mass., 1838 "Howe Truss Bridge over the Connecticut River, Springfield, Mass. Built about 1838 by Wm. Howe. Presented by R.F. Hawkins' Iron Works Springfield, Mass. Successors to Wm. Howe, Stone & Harris and Harris & Hawkins"; 7 views: elevation; cross-section; details of bottom chord; longitudinal section; plan showing bottom chord; details of top chord; top plan. Lower rt.: "Pontrichet's improved sunprint"; Print, 38.5 x 30.5
Folder 71

[same as above] Blueprint, 34 x 30.5
Folder 70

Hudson River highway bridge: see: **Waterford Bridge**

Hudson River railroad bridge: see: **Town lattice truss**

Hudson River Tunnel "from description in *American Machinist* April 21st, 1881: longitudinal and cross section, showing new method of employing a caisson and completing the walls; also, method of driving pilot tunnel and removing the silt. Print, 17.5 x 19
Folder 21

Jones' Falls bridge, Northern Central RR "N. C. Ry. Bridge over Jones' Falls, Details of Diagram" [Jones' Falls, Maryland]; no. stamped at bottom unclear: "12881"?? shows elevations of trusses; x-section; Print, 41 x 24.5
Folder 51

Jordan Creek Viaduct (cast iron), 1856 (Lowthorp) "General Plan of the Jordan Creek Viaduct, for the Catasauqua & Fogelsville R.R. Designed constructed & erected by F.C. Lowthorp. Built 1856 Rebuilt 1889" [Catasauqua is in Northampton Co., Pa., near Allentown and Mauch Chunk; Fogelsville is in Lehigh Co., Pa.] Print In five pieces: entire longitudinal view; cross-section; views of base and of vertical members; 20.5 x 31.5; 39.5 x 31.5; 22 x 31; 15.5 x 31; 29 x 31.5

Jordan Creek Viaduct, 1889 (Chapman) "General Plan" [as above, followed by: "C. W. Chapman, spt. Engr. Designed, constructed & erected by Edge Moor Bridge Works, Edge Moor, Del. Built 1889" Print In two consecutive pieces; entire longitudinal view; 40.5 x 28; 37 x 31

[Apparent duplicate of above, plus cross-section and additional details: very long, rolled blueprint]

Box 3

Jordan Creek Viaduct two longitudinal views: top: "built 1856;" bottom: "built 1889;" noted at lower right corner: Wm. C. Bolgiano 1893;" stamped: "Pontrichet's improved sunprint" Print, 40.5 x 28

Kentucky River Bridge "Kentucky River Bridge. Cincinnati & Southern Railway. Designed and built by C. Shaler Smith, 1876-1877; verso: the title, plus circular stamp of Standard Sun Printing Co. [per **ARB**, p. 17: the first significant iron cantilever bridge; also known as Kentucky River High Bridge?]; Print in two pieces: 24.5 x 30.5; 25.5 x 30.5

Folders 80-a,b

Keystone Bridge Company (bridge details only) "The Keystone Bridge Company of Pittsburgh, Pa., manufacturers of Linville and Piper patent wrought iron bridges. Patented Jan. 14th 1862 and Oct. 31st 1865. Especially adapted to Rail Road Traffic for spans of 100 to 400 feet." Lithographer: Krebs & Bro. lith. Pittsburgh. Views: lower & upper chords; front elevation (showing insignia at center of arch: "Linville & Piper Patent 1868"); side elevation, etc. Print (damaged and fragile), 42 x 28

Folder 54

Kinzua Viaduct "Kinzua Viaduct, Penn'a. N.Y.L.E. & West. Coal & R.R. Co. [proposed]" <--[written in ink] [New York, Lake Erie & Western Coal & RR Company] "Time of construction & erection: 8 1/2 months extreme height: 302 feet length over all: 2052 feet cost: 275,000 dollars" Blueprint, with: **Goelzsch-Thal Viaduct; Pecos River Viaduct**, 22 x 20

Folder 20

Kinzua Viaduct--details of connections "Kinzua Viaduct Details of Connections. Design. and built by the Phenix [sic] Bridge Comp. Phoenixville, Pa" ; also shown: Transverse sections; Side elevation; Top of posts; Inclined posts; Intermediate connections; Center posts; Bottom of posts; signed: JJE Wolfe, Phenixville, 1893 Print,

31 x 40

Folder 93

Kinzua Viaduct--general elevation, 1882 "General Plan Kinzua Viaduct N.Y.L.E. & W.R.R. designed & built by the Phoenix Bridge Co. Phoenixville, Pa. 1882" entire longitudinal view of viaduct plus train; [Near Smethport, Kushequa, and Mt. Jewett in McKean County, nw Pennsylvania] Print in two consecutive pieces: 31 x 41; 31 x 40; [Both halves are from two different whole originals, so they overlap]

Folders 94-a,b

[Apparent duplicate of above: very long, rolled blueprint]

Box 4

Lancaster-Schuylkill Bridge "Lancaster-Schuylkill Bridge Over the River at Philadelphia. Single arch. Invented by Lewis Wernwag - Executed by him & Joseph Johnson. General Finish by R. Mills Esq" view of complete, covered bridge: "Drawn & Aquatinted by W. Strickland, Arch." General floor plan (?) of bridge (top view?); no dimensions or other notations: "W Kneass sc" [Also called: "Upper Ferry or Lancaster Schuylkill Bridge"]

Folder 5

Lehigh Coal and Navigation Company "Lehigh Coal and Navigation Cos. Rail Road Bridge at Turn hole. Broken April 1868 " Dated "Octb. 29th 1883" Signed "A.L" at bottom right; lower drawing shows site of break: broken section of floor gone, cables (?) flying loose. No markings. Print, 36 x 20

Folder 43

Lilandsosen bridge, Norway "Bro over Lilandsosen vel Bulken." [Bulken: small village near Voss, southwestern Norway; has railroad station]; Markings in black ink (mostly consisting of [metric] measurements), including "Railroad" along left side and "Scale 1/100" at top. Blueprint, 28 x 8.5

Folder 32

Little Juniata (cast iron arch Bridge "Little Juniata Bridge, No. 8, Pennsylvania [sic] Railroad. Designed by J.H. Linville. 1864." [in south central Pa.]; [Pratt truss with compressive arch]; 2 decks; spans 86-6 1/2 " clear"; elevation of truss; enlarged view of one panel of of truss; cross-section; other details; lower rt.: "Pontrichet improved sunprint"; Print, 39.5 x 30.5

Folder 83

Long's Truss bridge, 1st form, 1833 "Long's Truss Bridge, 1833 " double track; 6 separate views: side view of truss; plan (?) of truss; x-sect.; "post"; "main brace"; "counter brace"; verso: the title, plus circular stamp of Standard Sun Printing Co.; Print, 36.5 x 30.5

Folder 67

Long's Truss bridge, 2d form, 1837 single track, "2d form"; untitled, but 6 views correspond to those of "1833" above; Pen & ink drawing on vellum, 37.5 x 30.5; Print, 35.5 x 24

Folder 39

[Duplicate of above: Print, 35.5 x 24]

Folder 75

Lowthorp Truss bridge [1860], Lanesboro, Pa. Lowthorp Truss Bridge. Designed and patented by F.C. Lowthorp Trenton, N.J" 2 views: side of truss; plan (the track); stamp on verso: Standard Sun Printing Co. Print, 40.5 x 30.5 **[ARB PI. XXV]**

Folder 68

McCallum Truss Bridge. Lanesboro, Pa. "McCallum Truss Bridge. Lanesboro. N.Y. & E.R.R. Clear span 190 ft. Length of trusses 200 ft. out to out. Built 1851."

[Susquehanna Co] Elevation of truss; floor plan; x-sect.; etc. Print, 37.5 x 30.5;

Folder 76

[Duplicate of above: drawing on vellum (rolled), marked "Fig. 24," 24 x 35.5]

Duplicates drawer

Middle Island Creek Bridge, North Western Virginia Railroad. see: Fink triangular truss bridges on the North Western Va. and Louisville and Nashville ...

Folder 12

Milholland's boiler plate girder bridge "Earliest Boiler Plate Girder Bridge as originally erected on the Baltimore & Susquehanna Railroad now the Northern Central Railway, 1846-47 By its designer James Milholland of Baltimore MD"; 6 sections (i.e. views); w. note: "above boiler plate girders, as arranged and used for 'double-track' by the Northern Central Railway Company, from years 1864 to 1882." Blueprint, 28 x 22; Print, 30.5 x 26

Folder 24

Mohawk Bridge "Plan for the Mohawk Bridge at Schenectady" [with notations: Theodore Burr and James Murdoch, "Prest. M. B. Compy" [= Mohawk Bridge Company]; "Middle Pier with the Ice fender ..."; "A) front view of the Abutment with the ice brase"; "B) foundation of the Abutment with the wing walls "; Rough pen-and-ink sketch on vellum, 36 x 10

Folder 34

Mohawk Bridge "Mohawk Bridge at Schenectady, N.Y." Built by Theodore Burr; [wooden suspension bridge]; has 4 consecutive spans; Notes include: "1804"; "Copy of drawing attached to original contract" [See Corres.], "Cooper on Bridges"; Print (or pen and ink drawing?), 2 cc. **[ARB PI. VIII]**

Folder 34

Monongahela River bridge "Iron Bridge Over the Monongahela River on the Baltimore & Ohio R.Rd"; Constructed 1851-2 [wrought or cast iron?]; B.H. Latrobe, chief engineer; designed and patented by Albert Fink, assistant. Print, 24 x 19 [ARB PI. XIII]

Folder 6

New Hope bridge "Bridge over the Delaware at New Hope" see: Wernwag's Bridges (composite, with four other bridges)

Folder 9

New York Central & Hudson R. RR ... bridge ... Bronx R. "N.Y.C. & H.R.R.R. Harlem Div. Bridge No. 48 over Bronx River" Signed G. H. Thomson EB [engineer of bridges]; note: "O.H. Steel-drilled holes with Asphalt impact blocks" Print in two pieces: 16 x 29; 40 x 29.5

Folders 86-a,b

New York Central & Hudson R. RR ... bridge ... Castleton Station [Rensselaer Co., NY] "N.Y.C. and H.R.R.R. Bridge No. 341 near Castleton Station" near title, lower left: "approved Aug 4 1892 G.H. Thomson" and "approved Aug 5 1892 Walter Katte Chief Engr"; views: "general plan"; "General Details of Girders (Material O.H. [open hearth] Steel)"; "Intermediate Section"; "End View"; side view of total length of bridge [type? plate girder?] Print, 35.5 x 19.5

Folder 40

New York Central & Hudson R. RR ... bridge ...Erie Canal, Canastota [Madison Co., NY] "N.Y.C. & H.R.R.R. Double Track, Riveted Lattice Bridge over the Erie Canal at Canastota, N.Y., as originally built, 1865. Chas. Hilton, Engineer" 2 pieces; 3 sectional views: top lateral bracing; connection of floor beam to truss; floor and bottom lateral bracing; 4 views, incl. outer truss; Print in two pieces: 36 x 30; 40 x 30

New York Central & Hudson R. RR ... bridge ... Genesee River, Rush Junction , 1892 "New York Central & Hudson River R.R. , Can. & N. Falls Branch, Bridge #P30 over Genesee River near Rush Junction" [Rush is town in Monroe Co.; Canandaigua & Niagara Falls Branch] Signed: G. H. Thomson. NYC & HRR; approved Sep. 13 1892; signed Walter Katte, Chief Engr.; with notes: "Material wrought iron ...; Rivet holes drilled .." Print in two consecutive pieces: 28 x 27;

27 x 27

Folders 90-a,b

New York Central & Hudson R. RR ... bridge ... Kinderhook Creek at Stockport [Columbia Co., NY] "N.Y.C. & H.R.R.R. Hudson River Division Bridge #307 over Kinderhook Creek at Stockport, N.Y." Signed G.H. Thomson. Notations: "Note: all panel point plates to be cross rolled; all panel point plates to be drilled; all joints to be drilled"; "Note: rivet holes may be punched in Portals 7 Top Laterals; all materials of portals to be wrought iron"; "Top laterals to be wrought iron punched." Print in two consecutive pieces: 27 x 28; 24.5 x 28

Folders 95-a,b

New York, Lake Erie & Western RR ... bridge over Susquehanna 1891. N.Y.L.E. & W.R.R.. Bridge No. 73 Susquehanna Div. Scale 1/2 in.=1 foot. March 1893. Office of the Chief Engineer" Details of floorbeams, stringers, trusses and piers. Print in two pieces: 19.5 x 30.5; 37 x 20.5

Folders 77-a,b

New York, Lake Erie & Western RR ... miles of track "Miles of track owned, leased, and operated by the N.Y.L.E. & W.R.R.Co" [New York, Lake Erie and Western Railroad]; Chart on blueprint paper, dated September 30th, 1888. No author; no identifying marks. Blueprint, 29 x 17.5

Folder 36

Norfolk, Va., bridge at. ("Fig. 18" on: **Fink bridges on the Norfolk & Petersburg RR**)

Folder 10

Ohio River Bridge, Henderson, Kentucky "General design. Ohio River bridge. Henderson Ky." n.d. Blueprint, 44 x 7 (2 cc?)

Box 2

Ohio River Bridge, Louisville, Kentucky, 1868-70 (Fink) "400 Feet Span of the Ohio River Bridge at Louisville, Ky." Built by the Louisville Bridge & Iron Co.; upper left corner: "c.1"; lower right: "Patented by Albert Fink" lower rt., pencilled note: "Print the whole plate full size - can make two plates if desirable" Lithograph on thin paper, 22 x 17 **[ARB PI. XVIII]**

Folder 8

Patent bridge "Colossus" Print on vellum, 18 x 17

Folder 2

Patent bridge "Colossus" [composite] 11 individual plans, 8 of which also appear as separate pieces elsewhere in the collection; the 2 others are: "Schuylkill Permanent Bridge, built by Timothy Palmer" and "Patent Bridge 'Colossus' across the River Schuylkill at Philadelphia, built by Lewis Wernwag." Printed at right top: "American Society of Civil Engineers, advance proof, Cooper on American railroad bridges. Printed below drawing of Mohawk bridge at Schenectady, N.Y.: "Copy of drawing attached to original contract." Print, 40 x 27.2 cc. **[part of ARB PI. IX]**

Folder 49

Pecos River Viaduct "Pecos River Viaduct (Texas - Galveston, Harrisburg, & San Antonio Rail Road)" "extreme height: 302 1/2 feet length over all: 1662 feet"; lower rt., elliptical stamp: "The Phoenix Bridge Co. Apr 26 1888 Phoenixville, Pa.; lower ctr., square stamp: "The Phoenix Bridge Co. Phoenixville, Pa" Blueprint, with: **[Goelzsch-Thal Viaduct; Kinzua Viaduct]**, 22 x 20

Folder 20

Pecos River Viaduct , 1893 [untitled diagram identical to above; initials on one of the train's cars are: "G.H.S.A.R.R."] Shows entire longitudinal view of the bridge; second piece also shows general elevation and top view; third piece shows transverse elevation of Bent "AA" and has signature: J.J. E. Wolfe; Phoenixville, Pa., 1893. Print in three consecutive pieces (2 cc. each): 14 x 25; 36 x 25; 39 x 25

Pecos River Viaduct--details, 1891 [on verso of c.2:] "Pecos River Viaduct. Galveston, Harrisburg & San Antonio RR. So.(?) Pao.(?) Co. Details of Connections. Designed & built by the Phoenix Bridge Co. Phoenixville Pa. 1891" Print in two pieces (3 cc. each): 1) "Transverse section through tower" (19.5 x 24); 2) "Longitudinal elevation; Connections of vertical center posts with intermediate longitudinal struts" (27 x 24)

Folders 96-a,b

[cc. 2-3 are in Duplicates drawer]

Penn Bridge and Machine Works "Penn Bridge and Machine Works. New Brighton, Pa. T. B. White and Sons. Proprietors" [bowstring arch-truss bridge?]

Note at bottom right: "Am. Photo-Lithographic Co. N.Y. (Osborne's process)"
Lithograph, 24 x 16.5, 2 cc.,

Folder 7

Petersburg, Virginia, bridge at. ("Fig. 16" on: **Fink bridges on the Norfolk & Petersburg RR**)

Folder 10

Pittsburg, Cincinnati & St. Louis RR bridge--chord bars "Channel Span: Bridge No. 30- P.C. & St. L. Ry. - Plan of Chord Bars" [Pittsburg, Cincinnati & St. Louis Railway, now Penn. RR]; [Dec. 1888]. Blueprint, 19 x 5

Folder 38

Pittsburg, Cincinnati & St. Louis RR bridge--truss diagram "Channel Span of Bridge 30: P.C. & St. L. Ry. Chief Engineers Office Dec. 4th. '88" incl.: "Truss Diagram"; details of side & end views of truss; "Table of Strains..." Blueprint, 38 x 17.5

Folder 38

Portage Viaduct (timber), 1852 [at border of Livingston and Wyoming Counties ?, NY] "Viaduct across the Genesee River at Portage, N.Y. Buffalo and New York City Railroad" [N. Y. L. E. & W. R. R.] Built 1852. Silas Seymour, Chief Engineer. Print in two pieces: (1): side view showing General Elevation (33 x 30.5); (2) side view of towers; end view of towers (23 x 30.5)

Folders 69-a,b

Post's patent diagonal truss combination bridge "Post's patent diagonal truss

combination bridge" Lithograph on thick paper, no date; Boomer Bridge Works, L.B. Boomer, proprietor... Chicago, Ill. A.W. Hubbard, del. Lith. by Hani & Morgan, Pittsburgh, Pa.; Views: full side elevation; plans of chords, etc.; No markings; Large diagonal tear at left bottom (6"); Print, 40 x 26.5

Folder 52

Post's patent diagonal truss iron bridge, ca. 1860s "Post's patent diagonal truss iron bridge" Views include: entire side elevation; plans of lower & upper chords; end elevation; end posts. Boomer Bridge Works, L.B. Boomer, proprietor; Chicago, Ill. A.W. Hubbard, del. Lith. by Hani & Morgan, Pittsburgh, Pa. Notation on verso: "Cooper Am. RR Bridges" Lithograph on thick paper, 40 x 26.5

Folder 53

Post's truss bridge, New York and Erie RR "First Example Post's Truss Bridge. South Washingtonville, N.Y. Newburgh Branch, N.Y. & E.R.R.. Built by S.S. Post 1865 ." Elevation of truss; top laterals, cross-sxn., etc. Print, 37.5 x 30.5

Folder 78

Pratt truss bridge, over Merrimac River, Eastern RR "Plan of Draw, Newburyport Bridge, Eastern Railroad, April 1877" Drawing, 45 x 28

Folder 55

Pratt truss bridge, over Merrimac River, Eastern RR [title on verso, hidden by conservation work:] "Pratt Truss Bridge over the Merrimac River at Newburyport, Mass. on the Eastern Railroad, Built 1877" Elevation of truss; plan of top chords and floor; cross-section, etc. Print, 37 x 30

Folder 79

Rockville Bridge (wooden arch), Pennsylvania RR [in Dauphin Co., Pa., north of Harrisburg] "Pensylvania [sic] Railroad Bridge over the Susquehanna River at Rockville; Built 1848-1849; total length 3682 ft.; J. Edgar Tompson, Chief Engineer"; Side view of entire bridge; plan; elevation of one span; marked "Pontrichet's improved sunprint"; Print in two consecutive pieces: 37.5 x 30.5; 24.5 x 30.5

Folders 85-a,b

[Duplicate: drawing on vellum (rolled), marked "Fig. 22," 24.5 x 58.5]

Duplicates drawer

Salmon River bridge "Bridge across Salmon River Malone N.Y. Northern Railroad. 1849" [Franklin Co., NY] 8 views/sections: Elevation; x-sect.; part side elev. of truss; sect. through lower chords, etc. Print, with: **Columbia Bridge**, 36 x 31

Folder 61

Schuylkill Permanent Bridge "Schuylkill Permanent Bridge" Built by Timothy Palmer; Pencilled note at left side: "Cooper on Bridges"; Color drawing, 25 x 13 **[ARB PI. IV]**;

Folder 28

[Also appears in composites, with: **Easton Bridge; Patent Bridge "Colossus," and Wernwag's bridges**]

Simpsons Creek Bridge: see: Fink triangular truss bridges, North Western Virginia RR

Folder 12

Steubenville Bridge--channel span "Channel Span Steubenville Bridge. Built 1863-64. Designed by J. H. Linville C.E." Elevation of truss; details of side view of end of bridge; half cross-section [truss type? Linville's long-span truss?] Print, 40.45 x 30.5

Folder 81

Steubenville Bridge--details of end posts "Details of end posts Spans 1-2-3 & 5 to 8 - Steubenville bridge" [n.d., but prob. 1863-64, J. H. Linville] Blueprint, 16.5 x 18.5

Folder 45

Steubenville Bridge--details of front posts "Steubenville Bridge Span No. 4 Details of front posts" "June 13th 1853 - as applied to Monongahela bridge" Blueprint, 35 x 25.5

Folder 45

Sulphur Fork Bridge see: Fink triangular truss bridges ... Louisville & Nashville RR

Folder 12

Suspension truss bridge ... Troy & Greenfield RR "Suspension truss bridge as designed for the Troy & Greenfield R. R. by H. Haupt C. E." "T Cooper del." [n.d.] print [or aquatint?], 27 x 18

Folder 27

Susquehanna River bridge, Baltimore & Ohio RR "General Design for Susquehanna River Bridge Philadelphia Branch B. & O. R.Rd. Submitted by Keystone Bridge Co. Pittsburg. Pa. Jan 17th. 8[?]⁴ [or 94?]; initials, lower right: "W. B." [Looking north toward side of bridge; 9 spans over the river, and spans over land; 11 piers]. Blueprint, 67 x 9

Box 2

Susquehanna River bridge, New York & Erie RR, 1849 (Adams) "Bridge over East Branch of Susquehanna River. Section 179. Susquehanna Division. N. Y. & E. R. R., 1849. Julius W. Adams, Resident engineer"; Dimensions and other notes added in ink. Print, 40 x 31

Folder 89

[Duplicate: drawing on vellum (rolled), marked "Fig. 23"]

Duplicates drawer

Tennessee River bridge, 1866 (Fink) "Bridge over Tennessee River on the Memphis and Charleston R.R. at Decatur, Ala. 1866. Erected by the Louisville Bridge and Iron Co. on Fink's Triangular Plan." Side view of entire bridge, across channel; side, top, bottom views and x-sect. of girder (?); diagrams of joints. At lower left: "Entered according to Act of Congress, in the year 1866, by Albert Fink in the Clerk's Office of the District Court of Kentucky" lower middle: "German & Bro. Lithg. Lou. Ky."; lower right: "F. W. Vaughan Del."; Lithograph on thin paper, 22.5 x 17.5; 3 cc.

Folder 15

Tigarts Valley Bridge: see: Fink triangular truss bridges, North Western Virginia RR

Folder 12

Town lattice truss [designed by Ithiel Town]; 3 views: cross-section; side elevation; plan. Print, 20 x 21, 2 cc. **[ARB PI. X]**

Folder 22

Town lattice truss "Railroad bridge over the Hudson at Troy, N.Y." "T Cooper del." 1861. Color print, 26 x 18

Folder 26

Town lattice truss (wooden), 1851 "Town's Lattice Bridge over the Hudson River at Troy, N.Y. Built 1851." four unlabelled views: elevation (incl. piers), floor plans (two), cross-section. [verso has]: title, a circular stamp, and mss note: "Bridges on a similar plan were built as early as 1820." Print, 37.5 x 30.5

Folder 87

Tray Run Viaduct "Tray Run Viaduct. Baltimore and Ohio Railroad. Constructed 1853. Albert Fink, Engineer." [near Rowlesburg, in Preston County, West Virginia]. Longitudinal view of entire bridge. Print in two consecutive pieces: 32 x 30.5 and 38 x 30.5. [Both halves are from two different whole originals, so they overlap] [scanned 2007]

Folders 92-a,b

Trenton (arch) Bridge Built 1804; reconstructed 1848 and 1869; Theodore Burr, engineer. Print on gray paper (n.d., 2 cc.), 36 x 24 **[ARB PI. VII]**

Folder 50

[Duplicate: drawing on vellum (rolled), marked "Fig. 17," 24 x 45.5] *Duplicates drawer*

Trenton Falls Bridge--full view "Trenton Falls Bridge 200' Span, A. & St. L.R.R." [Trenton Falls, N.Y. near Hamilton, NY? Adirondack & St. Lawrence RR?] Built by Elmira Bridge Co., Ltd., Elmira, N.Y. Submitted Aug. 1891 by Chas. F. Stowell; Approved by G. H. Thomson, Consulting Engineer. Longitudinal, undetailed view of entire bridge; also end view and cross-section. Print, 40 x 30.5

Folder 88

Trenton Falls Bridge--truss details "Trenton Falls Bridge 200'-0" Span" [same data as above]; Detailed side view of truss. Print in two continuous pieces: 33 x 30.5; 27. x 30.5

Folders 84-a,b

Turkey Creek bridge, Louisville & Nashville RR " S & N Ala[?] Div. L & N. R.R., 'Turkey Creek'." "Jany. 28 88" [January 28, 1888] Louisville Bridge & Iron Co. Detailed diagrams of posts, joints, cross ties, stringers, chords, etc. Blueprint, 37.5 x 34.5

Folder 57-a

Turkey Creek bridge: "Febr. 2 88" [February 2, 1888] Details, different from above. Blueprint, 42.5 x 34

Folder 57-b

Turnhole bridge: see: Lehigh Coal and Navigation Company ...

Folder 43

Waterford Bridge, 1804 (Burr) "Highway Bridge Over the Hudson River Between Waterford and Lansingburgh"; Built by Theodore Burr; [Saratoga Co., no. of Albany]; Pencilled note upper right of c. 1: "1804" **[ARB, Pl. VI]**

Waterford Bridge, 1804; 1814 "Built of hewn yellow pine in 1804. Finished Nov 30, 1804; covered in 1814" Longitudinal view of entire covered bridge; diagram of truss plan of flooring. Drawing, 42 x 11.5

Folder 56

Waterford Bridge--spans (3) [all identified as: "Span No. ,Waterford Bridge," followed by date of each rendition]: No. 1 (August, 1895); No. 2: (August, 1895; 2 cc.); No. 2 (Oct. 9, 1900); No. 3 (August, 1895). Blueprints, all ca. 32 x 18

Folder 42

Waterford Bridge (presumptive) [three untitled pieces, but writing corresponds to that in the two entries above]: "SECTION 4, Aug., 1895" [cross-section of a covered bridge]; "SECTION 5" [n.d.; cross-section of a 2-lane covered bridge]; "SECTION" [n.d.; cross-section of 2-lane covered trolley bridge] Blueprints, all ca. 18 x 16

Folder 16

Wernwag's bridges "Wernwag's Bridges" [cf. ARB Pl. IX] Five bridges, including plans of three: "**Bridge over the Delaware at New Hope**" [blt. 1814]; "**Patent Bridge Colossus**, across the Schuylkill at Philadelphia" [blt. 1812]; and "**Bridge Economy**, the Principle of which is across Neshaminy, on the Post Road from Philada. to N. York & over Frankfort Creek" [blt. 1810]; plus complete elevations of two covered bridges: "**Upper Ferry or Lancaster Schuylkill Bridge**" and "**Schuylkill Permanent Bridge**"; "Lewis Wernwag" and "Drawn & Engraved by E. G. Gridley"; Lithograph, 24.5 x 19

Folder 9

Wheeling Creek bridge "Bridge over Wheeling Creek on Baltimore & Ohio Rail Road" [Upper right:] "Plate II. Entered according to Act of Congress in the year 1860 by Albert Fink"; bottom right: "Lith. of A. Hoen & Co. Balto"; Print, 25.5 x 19.5

Folder 23

Whipple-Murphy Iron Bridge ... Illinois Central RR, 1859 "Whipple Iron Bridge built for the Illinois Central R. R. by A. & P. Roberts" Pencoyd Iron Works, Philadelphia 1859; designed by J. W. Murphy C. E.; side view of truss; cross-section; Print in four pieces: 26 x 30.5; 23 x 30.5; 20.5 x 30.5; and 27.5 x 30.5

Folders 99-a,b,c,d

Whipple trapezoidal truss--Rensselaer & Saratoga RR "The Whipple trapezoidal truss. Built 1852-53 on the Rensselaer & Saratoga R. R., 7 miles north of Troy, N.Y." [double intersection Pratt truss] Built by Squire Whipple. Print (3 cc.); 35 x 22.5; 38.5 x 24.5; 39 x 25 [ARB Pl. XVI]

Folder 41

[cc. 2-3 are in Duplicates drawer]

Willimansett bridge "Connecticut River Railroad Co., Willimansett bridge. Ties and guards" [At upper right:] "Plan A." Jan. 29th, 1883; John E. Cheney, Con. engineer; no markings. Drawing on blueprint paper, 25 x 20

Folder 11

Yakima River bridge "300 Feet Span. Combination Bridge over Yakima River. Cascade Div'n, North'n Pacific R.R.. Washington. Buck & McNulty, Engineers. New York, 1886." [Whipple double-intersection/ Pratt double-intersection bridge] Print in two consecutive pieces: 1) side elevation, including one end of bridge (33 x 31); 2) half plans of top chord and of bottom chord (30 x 31)

Folders 91-a,b

L. Linke, 9/23/09