



Smithsonian

*National Museum of American History Kenneth E. Behring Center*

## Guide to the Division of Work and Industry Lantern Slide Collection

NMAH.AC.1013

Vanessa Broussard-Simmons

2024

Archives Center, National Museum of American History  
P.O. Box 37012  
Suite 1100, MRC 601  
Washington, D.C. 20013-7012  
Business Number: Phone: 202-633-3270  
Fax Number: Fax: 202-786-2453  
archivescenter@si.edu  
<https://americanhistory.si.edu/archives>

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## Collection Overview

|                    |   |
|--------------------|---|
| <b>Repository:</b> | Archives Center, National Museum of American History  |
| <b>Title:</b>      | Division of Work and Industry Lantern Slide Collection  |
| <b>Date:</b>       | 1588-1945, undated  |
| <b>Identifier:</b> | NMAH.AC.1013  |
| <b>Creator:</b>    | Missionary Catechists of Divine Providence.<br>Massachusetts Institute of Technology (MIT) Civil Engineering Department<br>Underwood and Underwood  |
| <b>Source:</b>     | National Museum of American History (U.S.). Division of Mechanical and Civil<br>Engineering (Compiler)<br>National Museum of American History (U.S.). Division of Work and Industry<br>(Compiler)   |
| <b>Extent:</b>     | 44 Cubic feet (132 boxes)   |
| <b>Language:</b>   | English .   |
| <b>Summary:</b>    | A collection primarily of 19th and early 20th century lantern slides relating<br>mostly to engineering, agriculture, railroads, mining, and extractive industries<br>collected by the Division of Work and Industry, National Museum of American<br>History, Smithsonian Institution. |

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## Administrative Information

### Acquisition Information

Immediate source of acquisition unknown.

### Provenance

Collection transferred to the Archives Center from the Division of Work and Industry.

### Related Materials

#### **Archives Center, National Museum of American History**

#### **For related material on Canals, see the following collections:**

Warshaw Collection of Business Americana Subject Categories: Canals, NMAH.AC.0060

Underwood & Underwood Glass Stereograph Collection, NMAH.AC.0143

Roland A. McCrady Photograph Collection, NMAH.AC.0710

Division of Cultural History Lantern Slides and Stereographs, NMAH.AC.0945

Niagara Falls Power Company Records, NMAH.AC.0949

Modjeski and Masters Company Records, NMAH.AC.0976

George Morison Collection, NMAH.AC.0978

Uriah A. Boyden Papers, NMAH.AC.0982

James Forgie Papers, NMAH.AC.0986

William R. Hutton Papers, NMAH.AC.0987

Snake River Irrigation Project Photograph Album, NMAH.AC.1031

Silas H. Woodard Papers, NMAH.AC.1038

Delaware, Lackawanna, and Western Railroad Records, NMAH.AC.1074

Mechanical and Civil Engineering Stereograph Cards, NMAH.AC.1090

New York State Barge Canal Photographs, NMAH.AC.1536

Lackawaxen Canal Survey Profiles, NMAH.AC.1546

Nicaragua Canal Collection, NMAH.AC.1550

**For related material on Cantilever Bridges, see the following collections:**

Warshaw Collection of Business Americana Subject Categories: Bridges, NMAH.AC.0060

Underwood & Underwood Glass Stereograph Collection, NMAH.AC.0143

Nathan W. Morgan Papers, NMAH.AC.0965

George Morison Collection, NMAH.AC.0978

John A. Roebling Collection, NMAH.AC.0981

Mechanical and Civil Engineering Stereograph Cards, NMAH.AC.1090

Division of Mechanical and Civil Engineering Bridges Reference Collection, NMAH.AC.1577

**For related material on Concrete Arch and Beam Bridges, see the following collections:**

Warshaw Collection of Business Americana Subject Categories: Bridges, NMAH.AC.0060

**For related material on Corliss Steam Engine Company, see the following collections:**

Frick Company Collection, NMAH.AC.0293

Cooper-Bessemer Corporation Records, NMAH.AC.0961

Robert Wetherill Company Records, NMAH.AC.0992

Evolution of the Corliss Steam Engine Scrapbook, NMAH.AC.1016

Mechanical and Civil Engineering Glass Plate Negatives, NMAH.AC.1089

**For related material on Hydraulic Engineering, see the following collections:**

Warshaw Collection of Business Americana Subject Categories: Engineering, NMAH.AC.0060

Charles Richardson Pratt Papers, NMAH.AC.0958

Rudolph Hering Collection, NMAH.AC.0989

Mechanical and Civil Engineering Glass Plate Negatives, NMAH.AC.1089

Mechanical and Civil Engineering Stereograph Cards, NMAH.AC.1090

**For related material on Machine Tools, see the following collections:**

Warshaw Collection of Business Americana Subject Categories: Tools, NMAH.AC.0060

Pratt & Whitney Company Scrapbook, NMAH.AC.0093

Max Holland Numerical Control Collection, NMAH.AC.0537

Southwark Foundry and Machine Company Records, NMAH.AC.1107

**For related material on Materials Handling, see the following collections:**

Warshaw Collection of Business Americana Subject Categories: Materials Handling, NMAH.AC.0060

James J. Childs Numerical Control Collection, NMAH.AC.0420

World War Two Bomb Damage Photographs, NMAH.AC.1535

Norton Grinding Machine Company Photograph Collection, NMAH.AC.1551

Paul Steam-Heating System Company Records, NMAH.AC.1554

**For related material on Metal Arch Bridges, see the following collections:**

Warshaw Collection of Business Americana Subject Categories: Bridges, NMAH.A.C0060

Division of Mechanical and Civil Engineering Bridges Reference Collection, NMAH.AC.1577

Mechanical and Civil Engineering Stereograph Cards, NMAH.AC.1090

**For related material on Movable Bridges, see the following collections:**

Warshaw Collection of Business Americana Subject Categories: Bridges, NMAH.AC.0060

Henry Grattan Tyrrell and Mary Maude Knox Tyrrell Papers, NMAH.AC.0948

Nathan W. Morgan Papers, NMAH.AC.0965

Division of Mechanical and Civil Engineering Bridges Reference Collection, NMAH.AC.1577

**For related material on Panama Canal, see the following collections:**

John Frances Little Panama Canal Scrapbook, NMAH.AC.0708

A.R. Van Tassell Photograph Album, NMAH.AC.1015

W. A. Fishbaugh Panama Canal Photograph Album, NMAH.AC.1021

W. P. Stine Panama Canal Papers, NMAH.AC.1039

Katherine Kingsford Panama Canal Photograph Album, NMAH.AC.1040

Richard Fisher Collection of Panama Canal Materials, NMAH.AC.1045

Robert Dearborn Panama Canal Glass Negatives, NMAH.AC.1111

Charles Edwards Wood Panama Canal Photograph Album, NMAH.AC.1114

Panama Canal Commission Photonegatives, 1903-circa 1939, NMAH.AC.1116

Division of Mechanical and Civil Engineering Panama Canal Collection, NMAH.AC.1569

For related material on railroads, see the following collections:

Archives Center Lantern Slide Collection, NMAH.AC.0686

Railroad Bridge Construction Photograph Album, NMAH.AC.1024

Northern Pacific Railroad Bridge Construction Photograph Album, NMAH.AC.1031

Penn Station, New York, Photographs, NMAH.AC.1048

Northern Pacific Railway Photographs, NMAH.AC.1067

New York Central Railway Valuation Negatives, NMAH.AC.1072

Pittsburgh, Cincinnati, Chicago, and St. Louis Railroad Photographs (PCC and St. Louis), NMAH.AC.1079

Niagara Railroad Negatives, NMAH.AC.1081

Charles B. Chaney Jr. Railroad Photographic Collection, NMAH.AC.1167

Clayton M. Hall Collection of Railroad Photographs, NMAH.AC.1168

Harry A. McBride Railroad Photographs, NMAH.AC.1171

Thomas Norrell Railroad Photographs Collection, NMAH.AC.1174

Pullman Palace Car Company Photographs, NMAH.AC.1175

Haskell and Barker Car Company Photographic Negatives, NMAH.AC.1183

**For related material on Steam Boilers, see the following collections:**

Frick Company Collection, NMAH.AC.293

Erasmus D. Leavitt Collection, NMAH.AC.0966

Edwin Rust Papers, NMAH.AC.1070

Hartford Steam Boiler Inspection and Insurance Company Records, NMAH.AC.1541

For related material on steam engines, see the following collections:

Warshaw Collection of Business Americana Subject Categories: Engines, NMAH.AC.0060

Frick Company Collection, NMAH.AC.0293

Borsig Steam Engine Records, NMAH.AC.0956

Cooper-Bessemer Corporation Records, NMAH.AC0961

Greville I. Bathe Papers, NMAH.AC.0970

McIntosh, Seymour, and Company Records, NMAH.AC0985

Mechanical and Civil Engineering Glass Plate Negatives, NMAH.AC1089

**For related material on Steam Turbines, see the following collections:**

Parke, Davis Research Laboratory Records, NMAH.AC.0001

Westinghouse Electric and Manufacturing Company Records, NMAH.AC.0977

Skinner Engine Company Records, NMAH.AC.1087

Mechanical and Civil Engineering Glass Plate Negatives, NMAH.AC.1089

**For related material on Suspension Bridges, see the following collections:**

Warshaw Collection of Business Americana Subject Categories: Bridges, NMAH.AC.0060

Underwood & Underwood Glass Stereograph Collection, NMAH.AC.0143

Nathan W. Morgan Papers, NMAH.AC.0965

Modjeski and Masters Company Records, NMAH.AC.0976

Niagara Falls Bridge Commission Records, NMAH.AC.1060

Mechanical and Civil Engineering Glass Plate Negatives, NMAH.AC.1089

Mechanical and Civil Engineering Stereograph Cards, NMAH.AC.1090

Robinson & Steinman Collection, NMAH.AC.1562

Division of Mechanical and Civil Engineering Bridges Reference Collection, NMAH.AC.1577

## Processing Information

Collection was processed by Kamina Gager, intern, 2024; and Tyler Gibson, intern 2024; supervised by Vanessa Broussard-Simmons, archivist, March 2024. Lantern slides digitized by Noah Steward, digital imaging technician, March 2024. Finding aid encoded by Kamina Gager, intern, 2024; and Tyler Gibson, intern 2024.

## Preferred Citation

Division of Work and Industry Lantern Slide Collection, 1758-1945, Archives Center, National Museum of American History.

## Restrictions on Access

Collection open for research on site by appointment. Unprotected photographs must be handled with gloves.

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## Scope and Contents

A collection of 19th and early 20th century silver gelatin dry plate lantern slides acquired by the staff of the Division of Work and Industry, National Museum of American History, Smithsonian Institution. These materials were collected for research purposes and relate to various subjects.

Condition of the material varies widely with some fragile or broken slides. Poor quality images also exist probably due to either the processing of the slides or unstable storage environments. All slides have been digitized and moved to off-site storage to minimize handling and at the same time increase accessibility.

The collection is arranged in nine series: series 1, engineering; series 2, extractive industries; series 3, chemical; series 4, manufacturing companies; series 5, machinery; series 6, railroads; series 7, agriculture; series 8, travel photography; and 9, miscellaneous materials.

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## Arrangement

Collection is arranged in nine series.

### **Series 1: Engineering, undated**

Subseries 1.1: Architecture and Structures, undated

Subseries 1.2: Bridges, Cantilever, undated

Subseries 1.3: Bridges, Concrete Arch and Beam, undated

Subseries 1.4: Bridges, Masonry Aqueducts, undated

Subseries 1.5: Bridges, Metal Arc, undated

Subseries 1.6: Bridges, Metal Truss, undated

Subseries 1.7: Bridges, Movable, undated

Subseries 1.8: Bridges, Suspension, undated

Subseries 1.9: Canals, undated

Subseries 1.10: Hydraulic Engineering, undated

Subseries 1.11: Machine Tools, undated

Subseries 1.12: Materials Handling, undated

Subseries 1.13: Power, undated

Subseries 1.14: Railroad Mileage Maps, undated

Subseries 1.15: Steam Boilers, undated

Subseries 1.16: Steam Turbines, undated

Subseries 1.17: Tunneling Machine Tools, undated

**Series 2: Extractive Industries, undated**

Subseries 2.1: Coal, undated

Subseries 2.1.1: Coke, undated

Subseries 2.1.2: Diagrams and Maps, undated

Subseries 2.1.3: General, undated

Subseries 2.1.4: General, undated

Subseries 2.1.5: Infrastructure and Laborers, undated

Subseries 2.1.6: Internation, undated

Subseries 2.1.7: International Product and Labor Statistics, undated

Subseries 2.1.8: Jack Leg Drilling, undated

Subseries 2.1.9: Lansford Breaker Fire Coal Facilities, undated

Subseries 2.1.10: Loading Machinery, undated

Subseries 2.1.11: Longhole Drilling Method, undated

Subseries 2.1.12: Machinery, undated

Subseries 2.1.13: Mines, undated

Subseries 2.1.14: Mining Communities, undated

Subseries 2.1.15: Subsidence, undated

Subseries 2.1.16: Forepoling Warden Mine, undated

Subseries 2.1.17: Montour Number 10 Mine, undated

Subseries 2.1.18: Conveyors, undated

Subseries 2.1.19: Coal Land Valuation, undated

Subseries 2.2: Iron, undated

Subseries 2.2.1: General, undated

Subseries 2.2.2: Pig Iron, undated

Subseries 2.3: Gemstones, undated

Subseries 2.3.1: Gemstones, undated

Subseries 2.4: Mining, undated

Subseries 2.4.1: Diagrams, undated

Subseries 2.4.2: Hydraulic, undated

Subseries 2.4.3: General, undated

Subseries 2.4.4: Ores and Mines, undated

Subseries 2.4.5: Processing Equipment and Infrastructure, undated

Subseries 2.4.6: Shafts, Drilling, and Loading, undated



Subseries 2.4.7: United States Bureau of Mines, undated

Subseries 2.4.8: L. E. Young, Box C, undated

Subseries 2.4.9: L. E. Young, Box D, undated

Subseries 2.4.10: L. E. Young, Box E, undated

Subseries 2.4.11: L. E. Young, Box F, undated

Subseries 2.4.12: L. E. Young, Box G, undated

Subseries 2.4.13: L. E. Young, Box I, undated

Subseries 2.5: Oil, undated

Subseries 2.5.1: Oil, undated

Subseries 2.6: Rubber, undated

Subseries 2.6.1: Coke Rubber Rails, undated

Subseries 2.6.2: General, undated

Subseries 2.6.3: General, undated

Subseries 2.6.4: General, undated

Subseries 2.7: Steel, undated

Subseries 2.7.1: Newcastle Steel Work, undated

Subseries 2.7.2: General, undated

Subseries 2.8: Timber, undated

Subseries 2.8.1: General, undated

Subseries 2.8.2: Lifts, undated

**Series 3: Chemical Processing, undated**

Subseries 3.1: Chemical Processes, undated

Subseries 3.2: Laboratory and Studies, undated

Subseries 3.3: Massachusetts Institute of Technology, 37A: 1-48, undated

Subseries 3.4: Massachusetts Institute of Technology, 47: 1-68, undated

Subseries 3.5: Massachusetts Institute of Technology, 52: 1-20, undated

Subseries 3.6: Massachusetts Institute of Technology, undated

Subseries 3.7: Radiation Studies, undated

Subseries 3.8: Visual Aids in Chemical Education, The Museum, undated

**Series 4: Manufacturing Companies, undated**

Subseries 4.1: American Bosch Company, Fuel Injection Equipment, undated

Subseries 4.2: American Locomotive Company, undated

Subseries 4.3: American Locomotive Company, undated

Subseries 4.4: Atlas-Imperial Diesel Engine Company, undated

Subseries 4.5: Baldwin Locomotive Works, undated

Subseries 4.6: Buda Engine Company, undated

Subseries 4.7: Buda Engine Company, Marine, undated

Subseries 4.8: Cooper-Bessenger Corporation, undated  
Subseries 4.9: Cooper-Bessenger Corporation, undated  
Subseries 4.10: Fairbanks Morse Marine Diesel General Set, undated  
Subseries 4.11: Fairbanks Morse Marine Diesel, undated  
Subseries 4.12: Fairbanks Morse Marine Diesel, undated  
Subseries 4.13: Fairbanks Morse Marine Diesel, undated  
Subseries 4.14: Fairbanks Morse Marine Diesel, undated  
Subseries 4.15: Fairbanks Morse Marine Diesel General Set, undated  
Subseries 4.16: General Motors Company, undated  
Subseries 4.17: General Motors Company, undated  
Subseries 4.18: General Motors Company, undated  
Subseries 4.19: General Motors Company, undated  
Subseries 4.20: General Motors Company, undated  
Subseries 4.21: General Motors Company, undated  
Subseries 4.22: General Motors Company, undated  
Subseries 4.23: General Motors Company, undated  
Subseries 4.24: General Motors Company, undated  
Subseries 4.25: General Motors Company Miscellaneous, undated  
Subseries 4.26: Hamilton Diesel, undated  
Subseries 4.27: Hamilton Diesel, undated  
Subseries 4.28: Hamilton Diesel, undated  
Subseries 4.29: Hamilton Diesel, undated  
Subseries 4.30: Ingersoll Rand Incorporated, undated  
Subseries 4.31: International Harvester Fuel Singler Plunger, undated  
Subseries 4.32: Long and Alstatler Company, undated  
Subseries 4.33: Miscellaneous Manufacturing Companies, undated  
Subseries 4.34: Nordberg Marine Diesel, undated

**Series 5: Machinery, undated**

Subseries 5.1: Blast Furnances, undated  
Subseries 5.2: Construction, undated  
Subseries 5.3: Construction - Brick, undated  
Subseries 5.4: Construction - Cement, undated  
Subseries 5.5: Diagram Miscellaneous, undated  
Subseries 5.6: Diesel Engines, undated  
Subseries 5.7: Diesel Engines, General, undated  
Subseries 5.8: Diesel Engines, Superior Types KNB, undated  
Subseries 5.9: Diesel Installation USS Maumee, undated

- Subseries 5.10: Drills, Jumbos, undated
- Subseries 5.11: Engine Model D, undated
- Subseries 5.12: Factories and Warehouses, undated
- Subseries 5.13: Factory Machines, undated
- Subseries 5.14: Flywheel Governors, undated
- Subseries 5.15: Furnances General, undated
- Subseries 5.16: Gas, undated
- Subseries 5.17: General Engines, undated
- Subseries 5.18: Governors, undated
- Subseries 5.19: History of Pumps, undated
- Subseries 5.20: Hoisers, undated
- Subseries 5.21: Industrial Furnances, undated
- Subseries 5.22: Industrial Scenes, undated
- Subseries 5.23: Machines Diagrams and Sketches, undated
- Subseries 5.24: Machinery Miscelleaneous, undated
- Subseries 5.25: Refrigeration, undated
- Subseries 5.26: Safety, undated
- Subseries 5.27: Steam Engines General Information, undated
- Subseries 5.28: Vacuum, undated

**Series 6: Railroads and Locomotions, undated**

- Subseries 6.1: Charts and Graphs, undated
- Subseries 6.2: Company Photographs, undated
- Subseries 6.3: Drawings, undated
- Subseries 6.4: Toppling Over, undated
- Subseries 6.5: Interior of Train Cars, undated
- Subseries 6.6: Locomotion, undated
- Subseries 6.7: Locomotion Miscelleaneous, undated
- Subseries 6.8: Repair Report Forms, undated
- Subseries 6.9: Shop Scenes, undated
- Subseries 6.10: Track Debris, undated
- Subseries 6.11: Train Car Component Details, undated
- Subseries 6.12: Train Yards, undated
- Subseries 6.13: Underside of Locomotives, undated
- Subseries 6.14: Yard Scenes, undated

**Series 7: Agriculture, undated**

- Subseries 7.1: Bananas, undated
- Subseries 7.2: Butter, undated

Subseries 7.3: Coffee, undated

Subseries 7.4: Corn, undated

Subseries 7.5: Cotton, undated

Subseries 7.6: Machinery, undated

Subseries 7.7: Onions, undated

Subseries 7.8: Potatoes, undated

Subseries 7.9: Poultry, undated

Subseries 7.10: Sugar, undated

Subseries 7.11: Tea, undated

Subseries 7.12: Tobacco, undated

Subseries 7.13: Turpentine, undated

**Series 8: Travel Photography, undated**

Subseries 8.1: California, undated

Subseries 8.2: Canada, undated

Subseries 8.3: Colorado, undated

Subseries 8.4: General Landscapes, undated

Subseries 8.5: General Locations, undated

Subseries 8.6: Landscapes and Locations General, 186-2-36, undated

Subseries 8.7: Landscapes and Locations General, 187-18-48, undated

Subseries 8.8: New York, undated

Subseries 8.9: United States National Parks, undated

Subseries 8.10: Washington, DC, undated

**Series 9: Miscellaneous Materials, undated**

Subseries 9.1: Duplicates of Navy Slides, undated

Subseries 9.2: Miscellaneous

Subseries 9.3: Reliefs, Cravings, and Architecture, undated

Subseries 9.4: Wood Products, undated

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## Names and Subject Terms

This collection is indexed in the online catalog of the Smithsonian Institution under the following terms:

Subjects:

- African American women
- Agricultural crops -- Fields
- Agricultural laborers
- Agricultural machinery
- Agricultural products
- Agriculture -- Corn
- Architecture

Bananas -- Costa Rica  
Bananas -- Jamaica  
Bearings (Machinery)  
Bridges  
Butter  
Butter -- New York  
Canals  
Children -- 20th century  
Coal mines and mining  
Coffee  
Coffee -- Jamaica  
Coffee -- Mexico  
Coffee industry -- Brazil  
Cotton  
Cotton farming  
Cotton industry  
Engineering  
Hydraulic engineering  
Laborers  
Machine-tools  
Maple sugar  
Materials handling  
Mine shafts  
Mining engineering  
Oil  
Oil industries  
Onions  
Potatoes  
Poultry industry  
Power  
Railroads  
Railroads -- 19th century  
Railroads -- 20th century  
Rubber -- Ceylon  
Rubber -- Congo  
Rubber plantations  
Steam-boilers  
Sugar  
Tires  
Tobacco  
Tunnels  
Turbines  
Turpentine -- North Carolina  
Water-supply

Types of Materials:

Blueprints  
Drawings -- 20th century  
Lantern slides  
Photographs -- Lantern slides -- 1900-1950  
Photographs -- Lantern slides -- 19th century  
Sketches

Names:

National Museum of American History (U.S.). Division of Mechanical and Civil Engineering  
National Museum of American History (U.S.). Division of Work and Industry

## Container Listing

### Series 1: Engineering, 1758-1945, undated

**Scope and Contents:** Maintained by staff as a group of material on various subjects relating to engineering. It represents one of the many photographic collections documenting hard to collect objects due to size, space requirements, or availability. Subjects were created by the division and put in alphabetical order by Archives Center staff. Used for study purposes most of the materials have captions documenting the subject of the lantern slides but few are dated.

The series is arranged in seventeen subseries: subseries 1.1, architecture and structures; subseries 1.2, bridges, cantilever; subseries 1.3, bridges, concrete arch and beam; subseries 1.4, bridges, masonry aqueducts; subseries 1.5, bridges, metal arc; subseries 1.6, bridges, metal truss; subseries 1.7, bridges, movable; subseries 1.8, bridges, suspension; subseries 1.9, canals; subseries 1.10, hydraulic engineering; subseries 1.11, machine tools; subseries 1.12, materials handling; subseries 1.13, power; subseries 1.14, railroad mileage maps; subseries 15, steam boilers; subseries 1.16, steam turbines; and subseries 1.17, tunneling machine tools.

#### Subseries 1.1: Architecture and Structures, 1896-1945, undated

**Scope and Contents:** Images document subjects created by the division and are arranged as follows: subseries 1.1.1, arches and masonry; subseries 1.1.2, architecture; subseries 1.1.3, building moving; subseries 1.1.4, construction of log cabin; subseries 1.1.5, factories and industrial sites; subseries 1.1.6, heating and ventilating; subseries 1.1.7, hoisting and movement of heavy objects; subseries 1.1.8, miscellaneous structures and erection techniques; subseries 1.1.9, moving the Obelisks; subseries 1.1.10, rock drilling and riveting; subseries 1.1.11, steel mills; subseries 1.1.12, structural engineering; and subseries 1.1.13, tall steel frame buildings.

##### Subseries 1.1.1: Arches and Masonry, undated

|               |   |
|---------------|---|
| Box 1, Item 1 | Roman arch and retaining walls, 5.7.42, undated                         |
| Box 1, Item 2 | Neronian arches on Caelian Hill, 5.7.41, undated                        |
| Box 1, Item 3 | Great Wall of China near Nankow Pass, undated                           |
| Box 1, Item 4 | Sketch of concrete wall with triangular bricks, undated                 |
| Box 1, Item 5 | Mycenae, Gate of the Lions, James Ricalton, 202-50, undated             |
| Box 1, Item 6 | Figure, section through the Pantheon, undated                           |
| Box 1, Item 7 | Greece, Olympia, Stadion entrance, undated                              |
| Box 1, Item 8 | Portion of old Roman siphon aqueduct bween Hafia and Palestine, undated |
| Box 1, Item 9 | Tiryns, "Cyclopean" Wall, James Ricalton, 202-53, undated               |

|                |   |
|----------------|---|
| Box 1, Item 10 | Figure, concrete wall with Opus reticulatum, undated                        |
| Box 1, Item 11 | Sketch of building interior joining arches, undated                         |
| Box 1, Item 12 | Babylonian arch of brick at Nippur, 2.1.1, undated                          |
| Box 1, Item 13 | Sepulchral vault at Mugheir (false arch) Taylor, 2.7.1, undated             |
| Box 1, Item 14 | King's chamber and chambers of construction, Great Pyramid, 1.1.4, undated  |
| Box 1, Item 15 | Opus reticulatum, brick quoins and levellers, concrete body, 5.4.5, undated |
| Box 1, Item 16 | Opus reticulatum (scale in English feet), 5.4.5, undated                    |
| Box 1, Item 17 | Stereotomy, undated   |

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### Subseries 1.1.2: Architecture, undated

|                |  |
|----------------|--|
| Box 1, Item 18 | Center panels of arches after erection of first pair of trusses, undated |
| Box 1, Item 19 | Building structure with dome, undated                                    |
| Box 1, Item 20 | Modern flat covered room systems, undated                                |
| Box 1, Item 21 | Figure, bronze trusses of pronaos of Pantheon, undated                   |
| Box 1, Item 22 | Men standing atop canopy, undated  |
| Box 1, Item 23 | Figure, Cross section of medieval building, undated                      |
| Box 1, Item 24 | Figure, cross section of Gothic classical building, undated              |
| Box 1, Item 25 | Figure, Medieval construction methods, undated                           |
| Box 1, Item 26 | Building floor plan, undated   |
| Box 1, Item 27 | Size diagram of building arches, undated                                 |
| Box 1, Item 28 | 1.1.1 Rise of masonry construction, pyramid origins, undated             |
| Box 1, Item 29 | 1.1.4 Great Pyramid, undated   |
| Box 1, Item 30 | 0.1.1 Etching by Piranesi dream prison, undated                          |
| Box 1, Item 31 | 0.1.1 Etching by Piranesi dream prison, undated                          |



|                |  |
|----------------|--|
| Box 1, Item 32 | Figure, early construction methods, storage building, undated    |
| Box 1, Item 33 | Cross section of building with underground domes, undated        |
| Box 1, Item 34 | Sketch of European castle, undated                               |
| Box 1, Item 35 | Sections of a cathedral and its dome, undated                    |
| Box 1, Item 36 | Rock cut of Rameses II at Abu Simbil, Nubia, 1.1.4, undated      |
| Box 1, Item 37 | Great Pyramid, 1.1.4, undated                                    |
| Box 1, Item 38 | Rock cut tombs of Persian kings, Darius 500 B.C., 2.1.4, undated |
| Box 1, Item 39 | Roman tower, 5.7.1, undated                                      |
| Box 1, Item 40 | Cathedral interior, undated                                      |
| Box 1, Item 41 | Strasburg Cathedral tower, sections, undated                     |
| Box 1, Item 42 | Strasburg Cathedral tower, west facade, 1277-1439, undated       |

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### Subseries 1.1.3: Building Moving, undated

|                |  |
|----------------|--|
| Box 1, Item 43 | European apartment or office building, undated                       |
| Box 1, Item 44 | Constructing railroad lines on both sides of suburban house, undated |
| Box 1, Item 45 | Suburban house on railroad tracks, undated                           |
| Box 1, Item 46 | American House at end of train tracks, undated                       |
| Box 1, Item 47 | Workers posed in front of house on train tracks, undated             |
| Box 1, Item 48 | Houses on track boarding boat, undated                               |
| Box 1, Item 49 | Houses being transported by boat, undated                            |
| Box 1, Item 50 | Houses on boat in river, undated                                     |
| Box 1, Item 51 | Houses built precariously into hillside, undated                     |

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### Subseries 1.1.4: Construction of Log Cabin, undated

|                |                                    |
|----------------|------------------------------------|
| Box 1, Item 52 | Log cabin, construction 1, undated |
|----------------|------------------------------------|

|                |  |
|----------------|--|
| Box 1, Item 53 | Log cabin, construction 2, undated       |
| Box 1, Item 54 | Log cabin, construction 3, undated       |
| Box 1, Item 55 | Finished log cabin, undated              |
| Box 1, Item 56 | Log cabin in background, undated         |
| Box 1, Item 57 | Men posed in front of log cabin, undated |

### Subseries 1.1.5: Factories and Industrial Sites, undated

Scope and Contents: Consist of sites located in different parts of the United States and England including Ferro Concrete Construction Company, Baltimore, Maryland; Corliss Steam Engine Company, Providence, Rhode Island; Soho Manufactory, Birmingham, England; a factory in Atlanta, Georgia; and Harmony Mills in Cohoes, New York.

|                |   |
|----------------|---|
| Box 2, Item 1  | Factory exterior, undated                                       |
| Box 2, Item 2  | Ferro Concrete Construction Company, building exterior, undated |
| Box 2, Item 3  | Ferro Concrete Construction Company, building exterior, undated |
| Box 2, Item 4  | Ferro Concrete Construction Company, storage drums, undated     |
| Box 2, Item 5  | Factory interior, undated                                       |
| Box 2, Item 6  | Figure, hydraulic mechanisms, undated                           |
| Box 2, Item 7  | Figure, hydraulic crane, undated                                |
| Box 2, Item 8  | Corliss Steam Engine Company, undated                           |
| Box 2, Item 9  | Soho Manufactory, undated                                       |
| Box 2, Item 10 | Old West Point and Sundry where First Avenue was built, undated |
| Box 2, Item 11 | Factory exterior, undated                                       |
| Box 2, Item 12 | Factory, Atlanta, Georgia, undated                              |
| Box 2, Item 13 | [Harmony] Mills, Cohoes, New York, undated                      |

### Subseries 1.1.6: Heating and Ventilating, undated

Scope and Contents: Include floor plans and diagrams of systems for home, school, and commercial use. Materials are undated.

|                |   |
|----------------|---|
| Box 2, Item 14 | Office building ventilation system diagram, undated                               |
| Box 2, Item 15 | Basement ventilation floor plan, undated  |
| Box 2, Item 16 | Basement heating floor plan, undated  |
| Box 2, Item 17 | Buffalo Forge Company, ventilation machine, undated                               |
| Box 2, Item 18 | Agassiz School, ventilation first floor plan, undated                             |
| Box 2, Item 19 | Garage ventilation section, undated   |
| Box 2, Item 20 | Garage heating section, undated   |
| Box 2, Item 21 | Section of Magee heater, Magee Furnace Company, combination furnace, H90, undated |
| Box 2, Item 22 | Steam house heater, H90, undated  |

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#### Subseries 1.1.7: Hoisting and Movement of Heavy Objects, circa 1900-1915, undated

|                |  |
|----------------|--|
| Box 2, Item 23 | Figure, Rocket transportation, undated                               |
| Box 2, Item 24 | Figure, Hoisting, undated  |
| Box 2, Item 25 | Figure, Object transportation on sled, undated                       |
| Box 2, Item 26 | Figure, French lever movement number 1, undated                      |
| Box 2, Item 27 | Figure, French lever movement number 2, undated                      |
| Box 2, Item 28 | Figure, French lever movement number 3, undated                      |
| Box 2, Item 29 | Figure, French lever movement number 4, undated                      |
| Box 2, Item 30 | Figure, French lever movement number 5, undated                      |
| Box 2, Item 31 | Figure, Sled pulley, undated   |
| Box 2, Item 32 | Figure, Descending staircase, undated                                |
| Box 2, Item 33 | Fifty ton turbine hauled by R. S. Brine Transportation Company, 1915 |
| Box 2, Item 34 | Coast defense gun crossing, Bennington Street Bridge, 1915           |
| Box 2, Item 35 | Coast defense gun hauled by R. S. Brine Transportation Company, 1915 |

|                |  |
|----------------|--|
| Box 2, Item 36 | Coast defense gun hauled by R. S. Brine Transportation Company, 1915 |
| Box 2, Item 37 | Medieval hoisting methods, illustration, undated                     |
| Box 2, Item 38 | Guy Derrick, M390, undated   |
| Box 2, Item 39 | Hydraulic elevator, M15, undated                                     |
| Box 2, Item 40 | Crane Derrick, M500, undated   |
| Box 2, Item 41 | Williamson and Brother Company, machinery, undated                   |
| Box 2, Item 42 | Oil governed hoist, undated  |
| Box 2, Item 43 | Human labor and treadmill crane, Lateran Museum, undated             |
| Box 2, Item 44 | Survival of ancient pile driving modern Germany, circa 1900          |
| Box 2, Item 45 | Figure, Assyrian workmen hauling a stone hull, undated               |
| Box 2, Item 46 | Carrara marble obelisk, fifty tons, undated                          |
| Box 2, Item 47 | Unused monolith left by workers at Baalbek, undated                  |
| Box 2, Item 48 | Figure, movement methods, undated                                    |

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**Subseries 1.1.8: Structures and Erection Techniques, 1896-1897, 1927, undated**

|                |  |
|----------------|--|
| Box 2, Item 49 | Bricklaying, 242-50, undated   |
| Box 2, Item 50 | "The Breaker" etching by Joseph Pennell, 13A.2.2, undated            |
| Box 2, Item 51 | Power line, undated  |
| Box 2, Item 52 | Eiserne Decken, construction clerical station opening, undated       |
| Box 2, Item 53 | East Baeton High School, Quartaview Company, W. E. Blodgett, undated |
| Box 2, Item 54 | Rock hauling, 23 14, undated   |
| Box 2, Item 55 | Railroad construction, 27 12, undated                                |
| Box 2, Item 56 | Wall and Williams structures, 58 127, 2778.3, 2.17.27, 1927          |
| Box 2, Item 57 | Bridge construction, 356, undated                                    |

|                |  |
|----------------|--|
| Box 2, Item 58 | Tower Derrick, Milwaukee Wisconsin, 27-46, 1897-04-17  |
| Box 2, Item 59 | Brooklyn Elevated Railroad, undated  |
| Box 2, Item 60 | Iron Building, San Jose, 45-24, undated  |
| Box 3, Item 1  | Unterfuhrung des Hausaringes in Koln, 14-38, undated   |
| Box 3, Item 2  | Highest gin pole on record, 146 feet, 27-34, 1897-02-13  |
| Box 3, Item 3  | Ginpole, Montezuma, Iowa, 27-43, 1896-01-04  |
| Box 3, Item 4  | Train station damage, 278, undated   |
| Box 3, Item 5  | Hoisting 25th girder with gin pole and locomotive, Minneapolis, Minnesota, 27-44, undated                |
| Box 3, Item 6  | Construction lifts, 374, undated   |
| Box 3, Item 7  | Niagara Crossing Cantilever [Niagara Cantilever Bridge], American side, 58-82, undated                   |
| Box 3, Item 8  | Building archway, T60, undated   |
| Box 3, Item 9  | Erecting fifth pair of arch trusses, T87, undated  |
| Box 3, Item 10 | Making of domed building, T59, undated   |
| Box 3, Item 11 | Dome interior and crossing construction, T58, undated  |
| Box 3, Item 12 | Figure, Traveler for erecting trusses over main court of manufactures and liberal arts building, undated |
| Box 3, Item 13 | Gz-8, Unidentified iron work for train terminal  |
| Box 3, Item 14 | Pennsylvania Railroad, terminal construction, Jersey City, undated                                       |
| Box 3, Item 15 | Union Elevated Railroad, 282, undated  |
| Box 3, Item 16 | New Union Elevated, Louisville, Kentucky, 300, undated   |
| Box 3, Item 17 | Under new elevated railroad steel structure from 51 Division Street, 41-47, undated                      |
| Box 3, Item 18 | Railroad bridge construction, 357, undated   |
| Box 3, Item 19 | Louisville Railroad Station, 364, undated  |

|                |   |
|----------------|---|
| Box 3, Item 20 | Elevated railroad curve at 110th Street, 16-48, undated |
|----------------|---|

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### Subseries 1.1.9: Moving The Obelisks, undated

|                |  |
|----------------|--|
| Box 3, Item 21 | 1.1.4 Cutting groove around unfinished obelisk, Engelbach, undated                   |
| Box 3, Item 22 | 1.1.3 Senmut Obelisk Expert to Queen Hatshepsut 1500 B.C., undated                   |
| Box 3, Item 23 | 1.1.3 Senmut about 1500 B.C. Egyptian Obelisk Expert, undated                        |
| Box 3, Item 24 | 1.1.4 Obelisk Dimensions after Engelbach, undated                                    |
| Box 3, Item 25 | 1.1.4 Transportation of Queen Hatshepsut's Obelisks down the Nile, breasted, undated |
| Box 3, Item 26 | 1.1.4 Unfinished Obelisk Aswan Engelbach, undated                                    |
| Box 3, Item 27 | 1.1.4 Obelisk erection after Engelbach, undated                                      |
| Box 3, Item 28 | 1.1.4 Queen Hatshepsut's Obelisk at Karnak, Engelbach, undated                       |
| Box 3, Item 29 | Ancient Egyptian Method for Separating and Undercutting Monoliths, undated           |
| Box 3, Item 30 | Figure, Great obelisk preparation for transport, undated                             |
| Box 3, Item 31 | How the Obelisk was Rolled Over, undated   |
| Box 3, Item 32 | How the Obelisks were Raised, undated  |
| Box 3, Item 33 | Erection of Vatican Obelisk, 7.1.4, 1585, undated                                    |

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### Subseries 1.1.10: Rock Drilling and Riveting, undated

|                |                                     |
|----------------|-------------------------------------|
| Box 3, Item 34 | Rock drilling figure, undated       |
| Box 3, Item 35 | Suspended rammer, undated           |
| Box 3, Item 36 | Construction with rammer, undated   |
| Box 3, Item 37 | Air hammer diagram, undated         |
| Box 3, Item 38 | "New Boyer" air hammer, undated     |
| Box 3, Item 39 | Paris compressor and motor, undated |

|                |  |
|----------------|--|
| Box 3, Item 40 | Equipment function diagram, undated  |
| Box 3, Item 41 | Rock drill mounted on quarry bar in use as a channeler, undated                                  |
| Box 3, Item 42 | Stone channeling machine, undated  |
| Box 3, Item 43 | Ingersoll-Sergeant drills, sinking, drifting, and stoping, undated                               |
| Box 3, Item 44 | Drill scows at Hudson River Crossing, 408, undated   |
| Box 3, Item 45 | Test boring apparatus, 409, undated  |
| Box 3, Item 46 | New York State Quarry, undated   |
| Box 3, Item 47 | Class H Sullivan diamond drill, testing dam site at Kettle Falls on Columbia River, 410, undated |

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#### Subseries 1.1.11: Steel Mills, undated

|                |  |
|----------------|--|
| Box 3, Item 48 | Flue dust recovery, Carnegie Illinois Steel Corporation, 21, undated       |
| Box 3, Item 49 | Flue dust catcher, Carnegie Illinois Steel Corporation, 19, undated        |
| Box 3, Item 50 | Cottrell precipitator for secondary cleaning of blast furnace gas, undated |
| Box 3, Item 51 | Railroad construction, 24, undated   |
| Box 3, Item 52 | Hoisting of steel beams, 23, undated                                       |
| Box 3, Item 53 | Hoisting of steel beams, 22, undated                                       |
| Box 3, Item 54 | Cross sections of Kennedy cowper stoves, 5, undated                        |
| Box 3, Item 55 | Steel beams, 21, undated   |
| Box 3, Item 56 | Ore and coke bins, Duquesne Furnace Plant, Pittsburg, 6, undated           |
| Box 3, Item 57 | Uehling pig iron casting machine, 8, undated                               |
| Box 3, Item 58 | Factory interior, 17, undated  |
| Box 3, Item 59 | Works of the Carbon Steel Company, 18, undated                             |
| Box 3, Item 60 | Three High Plate Mill, 20, undated   |

|                |                                       |
|----------------|---------------------------------------|
| Box 3, Item 61 | Three High Blooming Mill, 19, undated |
|----------------|---------------------------------------|

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### Subseries 1.1.12: Steel Mills, Bethlehem Steel Company Blast Furnace, circa 1945

|               |   |
|---------------|---|
| Box 4, Item 1 | Photograph of blast furnace, circa 1945 |
|---------------|---|

|               |   |
|---------------|---|
| Box 4, Item 2 | Photograph of blast furnace, circa 1945 |
|---------------|---|

|               |   |
|---------------|---|
| Box 4, Item 3 | Photograph of blast furnace, circa 1945 |
|---------------|---|

|               |   |
|---------------|---|
| Box 4, Item 4 | Photograph of blast furnace, circa 1945 |
|---------------|---|

|               |   |
|---------------|---|
| Box 4, Item 5 | Photograph of blast furnace, circa 1945 |
|---------------|---|

|               |   |
|---------------|---|
| Box 4, Item 6 | Photograph of blast furnace, circa 1945 |
|---------------|---|

|               |   |
|---------------|---|
| Box 4, Item 7 | Photograph of blast furnace, circa 1945 |
|---------------|---|

|               |   |
|---------------|---|
| Box 4, Item 8 | Photograph of blast furnace, circa 1945 |
|---------------|---|

|               |                                      |
|---------------|--------------------------------------|
| Box 4, Item 9 | Diagram of blast furnace, circa 1945 |
|---------------|--------------------------------------|

|                |                                      |
|----------------|--------------------------------------|
| Box 4, Item 10 | Diagram of blast furnace, circa 1945 |
|----------------|--------------------------------------|

|                |                                      |
|----------------|--------------------------------------|
| Box 4, Item 11 | Diagram of blast furnace, circa 1945 |
|----------------|--------------------------------------|

|                |                                      |
|----------------|--------------------------------------|
| Box 4, Item 12 | Diagram of blast furnace, circa 1945 |
|----------------|--------------------------------------|

|                |                                      |
|----------------|--------------------------------------|
| Box 4, Item 13 | Diagram of blast furnace, circa 1945 |
|----------------|--------------------------------------|

|                |                                      |
|----------------|--------------------------------------|
| Box 4, Item 14 | Diagram of blast furnace, circa 1945 |
|----------------|--------------------------------------|

|                |                                      |
|----------------|--------------------------------------|
| Box 4, Item 15 | Diagram of blast furnace, circa 1945 |
|----------------|--------------------------------------|

|                |                                      |
|----------------|--------------------------------------|
| Box 4, Item 16 | Diagram of blast furnace, circa 1945 |
|----------------|--------------------------------------|

|                |                                      |
|----------------|--------------------------------------|
| Box 4, Item 17 | Diagram of blast furnace, circa 1945 |
|----------------|--------------------------------------|

|                |                                      |
|----------------|--------------------------------------|
| Box 4, Item 18 | Diagram of blast furnace, circa 1945 |
|----------------|--------------------------------------|

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### Subseries 1.1.13: Structural Engineering, undated

|                |   |
|----------------|---|
| Box 4, Item 19 | Comparative Cross Section of the Manufactures Building, Chicago, and the Machinery Hall, Paris, undated |
|----------------|---|



|                |   |
|----------------|---|
| Box 4, Item 20 | Elevation of Arch Street gable of trainshed, undated          |
| Box 4, Item 21 | Photograph of train shed, undated                             |
| Box 4, Item 22 | Gillender Building, undated                                   |
| Box 4, Item 23 | Foundations of the Wilkes and Drexel Building, undated        |
| Box 4, Item 24 | Foundations of the American Tract Society's Building, undated |
| Box 4, Item 25 | Foundations of the Spreckels Building, undated                |
| Box 4, Item 26 | Church of the Carmelites, undated                             |
| Box 4, Item 27 | Church of the Carmelites, undated                             |
| Box 4, Item 28 | Church of the Carmelites, undated                             |
| Box 4, Item 29 | 1300 AD warehouse roof truss, undated                         |

#### Subseries 1.1.14: Tall Steel Frame Buildings, 1900-1930, undated

Scope and Contents: Contain images of historic or iconic buildings in cities across the United States including New York City, New York; Buffalo, New York; Chicago, Illinois; and Atlanta, Georgia.

|                |  |
|----------------|--|
| Box 4, Item 30 | 24a-27 Base of towers showing wind braces at corners, 1909-04-15                       |
| Box 4, Item 31 | 24a-28 Setting a balcony column at the 33rd Floor, Singer Building, 1907-04-05         |
| Box 4, Item 32 | 24a-26 First tier steel erection, Singer Building, undated                             |
| Box 4, Item 33 | 24a-25 Derrick load, Singer Building, undated  |
| Box 4, Item 34 | 24a-23 Tower foundation, Singer Building, 1906-11-20                                   |
| Box 4, Item 35 | 24a-22 Base of tower columns, Singer Building, undated                                 |
| Box 4, Item 36 | 24a-21, Drawing, pneumatic caisson foundation, Singer Building, New York City, undated |
| Box 4, Item 37 | 24a-20 Tower foundation, Singer Building, 1906-10-18                                   |
| Box 4, Item 38 | 24a-19 Sectional drawing, Singer Building, showing floors of tower, undated            |
| Box 4, Item 39 | 24-9 Tract Society building, New York City, undated                                    |
| Box 4, Item 40 | 24-10 A steel foundation uncovered, undated  |

|                |  |
|----------------|--|
| Box 4, Item 41 | 24a Singer Building, New York City, 1907                                   |
| Box 4, Item 42 | 24a-8 Singer Building, New York City, 1907                                 |
| Box 4, Item 43 | 24a-9 Singer Building, New York City, 1907                                 |
| Box 4, Item 44 | 24-33 Bracing, diagonal base, [D. S.] Morgan building, Buffalo, undated    |
| Box 4, Item 45 | 24-35 Bracing, knee braces, Hall, Chicago, undated                         |
| Box 4, Item 46 | 24-34 Bracing, diagonal base, Morgan Building, Buffalo, New York, undated  |
| Box 4, Item 47 | 24a-4 Singer Building, New York City, 1907                                 |
| Box 4, Item 48 | 24-40 Bracing, wind, Old Litany Building, Chicago, undated                 |
| Box 4, Item 49 | 24-41 Bracing, portal, [D. S.] Morgan Building, Buffalo, New York, undated |
| Box 4, Item 50 | 24a Singer Building, New York City, 1907                                   |
| Box 4, Item 51 | 24-37 Bracing, lattice, Tract Society Building, New York City, undated     |
| Box 4, Item 52 | 24a Singer Building, New York City, 1907                                   |
| Box 4, Item 53 | 24-6 Marquette Building, Chicago, undated                                  |
| Box 4, Item 54 | 24-7 [D. S.] Morgan Building, Buffalo, New York, undated                   |
| Box 4, Item 55 | 24-8 [D. S.] Morgan Building, Buffalo, New York, undated                   |
| Box 4, Item 56 | 24-2 Equitable side building, Atlanta Georgia, undated                     |
| Box 4, Item 57 | 24a Singer Building, New York City, 1907                                   |
| Box 4, Item 58 | 24-1 Rand McNally Building, Chicago, undated                               |
| Box 5, Item 1  | 24-15 Cantilever, Tract Society Building, New York City, undated           |
| Box 5, Item 2  | 24-16 Placing a Base, Chicago, undated                                     |
| Box 5, Item 3  | 24a-10 Singer Building, New York City, 1907                                |
| Box 5, Item 4  | Singer Building, undated   |
| Box 5, Item 5  | 24a Singer Building, New York City, 1907                                   |
| Box 5, Item 6  | 24-25 Rand McNally Building, Chicago, front showing terracotta, undated    |

|                |  |
|----------------|--|
| Box 5, Item 7  | 47-49 Compressed air riveter, Cassier's Magazine, page 336, 1902-02                                |
| Box 5, Item 8  | 47-50 Pneumatic Riveting Hammer, Cassier's Magazine, page 344, 1900-02                             |
| Box 5, Item 9  | 26a-42 St. Paul Building, New York, Kings views of New York City, 1903                             |
| Box 5, Item 10 | 24-26 YMCA [Young Men's Christian Association] Building, Chicago, rear showing terracotta, undated |
| Box 5, Item 11 | Spandrel section between bay windows, undated  |
| Box 5, Item 12 | 24-29 Sintels brick Marquette Building, Chicago, undated   |
| Box 5, Item 13 | 24a-24 Tower foundation, Singer Building, 1906-12-05   |
| Box 5, Item 14 | 24-22 Champlain Building, Chicago, showing terracotta, undated                                     |
| Box 5, Item 15 | 24-23 Marquette Building, Chicago, showing terracotta, undated                                     |
| Box 5, Item 16 | 24-24 Rand McNally Building, Chicago, front showing terracotta, undated                            |
| Box 5, Item 17 | 24-18 Special base, Marquette Building, Chicago, undated   |
| Box 5, Item 18 | 24-19 Column sections, undated   |
| Box 5, Item 19 | 24-17 Special base, Marquette Building, Chicago, undated   |
| Box 5, Item 20 | C-58A Building construction, undated   |
| Box 5, Item 21 | 24a Singer Building, New York City, 1907   |
| Box 5, Item 22 | 59-397 American Surety Building, New York, undated   |
| Box 5, Item 23 | 24a-11 Singer Building, New York City, 1907  |
| Box 5, Item 24 | 24a-12 Singer Building, New York City, 1907  |
| Box 5, Item 25 | 24a-13 Singer Building, New York City, 1907  |
| Box 5, Item 26 | 24a-14 Singer Building, New York City, 1907  |
| Box 5, Item 27 | 24-11 Foundations Monadnock Building, Chicago, undated   |
| Box 5, Item 28 | 24-12 Foundations plans, Old Colony Building, Chicago, undated                                     |
| Box 5, Item 29 | 24-13 Foundations cantilever, Old Colony Building, Chicago, undated                                |

|                |  |
|----------------|--|
| Box 5, Item 30 | 24-14 Cantilever, Rand McNally Building, Chicago, undated                          |
| Box 5, Item 31 | Building photograph, undated   |
| Box 5, Item 32 | Building photograph, undated   |
| Box 5, Item 33 | Woolworth Building, New York City, New York, undated                               |
| Box 5, Item 34 | Woolworth Building, the tallest office building in the world, undated              |
| Box 5, Item 35 | Building photograph, undated   |
| Box 5, Item 36 | T-40 Relative heights and systems of vertical bracing of office buildings, undated |
| Box 5, Item 37 | T-172 Post and McCord Empire State Building, 1930-09-15                            |
| Box 5, Item 38 | Empire Building, New York, undated   |
| Box 5, Item 39 | New York City skyline photograph, undated  |

### Subseries 1.2: Bridges, Cantilever, 1891-1934, undated

Scope and Contents: Document bridges built using structures that project horizontally into space and is only supported on one end. Images relate to subjects created by the division and are arranged as follows: subseries, 1.2.1, cantilever bridge; subseries 1.2.2, Beaver, Pennsylvania; subseries 1.2.3, Chinese Cantilever; subseries 1.2.4, Forth; subseries 1.2.5, Memphis; subseries 1.2.6, New Quebec; subseries 1.2.7, Old Quebec; and subseries 1.2.8, Red Rock.

#### Subseries 1.2.1: Beaver, Pennsylvania Cantilever, undated

Scope and Contents: Documents the Beaver River Bridge also known as the Beaver Valley Bridge located in Pennsylvania as an example of a cantilever deck truss.

|                |   |
|----------------|---|
| Box 5, Item 40 | Image of bridge, undated  |
| Box 5, Item 41 | Creeper traveler setting top chord section, middle panel, suspended span, undated |

#### Subseries 1.2.2: Bridges, Cantilever, 1892-1934, undated

Scope and Contents: Include images of bridges across the United States including New York, New Hampshire, California, New Jersey, Massachusetts, Mississippi, Illinois, Kentucky, and Canada. There are also several bridges from foreign countries namely India, Sweden, and Japan.

|                |   |
|----------------|---|
| Box 5, Item 42 | 20-32 Railroad bridge, undated  |
| Box 5, Item 43 | 53-125 Lake Champlain Bridge [between Crown Point, New York and Chimney Point, Vermont], view of bridge looking through trees on New York side, undated |

|                |   |
|----------------|---|
| Box 5, Item 44 | 20-35 Bridge at Poughkeepsie [New York], undated  |
| Box 5, Item 45 | 20-40 Bridge in India, undated  |
| Box 5, Item 46 | 20-39 Bridge in India, undated  |
| Box 5, Item 47 | 27-25 Columbia River Bridge, Edge Moor Bridge Works, undated                                  |
| Box 5, Item 48 | 27-24 Bridge over river Dal in Sweden, girder making and bridge building, Hutchinson, undated |
| Box 5, Item 49 | 53-209 Little Bay Bridge, Dover, New Hampshire, 1934-12                                       |
| Box 5, Item 50 | 27-36 St. John Cantilever [Saint John Steel Cantilever Bridge], undated                       |
| Box 5, Item 51 | Carquinez Bridge, California, undated   |
| Box 5, Item 52 | T-134 Cantilever, photograph, undated   |
| Box 5, Item 53 | T-133 Cantilever, principle diagram, undated  |
| Box 5, Item 54 | T-131 Badoureau photograph, undated   |
| Box 5, Item 55 | T-128 Diagram, undated  |
| Box 5, Item 56 | T-127 Cantilever, photograph, undated   |
| Box 6, Item 1  | C-831 High level viaduct between Newark and Jersey City, undated                              |
| Box 6, Item 2  | Poughkeepsie High Bridge over the Hudson, New York, undated                                   |
| Box 6, Item 3  | T-132 Cantilever, photograph, undated   |
| Box 6, Item 4  | GI-1 Old Bridge in Caucasus, Enameling, 1892-01   |
| Box 6, Item 5  | Natural bridge, photograph, undated   |
| Box 6, Item 6  | Thebes Bridge, Illinois side, undated   |
| Box 6, Item 7  | Bridge diagram, undated   |
| Box 6, Item 8  | Proposed plan of suspended centering, undated   |
| Box 6, Item 9  | Gh-9 Highway Bridge over Manchester Ship Canal, undated                                       |
| Box 6, Item 10 | Gh-5 Bridge, photograph, undated  |

|                |  |
|----------------|--|
| Box 6, Item 11 | Gi-2 Ancient Japanese highway bridge, undated  |
| Box 6, Item 12 | T-38 Great cantilever bridges in scale, undated  |
| Box 6, Item 13 | T-117 Compared schematic elevations of the Forth Bridge and the Quebec Bridge, undated       |
| Box 6, Item 14 | Albert Bridge, Chelsea, wood block color print by Robert Gibbings, 12B.7.26, undated         |
| Box 6, Item 15 | Ohio River Cantilever at Memphis designed by G. S. [George Shattuck] Morison, 12A.7.25, 1892 |
| Box 6, Item 16 | Bridge newspaper photograph, 1921-09-24  |
| Box 6, Item 17 | 53-217 Sagamore Bridge erection, undated   |
| Box 6, Item 18 | 12A.7.25 Niagara River Bridge, 1883  |
| Box 6, Item 19 | 53-216 Sagamore Bridge erection, undated   |
| Box 6, Item 20 | Thebes Bridge, undated   |
| Box 6, Item 21 | 53-139 Lake Champlain Bridge, 1929-11  |
| Box 6, Item 22 | 20-3 Norway, Bridge on the Laera, Borgund, undated   |
| Box 6, Item 23 | 53-214 Cross section of Bourne Bridge, undated   |
| Box 6, Item 24 | 53-213 Bourne Bridge, undated  |
| Box 6, Item 25 | 53-219 Sagamore Bridge erection, undated   |
| Box 6, Item 26 | 53-220 Sagamore Bridge erection, undated   |
| Box 6, Item 27 | 53-218 Sagamore Bridge erection, undated   |
| Box 6, Item 28 | 53-215 Sagamore Bridge, undated  |
| Box 6, Item 29 | Seven new highway bridges over the Mississippi [River], undated                              |
| Box 6, Item 30 | Mississippi River Bridge at Cairo, Illinois, undated   |
| Box 6, Item 31 | 86 Cantilever Bridge, Niagara Falls, undated   |
| Box 6, Item 32 | 76 Bridge photograph, undated  |

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| Box 6, Item 33 | Bridge photograph, undated  |
| Box 6, Item 34 | Poughkeepsie Bridge, undated  |
| Box 6, Item 35 | Columbia River Bridge, long view, Washington Highway, undated   |
| Box 6, Item 36 | Goethals Bridge, Staten Island, undated   |
| Box 6, Item 37 | Outer Bridge, South End Staten Island, undated  |
| Box 6, Item 38 | Outer Bridge, Staten Island, south end erection view, undated   |
| Box 6, Item 39 | Truss spans, outer bridge crossing, Staten Island, erection view hanger post, 1927-12-02                                      |
| Box 6, Item 40 | GL-27 Cantilever erection, newspaper, undated   |
| Box 6, Item 41 | GL-29 Cantilever bridge at Niagara Falls [Niagara Cantilever Bridge or Michigan Central Railway Cantilever Bridge], undated   |
| Box 6, Item 42 | GL-16 Bridge photograph, undated  |
| Box 6, Item 43 | C-242 Erecting a truss by cantilever method, undated  |
| Box 6, Item 44 | 20-28 Saint John Steel Cantilever Bridge, undated   |
| Box 6, Item 45 | 20-17 Niagara River Cantilever [Niagara Cantilever Bridge or Michigan Central Railway Cantilever Bridge], undated             |
| Box 6, Item 46 | 20-15 Cantilever from Canada side, Niagara [Niagara Cantilever Bridge or Michigan Central Railway Cantilever Bridge], undated |
| Box 6, Item 47 | 20-29 Steel cantilever over Saint John River [Saint John Steel Cantilever Bridge], undated                                    |
| Box 6, Item 48 | 53-119 Lake Champlain Bridge showing center span being connected, undated   |
| Box 6, Item 49 | 27-40 Falsework, Pend d' Oneille River, England news, 1893-03-09  |
| Box 6, Item 50 | 27-35 St. John Cantilever [Saint John Steel Cantilever Bridge], undated   |
| Box 6, Item 51 | Kentucky River High Bridge near Dixville, Kentucky, cantilever, undated   |
| Box 6, Item 52 | Gz-3 Bridge photograph, undated   |
| Box 6, Item 53 | Lake Champlain Continuous Bridge, undated   |

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| Box 6, Item 54 | LaChine Bridge, Montreal, undated  |
| Box 6, Item 55 | 20-20 Steel bridge [Jacques Cartier Bridge], Montreal, undated           |
| Box 6, Item 56 | 20-21 LaChine Bridge [Canal Lachine Bridge in Montréal, Canada], undated |

### Subseries 1.2.3: Chinese Cantilever, Muli [Sichuan China], undated

Scope and Contents: Provides images of the construction of the Muli bridge located in Sichuan Province, China. Also contains images of the Wooden Cantilever Bridge another structure located in Sichuan Province, China. In addition, there is an image of the Timber Cantilever Bridge located in Bhutan, India.

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|---------------|---|
| Box 7, Item 1 | Timber Cantilever Bridge, Bhutan, India, undated  |
| Box 7, Item 2 | Wooden cantilever bridge [Litanghe Bridge] across Litang River [Sichuan Province, China], undated |
| Box 7, Item 3 | Muli bridge, construction [Sichuan Province, China], undated                                      |

### Subseries 1.2.4: Forth Cantilever [Forth Bridge], Scotland, undated

Scope and Contents: Documents the cantilever railway bridge across the Firth of Forth in Scotland about nine miles west of central Edinburgh.

|                |   |
|----------------|---|
| Box 7, Item 4  | 31 Forth Bridge, undated                                    |
| Box 7, Item 5  | Fifth of Forth Bridge, undated                              |
| Box 7, Item 6  | 264 Wind braces, Forth Bridge, undated                      |
| Box 7, Item 7  | 341 Forth Bridge, undated                                   |
| Box 7, Item 8  | Forth Bridge, undated                                       |
| Box 7, Item 9  | 19-17 Fife Cantilever, side elevation looking east, undated |
| Box 7, Item 10 | 35-7 Caisson of Forth Bridge Pier, undated                  |
| Box 7, Item 11 | 39-12 Cross section at Pier, Forth Bridge, undated          |
| Box 7, Item 12 | T-118 Forth Bridge, undated                                 |
| Box 7, Item 13 | Forth Bridge, undated                                       |
| Box 7, Item 14 | 2602 Forth Bridge, Scotland, undated                        |
| Box 7, Item 15 | Forth Bridge, cantilevers partially constructed, undated    |



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| Box 7, Item 16 | Forth Bridge, undated |
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### Subseries 1.2.5: Memphis Cantilever [Memphis and Arkansas Bridge], 1891-1894, undated

Scope and Contents: Include images of the Memphis and Arkansas Bridge which carries Interstate 55 across the Mississippi River between West Memphis, Arkansas and Memphis, Tennessee.

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|----------------|---------------------------------|
| Box 7, Item 17 | Gh-7 Memphis Bridge, 1891-05-24 |
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|----------------|---------------------------|
| Box 7, Item 18 | Finished Pier II, undated |
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|----------------|---|
| Box 7, Item 19 | Memphis Bridge, Pier III, side and end elevation, undated |
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| Box 7, Item 20 | Gz-21 Memphis Bridge, traveler as used on east end, 1891-04-28 |
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| Box 7, Item 21 | Gz-20 Memphis Bridge, west approach viaduct, 1892-01-31 |
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| Box 7, Item 22 | Memphis Bridge, erection of east intermediate span, 1892-03-02 |
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| Box 7, Item 23 | Gz-6 Combined cantilever and suspension falsework used in erecting temporary howe trusses, undated |
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| Box 7, Item 24 | Gz-8 Memphis Bridge, east portal, 1894-05-23 |
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|----------------|---|
| Box 7, Item 25 | Memphis Bridge, caissons and air locks, undated |
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| Box 7, Item 26 | Caisson Pier III just launched, undated |
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|                |                              |
|----------------|------------------------------|
| Box 7, Item 27 | Sinking of Pier III, undated |
|----------------|------------------------------|

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| Box 7, Item 28 | Memphis Bridge with eighteen locomotives, 1892-05-12 |
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### Subseries 1.2.6: New Quebec Cantilever [Quebec Bridge (French: pont de Québec)], 1907-1916, undated

Scope and Contents: Include images of the collapsing of the old bridge and new construction of the new bridge. In addition, there are images of construction workers and equipment.

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| Box 7, Item 29 | 13A.7.24 Collapse of suspended span, Quebec Bridge, 1909 |
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| Box 7, Item 30 | 37-4 Quebec Bridge, pedestal and bulete, 1907-09-20 |
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|----------------|---|
| Box 7, Item 31 | 37-19 Quebec Bridge, hoisting two panels upper chord eyebars, undated |
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| Box 7, Item 32 | 37-20 Quebec Bridge, two upper chord panels being hoisted, undated |
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| Box 7, Item 33 | 37-21 Quebec Bridge, hoisting main end first cantilever arm, undated |
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| Box 7, Item 34 | 37-22 Quebec Bridge, hoisting center panel top chord eye bars into place, undated                          |
| Box 7, Item 35 | 37-23 Quebec Bridge, driving main top center pin, undated  |
| Box 7, Item 36 | 37-26 Quebec Bridge, driving a top chord pin from pamphlet, undated  |
| Box 7, Item 37 | 55-3 Quebec Bridge, two of the great bottom chord quarter sections, 1916                                   |
| Box 7, Item 38 | 55-4 Quebec Bridge, 45 inch sleeves on 30 inch pipes, ready to receive first section of bottom chord, 1916 |
| Box 7, Item 39 | 55-5 Quebec Bridge, main shore where members come together, 1916   |
| Box 7, Item 40 | 55-6 Quebec Bridge, middle intersection of first main diagonal to north shore cantilever arm, 1916         |
| Box 7, Item 41 | 55-7 Quebec Bridge, suspended span as erected on falsework at Sillery [Cove], 1916                         |
| Box 7, Item 42 | 55-11 Quebec Bridge, upper and lower jacking girders for hoisting suspended span, 1916                     |
| Box 7, Item 43 | 55-13 Quebec Bridge, moving truss pulled back as span leaves position, 1916                                |
| Box 7, Item 44 | 55-14 Quebec Bridge, rocker joint bearing span load to lifting girder, 1916                                |
| Box 7, Item 45 | 55-15 Quebec Bridge, rocker casting at southwest hanger broke, fall of span, 1916                          |
| Box 7, Item 46 | 55-16 Quebec Bridge, south end of east truss turned horizontal by fall of southwest corner, 1916           |
| Box 7, Item 47 | 55-17 Quebec Bridge, northwest seats showing movement toward midspan, 1916                                 |
| Box 7, Item 48 | 55-18 Quebec Bridge, northeast seat lifting girder tipped forward, 1916                                    |
| Box 7, Item 49 | 55-23 Quebec Bridge, suspended span on falsework at Sillery Cove, 1916                                     |
| Box 7, Item 50 | 55-25 Quebec Bridge, jacking equipment for hoisting suspended span, 1916                                   |
| Box 7, Item 51 | 55-28 Quebec Bridge, lower jacking girder, jacks and telltale to keep them level, 1916                     |
| Box 7, Item 52 | 55-30 Quebec Bridge, suspended span as erected on falsework, main shore of Sillery [Cove], 1916            |
| Box 7, Item 53 | 55-31 Quebec Bridge, undated   |

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| Box 7, Item 54 | 55-32 Quebec Bridge, undated   |
| Box 7, Item 55 | 55-34 Quebec Bridge, undated   |
| Box 7, Item 56 | 55-34 Quebec Bridge, anchor arm, span, and first main panel of bottom chord put in place, undated  |
| Box 7, Item 57 | 55-36 Quebec Bridge, Anchor Arm, Bottom Chord Complete, undated  |
| Box 7, Item 58 | 55-37 Quebec Bridge, traveler in working position, undated   |
| Box 7, Item 59 | 55-38 Quebec Bridge, lower half of web system erected, undated   |
| Box 7, Item 60 | 55-39 Quebec Bridge, at the close of the 1914 season, 1914   |
| Box 7, Item 61 | 55-40 Quebec Bridge, undated   |
| Box 7, Item 62 | 55-41 Quebec Bridge, undated   |
| Box 7, Item 63 | 55-42 Quebec Bridge, undated   |
| Box 7, Item 64 | 55-44 Quebec Bridge, erection crossing end of 1915 season, 1915  |
| Box 7, Item 65 | 55-45, Quebec Bridge, undated  |
| Box 8, Item 1  | 55-46 Quebec Bridge, undated   |
| Box 8, Item 2  | 55-47 Quebec Bridge, undated   |
| Box 8, Item 3  | 55-48 Quebec Bridge, undated   |
| Box 8, Item 4  | 55-49 Quebec Bridge, undated   |
| Box 8, Item 5  | 55-50 Quebec Bridge, undated   |
| Box 8, Item 6  | 55-52 Quebec Bridge, old and new cantilever in process of erection, 1907   |
| Box 8, Item 7  | 55-53 Quebec Bridge, intermediate shore loaded on frontows, 1916   |
| Box 8, Item 8  | 55-54 Quebec Bridge, arrangements for floating the suspended span, 1916  |
| Box 8, Item 9  | 55-55 Quebec Bridge, suspended shore at Sillery Cove, 1916   |
| Box 8, Item 10 | 55-58, Quebec Bridge, Two of the great bottom chord quarter sections laid together in shore for drilling, facing, and matchmaking the splice, 1916 |
| Box 8, Item 11 | 55-59 Quebec Bridge, 45 inch hole in pier end of bottom chord, 1916  |

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| Box 8, Item 12 | 55-60 Quebec Bridge, undated   |
| Box 8, Item 13 | 55-61 Quebec Bridge, 45 inch sleeves on 30 inch line in main shore, 1916             |
| Box 8, Item 14 | 55-62 Quebec Bridge, undated   |
| Box 8, Item 15 | 55-63 Quebec Bridge, undated   |
| Box 8, Item 16 | 55-64 Quebec Bridge, undated   |
| Box 8, Item 17 | 55-67 Quebec Bridge, undated   |
| Box 8, Item 18 | 55-68 Quebec Bridge, undated   |
| Box 8, Item 19 | 55-69 Quebec Bridge, A few seconds after the fall, 1916                              |
| Box 8, Item 20 | 55-73 Quebec Bridge, view of rocker in place, 1916                                   |
| Box 8, Item 21 | 55-74 Quebec Bridge, rocker and lower shore, 1916                                    |
| Box 8, Item 22 | 55-75 Quebec Bridge, sketch showing dimensions of rocker, 1916                       |
| Box 8, Item 23 | 55-77 Quebec Bridge, broken rocker casting at south west hanger, undated             |
| Box 8, Item 24 | 55-79 Quebec Bridge, sifting aperture, 1916  |
| Box 8, Item 25 | 55-81 Quebec Bridge, main shore where main lever come together, 1916                 |
| Box 8, Item 26 | 55-84 Quebec Bridge, n. o. conner of shore, undated                                  |
| Box 8, Item 27 | 55-87 Quebec Bridge, undated   |
| Box 8, Item 28 | T-30 Pittsburg and Lake Erie Railroad Cantilever Bridge over the Ohio River, undated |
| Box 8, Item 29 | T-31 Anchor and cantilever arm, undated  |
| Box 8, Item 30 | T-32 Putting in place the pin supporting diagonal member, undated                    |
| Box 8, Item 31 | T-33 Putting in place the pin supporting diagonal member, undated                    |
| Box 8, Item 32 | T-34 Cantilever arm and creeper traveler, undated                                    |
| Box 8, Item 33 | T-35 Main tower posts during erection, undated                                       |
| Box 8, Item 34 | T-36, Main tower posts, undated  |

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| Box 8, Item 35 | T-112, General elevation of steel arch project for Quebec Bridge, undated   |
| Box 8, Item 36 | T-113, General elevation of steel arch project for Quebec Bridge  |
| Box 8, Item 37 | T-124 North cantilever arm, 1916-01-15  |
| Box 8, Item 38 | T-125 After dawn on morning of span being floated to place, 1916-09-11  |
| Box 8, Item 39 | T-126 Span before, during, and after fall, 1916-09-02   |
| Box 8, Item 40 | C-81 End section of bottom chord being removed from the vertical planing machine, undated   |
| Box 8, Item 41 | C-82 Sections of the center pier post assembled and set to planing, undated   |
| Box 8, Item 42 | C-83 Machine photograph, undated  |
| Box 8, Item 43 | C-84 North shore traveler erected being equipped, also showing the office building and power house to the left, undated                             |
| Box 8, Item 44 | C-85 End elevation of the traveler showing the four tracks on which it was carried and temporary outside girders to support outside tracks, undated |
| Box 8, Item 45 | C-86 Workers and elevation photograph, undated  |
| Box 8, Item 46 | C-87 Elevation photograph, undated  |
| Box 8, Item 47 | C-88 Elevation photograph, undated  |
| Box 8, Item 48 | C-89 Elevation photograph, undated  |
| Box 8, Item 49 | C-90 Elevation photograph, undated  |
| Box 8, Item 50 | C-91 Elevation photograph, undated  |
| Box 8, Item 51 | C-92 Elevation photograph, undated  |
| Box 8, Item 52 | C-93 Workers on high equipment, undated   |
| Box 8, Item 53 | C-94 Photograph, undated  |
| Box 8, Item 54 | C-95 Photograph, undated  |
| Box 8, Item 55 | C-96 Workers on one side of bridge, undated   |
| Box 8, Item 56 | C-97 Two sides of bridge, undated   |

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| Box 8, Item 57 | C-98 Two sides of bridge, undated  |
| Box 8, Item 58 | C-99 Two sides of bridge, undated  |
| Box 8, Item 59 | C-100 Two sides of bridge, undated   |
| Box 8, Item 60 | C-101 Bridge part, undated   |
| Box 9, Item 1  | C-102 Bridge part, undated   |
| Box 9, Item 2  | C-103 Bridge photograph, undated   |
| Box 9, Item 3  | C-104 Bridge connecting parts, undated   |
| Box 9, Item 4  | C-105 Bridge part, undated   |
| Box 9, Item 5  | C-106 Connecting sections of bridges, undated  |
| Box 9, Item 6  | C-107 Connecting sections of bridges, undated  |
| Box 9, Item 7  | C-108 View from top of Northwest Main Post, Showing Inspector's walk and 12 steel stairways, undated |
| Box 9, Item 8  | C-109 Photograph of intact bridge, undated   |
| Box 9, Item 9  | C-110 Photograph of intact bridge, undated   |
| Box 9, Item 10 | C-239 Creeper traveler erecting cantilever bridge at Beaver, Pennsylvania, undated                   |
| Box 9, Item 11 | 6061 Bridge photograph, undated  |
| Box 9, Item 12 | 6070 Bridge section being floated over, undated  |
| Box 9, Item 13 | 6073 Bridge section being hoisted, undated   |
| Box 9, Item 14 | 6078 Bridge section being hoisted, undated   |
| Box 9, Item 15 | 6195 Bridge section attached, undated  |
| Box 9, Item 16 | Quebec Bridge, suspended span in the of collapsing, undated  |
| Box 9, Item 17 | Quebec Cantilever Bridge, undated  |
| Box 9, Item 18 | General elevation of St. Lawrence River Bridge at Quebec, undated                                    |
| Box 9, Item 19 | Connecting lower chord section cantilever arm, undated   |

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| Box 9, Item 20 | Gauging pin hole lower chord section, undated                                  |
| Box 9, Item 21 | Raising gantry traveler, Beaver End, undated                                   |
| Box 9, Item 22 | Rocker bearing at main pier, undated   |
| Box 9, Item 23 | Setting top chord section, middle panel, suspended span, undated               |
| Box 9, Item 24 | Bridge equipment photograph, undated   |
| Box 9, Item 25 | Monaca end view of bridge, undated   |
| Box 9, Item 26 | Monaca half of bridge complete, undated  |
| Box 9, Item 27 | Creeper traveler erecting cantilever arm, Monaca End, undated                  |
| Box 9, Item 28 | Driving pin at anchorage, undated  |
| Box 9, Item 29 | Driving pin at main pier, undated  |
| Box 9, Item 30 | Driving pin, undated   |
| Box 9, Item 31 | Gantry traveler placing first panel of cantilever arm, Monaca end, undated     |
| Box 9, Item 32 | Gantry traveler erecting lower chord sections, Anchor Arm, Monaca End, undated |

Subseries 1.2.7: Old Quebec Cantilever [Quebec Bridge (French: pont de Québec)],  
1906-1907, undated

Scope and Contents: Include images of the bridge that was built for travel from the south shore of the St. Lawrence to the north shore of Quebec City. After four years of construction, a section of the bridge collapsed into the St. Lawrence River killing seventy five workers in 1907. Images of the collapse are also included among these materials.

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| Box 9, Item 33 | 37-6 Quebec Bridge debris photograph, undated                    |
| Box 9, Item 34 | 37-15 Quebec Bridge, condition at beginning of season 1906, 1906 |
| Box 9, Item 35 | 37-16 Quebec Bridge, undated                                     |
| Box 9, Item 36 | 37-17 Quebec Bridge, undated                                     |
| Box 9, Item 37 | 37-18 Quebec Bridge, undated                                     |
| Box 9, Item 38 | 37-27 Quebec Bridge, top south anchor arm from pamphlet, 1907    |
| Box 9, Item 39 | 37-31 Quebec Bridge, from cut in department, 1907                |

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| Box 9, Item 40 | 37-42 Quebec Bridge, engineering, 1907-09-06                          |
| Box 9, Item 41 | 13A.7.25 Erection of Quebec Bridge, 1907                              |
| Box 9, Item 42 | 13A.7.25 Erection of Quebec Bridge, 1907                              |
| Box 9, Item 43 | 13A.7.25 First failure Quebec Bridge, 1907                            |
| Box 9, Item 44 | 13A.7.25 Test of member Quebec Bridge, 1907                           |
| Box 9, Item 45 | 13A.7.25 Quebec Bridge test of member, 1907                           |
| Box 9, Item 46 | 13A.7.25 Design of members, Quebec Bridge, 1907                       |
| Box 9, Item 47 | 13A.7.25 First failure, Quebec Bridge, 1907                           |
| Box 9, Item 48 | 13A.7.25 Erection of Quebec Bridge, 1907                              |
| Box 9, Item 49 | 13A.7.25 Stresses, Quebec Bridge, 1907                                |
| Box 9, Item 50 | 13A.7.25 Quebec Bridge, 1907  |
| Box 9, Item 51 | 13A.7.25 First failure Quebec Bridge, 1907                            |
| Box 9, Item 52 | T-111 St. Lawrence River map, undated                                 |
| Box 9, Item 53 | T-120 Arrow pointing at part of bridge, undated                       |
| Box 9, Item 54 | T-121 Broken steel work piled over and around the River pier, undated |
| Box 9, Item 55 | T-123 Bridge, undated   |
| Box 9, Item 56 | 2, Main tower post, diagram, undated                                  |
| Box 9, Item 57 | 3, Workers and posts, undated   |
| Box 9, Item 58 | 5, Photograph with bridge in distance, undated                        |
| Box 9, Item 59 | 6, Bridge, undated  |
| Box 9, Item 60 | 7, Bridge, undated  |
| Box 9, Item 61 | 8, Bridge, undated  |
| Box 9, Item 62 | 10, Bridge, undated   |
| Box 9, Item 63 | 11, Connecting parts of bridge, undated                               |



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| Box 10, Item 1  | 12, Bridge part closeup, undated                                 |
| Box 10, Item 2  | 13, Bridge photograph, undated                                   |
| Box 10, Item 3  | 14, Connecting parts, undated                                    |
| Box 10, Item 4  | 15, Collapsed bridge, undated                                    |
| Box 10, Item 5  | 16, Collapsed bridge, undated                                    |
| Box 10, Item 6  | 17, Collapsed bridge, undated                                    |
| Box 10, Item 7  | 18, Collapsed bridge, undated                                    |
| Box 10, Item 8  | 19, Collapsed bridge, undated                                    |
| Box 10, Item 9  | 20, Collapsed bridge, undated                                    |
| Box 10, Item 10 | 21, Bridge debris, undated                                       |
| Box 10, Item 11 | 22, Bridge debris, undated                                       |
| Box 10, Item 12 | 23, Collapsed bridge, undated                                    |
| Box 10, Item 13 | 24, Collapsed bridge, undated                                    |
| Box 10, Item 14 | 25, Elevation looking east, undated                              |
| Box 10, Item 15 | 26, Elevation looking east from west of bridge, undated          |
| Box 10, Item 16 | 27, Bridge part closeup, undated                                 |
| Box 10, Item 17 | 29, Intermediate section of lower chord anchor arm, undated      |
| Box 10, Item 18 | Quebec Bridge first disaster, south shore span collapse, undated |
| Box 10, Item 19 | Quebec Bridge, 1906-11-20  |
| Box 10, Item 20 | Quebec Bridge, undated   |
| Box 10, Item 21 | Quebec Bridge collapse, undated                                  |
| Box 10, Item 22 | Quebec Bridge collapse, undated                                  |

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**Subseries 1.2.8: Red Rock Cantilever [Red Rock Bridge], undated**

Scope and Contents: Contain images of the Red Rock Bridge, constructed in 1890 across the Colorado River, including some of its erection.

Box 10, Item 23 20-7 Red Rock, undated

Box 10, Item 24 20-8 Red Rock, undated

Box 10, Item 25 20-9 Red Rock, undated

Box 10, Item 26 20-10 Red Rock, undated

Box 10, Item 27 20287-167 Later erection Red Rock Cantilever Bridge, undated

Box 10, Item 28 20288-168 Completed Red Rock Cantilever Bridge, undated

Box 10, Item 29 268 Red Rock Cantilever, undated

Box 10, Item 30 269 Red Rock Cantilever, undated

Box 10, Item 31 270 Red Rock Cantilever, undated

Box 10, Item 32 271 Red Rock Cantilever, undated

Box 10, Item 33 272 Red Rock Cantilever, undated

Box 10, Item 34 273 Red Rock Cantilever, undated

Box 10, Item 35 275 Red Rock Cantilever, undated

Box 10, Item 36 276 Red Rock Cantilever Bridge, undated

Box 10, Item 37 376 Red Rock Cantilever, undated

Box 10, Item 38 380 Red Rock Cantilever, undated

Box 10, Item 39 384 Red Rock Cantilever, undated

**Subseries 1.3: Bridges, Concrete Arch, and Beam, 1758-1920, undated**

Scope and Contents: Images document subjects created by the division. The subjects are arranged as follows: subseries 1.3.1, 29th Street Baltimore Concrete Arch; subseries 1.3.2, Masonry Arch; subseries 1.3.3, Cappelán Concrete Arch; subseries 1.3.4, Concrete Arch; subseries 1.3.5, DuJour Masonry Arch; subseries 1.3.6, Masonry Arch Over Seine; subseries 1.3.7, Martin's Creek Viaduct; subseries 1.3.8, Old and New London Bridge; subseries 1.3.9, Sur La Seine Concrete Arch; subseries 1.3.10, Sur L'elorn Concrete Arch; subseries 1.3.11, Tournelle Concrete Arch; and subseries 1.3.12, Tunkhannock Viaduct.

**Subseries 1.3.1: 29th Street Baltimore Concrete Arch [29th Street Bridge], undated**

Scope and Contents: Include a small number of images relating to the 29th Street Bridge constructed in Baltimore, Maryland to connect vehicular traffic crossing the Jones Fall valley and Pennsylvania Railroad.

Box 10, Item 40 C-853 Elevation of 29th Street Bridge, undated

Box 10, Item 41 C-854 Half section of centering, undated

Box 10, Item 42 C-855 Placement of centering, undated

**Subseries 1.3.2: Bridges, Masonry Arch, 1865-1912, undated**

Scope and Contents: Contain images of masonry arch bridges, generally made of stone with an arch, constructed throughout the United States and the world including Spain, Belgium, Persia, Italy, France, Switzerland, England, Scotland, Ireland, Chile, Ecuador, Brazil, Norway, Germany, and Luxembourg.

Box 10, Item 43 A6 Bridge of St. Benezet [Pont Saint-Bénézet also known as the Pont d'Avignon] across the Rhone at Avignon, undated

Box 10, Item 44 A7 Karlsbrucke at Prag [Charles Bridge (Karlův most)], undated

Box 10, Item 45 A8 Ancient Bridge at Kreuznach [Alte Nahebrücke (English: Old Nahe Bridge)], Germany, undated

Box 10, Item 46 A9 Bridge of Alcantara, Toledo, Spain, undated

Box 10, Item 47 A10 St. Martin Bridge, Toledo, Spain, undated

Box 10, Item 48 A11 Bridge at Tournai [Pont des Troues], Belgium, undated

Box 10, Item 49 A12 Trinity Bridge at Florence [Ponte Santa Trinita], undated

Box 10, Item 50 A13 Bridge at Ispahan, Persia, undated

Box 10, Item 51 A14 Chinese bridge, undated

Box 10, Item 52 A15 Bridge at Bordeaux [Pont de pierre or Stone Bridge], France, undated

Box 10, Item 53 A17 Pont Neuf at Albi, France, undated

Box 10, Item 54 A18 Bridge over the Nydeck at Berne, Switzerland, undated

Box 10, Item 55 A19 Bridge of St. Sauveur [Flèche d'argent Bridge], undated

Box 10, Item 56 A20 Ancient and modern French bridges, undated

Box 10, Item 57 A21 Viaduct of Morlaux, France [Morlaix Viaduct], undated

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| Box 10, Item 58 | A25 An English street with long grade approach, undated  |
| Box 10, Item 59 | Aa Devil's Bridge, Switzerland, undated  |
| Box 10, Item 60 | Aa-12 Skew Arch, Sully [Skew Arch Bridge], undated   |
| Box 10, Item 61 | Aa-18 Au Change [Pont au Change], Paris, undated   |
| Box 10, Item 62 | Aa-57 Chareuton Bridge across the Marne River, France, undated   |
| Box 10, Item 63 | Aa-58 Chareuton Bridge across the Marne River, France, undated   |
| Box 10, Item 64 | Ba-66 Waterloo, London, undated  |
| Box 10, Item 65 | Ba-67 Waterloo, London, undated  |
| Box 11, Item 1  | Ba-70 Horse and carriage on bridge (Box 13), undated   |
| Box 11, Item 2  | Ba-71 Locomotive on bridge, undated  |
| Box 11, Item 3  | Ba-72 Bridge across river, undated   |
| Box 11, Item 4  | Ba-73 Bridge across river, undated   |
| Box 11, Item 5  | Ba-74 Locomotive on bridge, undated  |
| Box 11, Item 6  | Ba-75 Bridge over water, undated   |
| Box 11, Item 7  | Ba-76 Bridge Over wetland, undated   |
| Box 11, Item 8  | Ba-77 Bridge over water, undated   |
| Box 11, Item 9  | Ba-78 Bridge over water, undated   |
| Box 11, Item 10 | 1-10 Ponte Salara, Cresy, undated  |
| Box 11, Item 11 | 1-13 Viaduct, Rome and Gabii, undated  |
| Box 11, Item 12 | 1-14 Roman Bridge at Volci Over Fiori, undated   |
| Box 11, Item 13 | 1-15 Anchoring during bridge construction clamps Roman Pons Cestius, undated   |
| Box 11, Item 14 | 1-16 Roman bridge of the four heads [Ponte Fabricio often called Ponte dei Quattro Capi (the bridge of the four heads)], undated |
| Box 11, Item 15 | 1-17 P. St. Angelo, undated  |

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| Box 11, Item 16 | 6-13 Neroberg, Germany, 1912   |
| Box 11, Item 17 | 6-46 Entz Bridge Near Wildbad, 1886  |
| Box 11, Item 18 | 6-50 German bridge, undated  |
| Box 11, Item 19 | 7-20 Old and new Carr Bridges [Carrbridge Packhorse Bridge], Strathspey, undated |
| Box 11, Item 20 | 7-22 Broomielaw Bridge, Glasgow, undated   |
| Box 11, Item 21 | 7-23 Bridge of Forth, Stirling, undated  |
| Box 11, Item 22 | 7-27 Viaduct on the Divie, Morayshire, undated                                   |
| Box 11, Item 23 | 7-29 Pease Bridge, Berwickshire, undated   |
| Box 11, Item 24 | 7-31 Tongland Bridge, Kirkcudbright, undated                                     |
| Box 11, Item 25 | 7a-15 Ireland, Queen's Bridge, Belfast, undated                                  |
| Box 11, Item 26 | 7a-20 O'Connell's Bridge, Dublin [Ireland], undated                              |
| Box 11, Item 27 | 7a-24 Ireland Brickeen Bridge, Killarney, undated                                |
| Box 11, Item 28 | 7a-25 Ireland, Viaduct at Drogheda, County Louth, undated                        |
| Box 11, Item 29 | 7a-34 Cheser and Grosvenor Bridge, undated                                       |
| Box 11, Item 30 | 8-29 Old Bridge, Santiago, Chile, undated  |
| Box 11, Item 31 | 8-31 Jambeli Bridge on National Road, Ecuador, Brazil, undated                   |
| Box 11, Item 32 | 8-37 Algeria Bridge, undated   |
| Box 11, Item 33 | 8-39 Bridge at Bellows Falls, undated  |
| Box 11, Item 34 | 8-49 Starucca Viaduct, Erie Railroad in Pennsylvania, undated                    |
| Box 11, Item 35 | 9-15 Structure of the Vaults of the Old Metz Bridges, undated                    |
| Box 11, Item 36 | 9-20 France, Boxwood Bridge Viaduct, 1865  |
| Box 11, Item 37 | 9-21 Pont de Lapeyriere Bridge, France, 1870                                     |
| Box 11, Item 38 | 9-23 Stone Arch Bridge across Charles River, undated                             |
| Box 11, Item 39 | 9-32 Leeds, New York, Wheelwright, undated                                       |

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| Box 11, Item 40 | 10-4 London Bridge foundations, undated  |
| Box 11, Item 41 | 21a-39 Emmer Bridge, across the Garonne River, Toulouse, France, undated                       |
| Box 11, Item 42 | 26a-2 Helicoidal Brick Arch, Main Street, Pittsburg, Pennsylvania, undated                     |
| Box 11, Item 43 | 42-1 Concrete Arch Bridge Span, Atlas, Portland, undated                                       |
| Box 11, Item 44 | 45a-10 Chatillou Costa, Ponte Sul Marmoise, undated  |
| Box 11, Item 45 | 45a-11 Chatillou, ancient Roman bridge, undated  |
| Box 11, Item 46 | 45a-29 Ponte Fabricio, Rome, oldest bridge in Rome, first bridge arch not semi circle, undated |
| Box 11, Item 47 | 45a-30 Ponte Fabricio, Rome, oldest bridge in Rome, undated                                    |
| Box 11, Item 48 | 45a-52 Viaduct, Morlaix, France, undated   |
| Box 11, Item 49 | 45a-55 Ponte Margherita, Rome, modern stone arch bridge, undated                               |
| Box 11, Item 50 | 45a-56 Ponte Cestio, Rome, stone arch bridge, undated  |
| Box 11, Item 51 | 53-14 Pont de Beray, Paris, undated  |
| Box 11, Item 52 | 53-15 Pont de Tolbiac, Paris, undated  |
| Box 11, Item 53 | 53-26 Dresden, Friedrich August Bridge, undated  |
| Box 11, Item 54 | 53-77 Orkla Bridge, Norway, undated  |
| Box 11, Item 55 | 53-85 Ancient bridge in France, undated  |
| Box 11, Item 56 | T-63 Bridge illustration, undated  |
| Box 11, Item 57 | T-160 Asian bridge, undated  |
| Box 11, Item 58 | T-161 Asian bridge with domed buildings, undated   |
| Box 11, Item 59 | T-162 Foreign bridge, undated  |
| Box 11, Item 60 | T-165 Foreign bridge, undated  |
| Box 11, Item 61 | T-166 Foreign bridge, undated  |
| Box 11, Item 62 | T-167 Foreign bridge, undated  |

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| Box 11, Item 63 | T-168 Foreign bridge, undated   |
| Box 12, Item 1  | T-169 Bridge over river, undated  |
| Box 12, Item 2  | T-184 Foreign bridge, undated   |
| Box 12, Item 3  | 5.7.23 Roman bridge, Alcantara, North Spain, circa 100 A. D., undated                         |
| Box 12, Item 4  | 5.7.23 Roman bridge, Alcantara, North Spain, circa 100 A. D., undated                         |
| Box 12, Item 5  | 5.7.23 Roman bridge, Alcantara, North Spain, circa 100 A. D., undated                         |
| Box 12, Item 6  | 5.7.23 Pont Augustus, Rimini, 20 B. C., undated   |
| Box 12, Item 7  | 6.7.23 Moorish Alcantara Bridge, Toledo, etching by F. Brangwyn, undated                      |
| Box 12, Item 8  | 6.7.23 Pont de Avignon (1187), etching by Hedley Fitton, undated                              |
| Box 12, Item 9  | 9.7.23 Waterway percentages, stone arch bridges, undated                                      |
| Box 12, Item 10 | 12A.8.5 Johnstown Flood, Kurtz and Allison, Chicago, lithograph, 1889                         |
| Box 12, Item 11 | 13B.1.1 Modern British woodcut by N. Rooke "The Two Bridges", undated                         |
| Box 12, Item 12 | 19098 Philippines, Manila, Malabon Bridge, which the insurgents attempted to destroy, undated |
| Box 12, Item 13 | 50 Rialto, Venice, undated  |
| Box 12, Item 14 | Ponte Vecchio, Florence, undated  |
| Box 12, Item 15 | 19 Devil's Bridge, St. Gotthard Pass, Switzerland, undated                                    |
| Box 12, Item 16 | 26 Bridge below the Rhone Glacier, Switzerland, undated                                       |
| Box 12, Item 17 | 27 Rhine Bridge, from Via Mala, Switzerland, undated  |
| Box 12, Item 18 | 28 Third Bridge, Via Mala, Switzerland, undated   |
| Box 12, Item 19 | 43 Vecchio Bridge, Florence, Italy, undated   |
| Box 12, Item 20 | 44 Rialto, Venice, Italy, undated   |
| Box 12, Item 21 | 66 Two arch stone railroad bridges, Fairmount Park, Philadelphia, undated                     |
| Box 12, Item 22 | Antietam Creek designed by Captain Claudius Crozet, undated                                   |

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| Box 12, Item 23 | 71 Oldest existing bridge, undated   |
| Box 12, Item 24 | Rhaetian Railway Viaduct over the River Inn, undated   |
| Box 12, Item 25 | Landwasser Viaduct on electrified Rhaetian Railway near Filisur [Graubünden, Switzerland], undated |
| Box 12, Item 26 | Wissahickon Railroad Bridge, [Philadelphia] Pennsylvania, undated                                  |
| Box 12, Item 27 | Stony Brook Bridge, Boston [Massachusetts], undated  |
| Box 12, Item 28 | Lake Park, Milwaukee, undated  |
| Box 12, Item 29 | Algeria, undated   |
| Box 12, Item 30 | Espalion, France, 8th Century, undated   |
| Box 12, Item 31 | Albi, France, undated  |
| Box 12, Item 32 | Pont Neuf, Paris, undated  |
| Box 12, Item 33 | Pont des Consuls over Tarn, 1500 Year, France, undated   |
| Box 12, Item 34 | Toledo, Spain, built in 1212, undated  |
| Box 12, Item 35 | 16030a Switzerland, Nydeck Bridge, undated   |
| Box 12, Item 36 | White Elster Valley Viaduct [Saxony, Germany], undated   |
| Box 12, Item 37 | Bridge in Plauen, Germany, undated   |
| Box 12, Item 38 | Susquehanna, Penroad at Harrisburg, undated  |
| Box 12, Item 39 | Luxembourg, undated  |
| Box 12, Item 40 | 2775 Bridge photograph, undated  |
| Box 12, Item 41 | 2461 Rialto Venice, undated  |
| Box 12, Item 42 | 4325 Bridge photograph, undated  |
| Box 12, Item 43 | 5737 European bridge, undated  |
| Box 12, Item 44 | 5942 Bridge through mountains and river, undated   |
| Box 12, Item 45 | Pont Valentre, Calhors, France, undated  |



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| Box 12, Item 46 | Pont Valentre, Calhors, France, undated                   |
| Box 12, Item 47 | Pont D' Avignon, supposed form, undated                   |
| Box 12, Item 48 | San Martin Bridge, over the Tagos, Toledo, Spain, undated |
| Box 12, Item 49 | Bridge at Orleans, France, undated                        |
| Box 12, Item 50 | Highway Arch at Saint Sauveur, France, undated            |
| Box 12, Item 51 | Bridge at Saumur, France, undated                         |
| Box 12, Item 52 | Built by Caesar, white marble, undated                    |
| Box 12, Item 53 | Pons Augustus at Rimini built about 20 B.C., undated      |
| Box 12, Item 54 | Roman bridge over the Guadiana at Merida, Spain, undated  |
| Box 12, Item 55 | Frederic August Bridge, Plauen, Saxony, undated           |
| Box 12, Item 56 | Rhone Near Source, undated                                |
| Box 12, Item 57 | Bridge photograph, undated                                |
| Box 12, Item 58 | Ecuador, Guaranda Bridge, undated                         |
| Box 12, Item 59 | Details of Assabet River Bridge, undated                  |
| Box 12, Item 60 | Bellows Falls Bridge, undated                             |
| Box 12, Item 61 | Bridge in Italy, undated                                  |
| Box 12, Item 62 | Tall bridge with locomotive, undated                      |
| Box 12, Item 63 | Bridge across waterfall, undated                          |
| Box 13, Item 1  | Glasgow Bridge illustration, undated                      |
| Box 13, Item 2  | Roman Bridge at Rimini, 22 A.D., undated                  |

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### Subseries 1.3.3: Cappelán Concrete Arch [Cappelen Memorial Bridge], undated

Scope and Contents: Contains images of the bridge that is in the city of Minneapolis in Hennepin County. Named after the Norwegian-American engineer, Frederick William Cappelen, who supervised the design and construction it carries Franklin Avenue over the Mississippi River in Minneapolis.

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| Box 13, Item 3 | C-833 Typical Mississippi barge and tow under the Cappelen Bridge [Cappelen Memorial Bridge], Minneapolis, undated |
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| Box 13, Item 4 | T-190 Bridge and reflection, undated |
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#### Subseries 1.3.4: Concrete Arch, 1897-1921, undated

Scope and Contents: Contain images of bridges located in the United States including Topeka, Kansas; Washington, DC; Spokane, Washington; Philadelphia, Pennsylvania; West Springfield, Massachusetts; Union Park, Chicago; Detroit, Michigan; Stockbridge, Massachusetts; St. Paul, Minnesota; Cleveland, Ohio; New York, New York; Pittsburgh, Pennsylvania; and Freeport, Illinois. In addition there are bridges from foreign countries including Auckland, New Zealand; Ninegade, Denmark; and Saint-Pierre-du-Vauvray, France.

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| Box 13, Item 5 | 12A.7.23 Melan Arch at Topeka, Kansas, 1897 |
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| Box 13, Item 6 | 13A.7.23 Competitive design, Connecticut Avenue Viaduct, G. B. [George B.] Morison, undated |
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| Box 13, Item 7 | 13A.7.23 Sandy Hill Bridge over the Hudson, circa 1908 |
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| Box 13, Item 8 | 13A.7.23 Henry Hudson proposed memorial arch, undated |
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| Box 13, Item 9 | 13A.7.23 Competitive design, Connecticut Avenue Viaduct, G. B. [George B.] Morison, undated |
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| Box 13, Item 10 | 13C.7.23 Plougastel Bridge [Plougastel Bridge or Albert-Loupe Bridge, France], centering, undated |
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| Box 13, Item 11 | 13C.7.23 Plougastel Bridge [Plougastel Bridge or Albert-Loupe Bridge], France, undated |
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| Box 13, Item 12 | 13C.7.23 Proposed arch Freysignet, undated |
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| Box 13, Item 13 | 13C.7.23 Castelmoron Bridge, France [Castelmoron-sur-Lot Suspension Bridge], undated |
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| Box 13, Item 14 | C-52 Tunnel model design, undated |
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| Box 13, Item 15 | C-654 Sketch showing position of hydraulic jacks for adjustment of arch axis, undated |
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| Box 13, Item 16 | C-670 Sketch showing action of hydraulic jacks in arch axis adjustment, undated |
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| Box 13, Item 17 | C-780 Washington DC bridge, undated |
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| Box 13, Item 18 | C-784 Cars on Washington DC bridge, undated |
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| Box 13, Item 19 | C-785 Stone Bridge, Washington DC, undated   |
| Box 13, Item 20 | T-29 Grafton Bridge, Auckland, New Zealand, taken during construction of main arch, undated                            |
| Box 13, Item 21 | T-64 Arch bridge of reinforced concrete across Latah Creek in Spokane, Washington, undated                             |
| Box 13, Item 22 | T-65 Details of design of arch concrete bridge of open spandrel construction, undated                                  |
| Box 13, Item 23 | T-181 Sections of bridge arches and crown, undated   |
| Box 13, Item 24 | 18-19 Louvain Bridge on private property, vierendeel type, undated   |
| Box 13, Item 25 | 40-1 Walnut Lane Bridge over Wissahickon Creek [Philadelphia, Pennsylvania], photograph G. F. S., undated              |
| Box 13, Item 26 | 40-2 Walnut Lane Concrete Arch, [Philadelphia, Pennsylvania], centering removed, photograph G.F.S., undated            |
| Box 13, Item 27 | 40-3 Walnut Lane Concrete Arch, [Philadelphia, Pennsylvania], centering removed end view, photograph G. F. S., undated |
| Box 13, Item 28 | 40-4 Walnut Lane Concrete Arch, [Philadelphia, Pennsylvania], centering removed, photograph G. F. S., undated          |
| Box 13, Item 29 | 40-5 Centering of Walnut Lane Concrete Arch, [Philadelphia, Pennsylvania], photograph G. F. S., undated                |
| Box 13, Item 30 | 40-7 Walnut Lane Concrete Arch [Philadelphia, Pennsylvania], showing centering from end, photograph G. F. S., undated  |
| Box 13, Item 31 | 40-29 Proposed West Springfield, Massachusetts bridge, reinforced concrete, undated                                    |
| Box 13, Item 32 | 40-37 Springfield bridge, details, undated   |
| Box 13, Item 33 | 40-39 Monongahela River Bridge, undated  |
| Box 13, Item 34 | 40-40 Springfield Bridge, Springfield, Massachusetts at time of extreme high water in 1922, 1922                       |
| Box 13, Item 35 | 40-41 Springfield Bridge, Springfield, Massachusetts at time if extreme high water in 1923, 1923                       |
| Box 13, Item 36 | 40-53 Springfield Bridge, details of center of arch and center tower, undated  |

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| Box 13, Item 37 | 45a-31 Risorgimento Arch across the Tiber in Rome, undated   |
| Box 13, Item 38 | 45a-32 Facade of the bridge at Ninegade, Denmark C. C. W., 1914  |
| Box 13, Item 39 | 45a-33 Reinforcement of the bridge at Ninegade, Denmark, 1914  |
| Box 13, Item 40 | 45a-34 Reinforcement of the bridge at Ninegade, Denmark, 1914  |
| Box 13, Item 41 | 45a-39 Bridge in connection with the Aalykke Viaduct, Denmark, 1914  |
| Box 13, Item 42 | 45a-40 Scaffold of the bridge, Aalykke Viaduct, Denmark, 1914  |
| Box 13, Item 43 | 45a-41 Reinforcement of main arches of the bridge, Aalykke Viaduct, Denmark, 1914                                      |
| Box 13, Item 44 | 45a-42 Framework and reinforcement of the roadway of the bridge, Aalykke Viaduct, Denmark, 1914                        |
| Box 13, Item 45 | 45a-43 Details of middle pier of the bridge, Aalykke Viaduct, Denmark, 1914  |
| Box 13, Item 46 | 45a-44 View of bridge in connection with the Aalykke Viaduct, Denmark, 1914  |
| Box 13, Item 47 | 45a-45 Facade of the Aalykke Viaduct, Denmark, 1914  |
| Box 13, Item 48 | 45a-46 Scaffold of the Aalykke Viaduct, Denmark, 1914  |
| Box 13, Item 49 | 45a-47 Rugaarde Viaduct, Denmark, 1914   |
| Box 13, Item 50 | 45a-48 Stiffenings between the arches of the Rugaarde Viaduct, Denmark, 1914   |
| Box 13, Item 51 | 45a-49 Scaffold of the Rugaarde Viaduct, Denmark, 1914   |
| Box 13, Item 52 | 45a-50 Reinforcement of the Rugaarde Viaduct, Denmark, 1914  |
| Box 13, Item 53 | 45a-51 Middelfart Viaduct, Denmark, 1914   |
| Box 13, Item 54 | 45a-53 Railroad Viaduct at Saugives, Cherr-Aresa R. R. Switzerland, undated  |
| Box 13, Item 55 | 53-94 Marsh Rainbow Arch [Marsh Arch Bridge commonly known as Rainbow Bridge], Augusta, Butler County, Kansas, undated |
| Box 13, Item 56 | 53-211 Albert Louppe Bridge, undated   |
| Box 13, Item 57 | 53-212 Albert Louppe Bridge, undated   |
| Box 13, Item 58 | 53-238 West St. Bridge, Dedham, rigid frame bridge, undated  |

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| Box 13, Item 59 | Union Park, Chicago footbridge, undated  |
| Box 13, Item 60 | Bella Isle Park Detroit, Michigan, undated   |
| Box 13, Item 61 | Stockbridge, Massachusetts footbridge, undated   |
| Box 13, Item 62 | Como Park footbridge, St. Paul, Minnesota, undated   |
| Box 13, Item 63 | Hudson Memorial, undated   |
| Box 14, Item 1  | Bridge at Falls City, King Company, Washington, on Sunset Highway, undated                     |
| Box 14, Item 2  | Concrete Bridge on Columbia Rover Highway, Multnomah Company, Oregon, undated                  |
| Box 14, Item 3  | New Rocky Bridge, largest concrete bridge in the world, Cleveland, Ohio, undated               |
| Box 14, Item 4  | Great Arch of the Henry Hudson Memorial Bridge, New York, undated                              |
| Box 14, Item 5  | New Rocky Bridge, Cleveland, Ohio, undated   |
| Box 14, Item 6  | Longest concrete bridge in the world, Illinois Central Railroad, Carbondale, Illinois, undated |
| Box 14, Item 7  | Photograph of bridge, undated  |
| Box 14, Item 8  | Philadelphia, number three over Wissahickon, 220, undated                                      |
| Box 14, Item 9  | Photograph of bridge, undated  |
| Box 14, Item 10 | Tygarts Creek Bridge near Olive Hill, Kentucky, undated  |
| Box 14, Item 11 | Reinforced Concrete Arch Saint-Pierre-du-Vauvray, France, undated                              |
| Box 14, Item 12 | George Westinghouse Bridge, Pittsburgh, Pennsylvania, undated                                  |
| Box 14, Item 13 | 8. Krape Park Rigid, frame bridge Freeport, Illinois, architect's conception, undated          |
| Box 14, Item 14 | 9. Krape Park Bridge, Freeport, Illinois, finished bridge, undated                             |
| Box 14, Item 15 | Highway Bridge at Saint-Pierre-du-Vauvray, France, undated                                     |
| Box 14, Item 16 | Arroyo Seco, undated   |
| Box 14, Item 17 | Photograph of bridge, undated  |
| Box 14, Item 18 | Street bridge in Stankor, undated  |

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| Box 14, Item 19 | Photograph of model bridge, undated                               |
| Box 14, Item 20 | Pacific Highway Bridge, Umpqua River, Oregon, 1921                |
| Box 14, Item 21 | "Havana Special" on Long Key Viaduct, undated                     |
| Box 14, Item 22 | Connecticut Avenue, Washington, DC bridges, highway arch, undated |

### Subseries 1.3.5: Dujour Masonry Arch [Point-du-Jour Bridge?], undated

Scope and Contents: Include images of

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|-----------------|--|
| Box 14, Item 23 | B46p Bridge Point, Du Jour, Paris, [France], undated |
| Box 14, Item 24 | B47p Bridge Point, Du Jour, Paris, [France], undated |
| Box 14, Item 25 | B48p Bridge Point, Du Jour, Paris, [France], undated |
| Box 14, Item 26 | B49p Bridge Point, Du Jour, Paris [France], undated  |
| Box 14, Item 27 | B50p Bridge Point, Du Jour, Paris [France], undated  |
| Box 14, Item 28 | B51p Bridge Point, Du Jour, Paris, [France], undated |
| Box 14, Item 29 | B52p Bridge Point, Du Jour, Paris, [France], undated |

### Subseries 1.3.6: Masonry Arch [Pont Neuf or New Bridge] over Seine [River], undated

Scope and Contents: Captures images including some etchings of the masonry arch bridge that crosses the Seine River in Paris, France. Constructed between 1578 and 1607 it linked the right bank of Paris to the left.

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| Box 14, Item 30 | Pont De La Concorde, Paris, undated   |
| Box 14, Item 31 | 9.7.23 Pont Royal, Paris, 1685, Aqua, etch by Eugene Bejot, undated   |
| Box 14, Item 32 | 9.7.23 Pont Neuf, Paris, 1607, etch by G. Roy Partridge, undated  |
| Box 14, Item 33 | 9.7.23 Pont Neuf, Paris, 1607, etch by Louis Orr, undated   |
| Box 14, Item 34 | 9.7.23 Vue du Decintrement de Pont de Neuilly, from Perronet's "Description des Ponts," Paris 1792, undated |
| Box 14, Item 35 | 9.7.23 Pont de la Concorde, Paris, 1794, undated  |
| Box 14, Item 36 | B3p National Paris, undated   |

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| Box 14, Item 37 | B4p National Paris, undated   |
| Box 14, Item 38 | B5p Tolbac, Paris, undated  |
| Box 14, Item 39 | B6p Tolbac, Paris, undated  |
| Box 14, Item 40 | B7p Bercy, Paris, undated   |
| Box 14, Item 41 | B8p Bercy, Paris, undated   |
| Box 14, Item 42 | B9p Austerlitz, Paris, undated  |
| Box 14, Item 43 | B10p Austerlitz, Paris, undated   |
| Box 14, Item 44 | B18p Notre Dame, Paris, undated   |
| Box 14, Item 45 | B23p Neuf, Paris, undated   |
| Box 14, Item 46 | B27p Royal, Paris, undated  |
| Box 14, Item 47 | B28p Pouth Royal, Paris, undated  |
| Box 14, Item 48 | B32p Concorde, Paris, undated   |
| Box 14, Item 49 | B33p Concorde, Paris, undated   |
| Box 14, Item 50 | B34p Invalides, Paris, undated  |
| Box 14, Item 51 | B35p Invalides, Paris, undated  |
| Box 14, Item 52 | B36p Alma, Paris, undated   |
| Box 14, Item 53 | B53p Pont Louis Philippe, Paris, undated  |
| Box 14, Item 54 | B54p Pont Louis Philippe, Paris, undated  |
| Box 14, Item 55 | B55p St. Marie, Paris, undated  |
| Box 14, Item 56 | B56p St. Marie, Paris, undated  |
| Box 14, Item 57 | B61p Sevres Bridge over Seine, France, undated  |
| Box 14, Item 58 | Portland Cement Association, Bridge at Fall City, King County, on Sunset Highway, undated |

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**Subseries 1.3.7: Martins Creek Viaduct [Kingsley Bridge], Delaware, Lackawanna and Western Railroad, 1916-1920**

Scope and Contents: Include images of the bridge constructed in 1915 and located in Susquehanna County, Pennsylvania.

|                |                                  |
|----------------|----------------------------------|
| Box 15, Item 1 | C-497 Viaduct, 1916              |
| Box 15, Item 2 | T-23 Martins Creek Viaduct, 1917 |
| Box 15, Item 3 | T-24 Martins Creek Viaduct, 1918 |
| Box 15, Item 4 | T-25 Martins Creek Viaduct, 1919 |
| Box 15, Item 5 | 4807 Bridge railroad arch, 1920  |

**Subseries 1.3.8: Old and New London Bridge, 1758, undated**

Scope and Contents: Consist of images relating to London Bridges including the older structure which crossed the river between the 13th and 19th centuries and the current London Bridge, built between 1968 and 1972. It replaced the older structure on March 16, 1973.

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| Box 15, Item 6  | 10.7.23 London Bridge, 1209, undated             |
| Box 15, Item 7  | T-183 London Bridge, etching, undated            |
| Box 15, Item 8  | Aa-60 London Bridge, undated                     |
| Box 15, Item 9  | Aa-61 London Bridge, undated                     |
| Box 15, Item 10 | Aa-63 London Bridge, with usual traffic, undated |
| Box 15, Item 11 | Aa-65 London Bridge in 1758, 1758                |

**Subseries 1.3.9: Sur La Seine Concrete Arch, undated**

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|-----------------|--|
| Box 15, Item 12 | C-652 Bridge with reflection, undated        |
| Box 15, Item 13 | C-642 Hangers for concreting arches, undated |

**Subseries 1.3.10: Sur L' Elorn Concrete Arch, undated**

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|-----------------|---|
| Box 15, Item 14 | T-180 Bridge photograph, undated                                  |
| Box 15, Item 15 | C-639 Horizontal sketch, undated                                  |
| Box 15, Item 16 | C-645 Moving the hangers on reinforced concrete pontoons, undated |



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| Box 15, Item 17 | C-644 Ensemble model, undated                                      |
| Box 15, Item 18 | C-645 Aarch constructed by the Freyssinet method, undated          |
| Box 15, Item 19 | C-646 Brest abutment showing hollow cross section of arch, undated |
| Box 15, Item 20 | C-647 Bearing of the first arch, undated                           |
| Box 15, Item 21 | C-650 Details of lower end of arch center, undated                 |

### Subseries 1.3.11: Tournelle [Pont de la Tournelle] Concrete Arch, undated

Scope and Contents: Consist of images of the bridge located in Paris, France spanning the Seine River.

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|-----------------|---|
| Box 15, Item 22 | C-640 Arrangement of hydraulic cylinders for decentering an arch, undated |
| Box 15, Item 23 | C-641 Method of constructing lower part of arches, undated                |
| Box 15, Item 24 | C-648 Arrangement of hydraulic cylinders for decentering an arch, undated |
| Box 15, Item 25 | C-651 Overview, undated   |

### Subseries 1.3.12: Tunkhannock [Tunkhannock Creek] Viaduct, undated

Scope and Contents: Include images of bridge on the Nicholson Cutoff rail segment of the Norfolk Southern Railway Sunbury Line and spans Tunkhannock Creek in Nicholson, Pennsylvania.

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|-----------------|--|
| Box 15, Item 26 | T-21 Diagram of progress of construction of Tunkhannock Viaduct up to October 1, undated |
| Box 15, Item 27 | T-22 View of Tunkhannock Creek Viaduct under construction, undated                       |
| Box 15, Item 28 | T-26 Tunkhannock Creek Viaduct, undated  |
| Box 15, Item 29 | T-27 Tunkhannock Creek Viaduct, undated  |
| Box 15, Item 30 | T-28 Tunkhannock Creek Viaduct, undated  |
| Box 15, Item 31 | 5497 Tunkhannock Creek Viaduct, undated  |
| Box 15, Item 32 | 53-70 Tunkhannock Creek Viaduct, undated   |
| Box 15, Item 33 | Grandfey Viaduct near Fribourg, Switzerland, undated                                     |

**Subseries 1.4: Bridges, Masonry Aqueducts, 1812-1933, undated**

Scope and Contents: Images document subjects created by the division and are arranged as follows: subseries 1.4.1, Aqueducts, Masonry; subseries 1.4.2, Aqueducts, Pont du Gard; subseries 1.4.3, Aqueducts, Segovia; subseries 1.4.4, Aqueducts, United States of America (USA), High Bridge, Cabin John, Boston; subseries 1.4.5, Bridges, Pile and Viaduct (Wood); subseries 1.4.6, Charlestown Bridge, Boston, Truss/Draw; subseries 1.4.7, Metal Viaduct; subseries 1.4.8, Pecos Viaduct; and subseries 1.4.9, Wood Arch and Truss.

**Subseries 1.4.1: Aqueducts, Masonry, 1932, undated**

|                 |  |
|-----------------|--|
| Box 15, Item 34 | 5.7.41 Porto Maggiore in Rome Carrying Claudia and Anio Novus, undated             |
| Box 15, Item 35 | 5.7.33 Viaduct on Appian Way Engraving by Piranesi, undated                        |
| Box 15, Item 36 | 5.8.3 Claudia Aqueduct with Anio Novus Above, undated                              |
| Box 15, Item 37 | 5.8.3 Claudian Queduct, Rome, undated  |
| Box 15, Item 38 | 5.8.3 Porta Maggiore, Claudia and Anio Novus Over the Highway, Rome, undated       |
| Box 15, Item 39 | 5.8.3 Claudia and Anio Novus Aqueduct near Porta Furba, undated                    |
| Box 15, Item 40 | 5.8.3 Marcia, Tepula and Julia Aqueducts near Porta Maggiore, undated              |
| Box 15, Item 41 | 5.8.3 Types of Ancient Aqueducts, undated  |
| Box 15, Item 42 | 5.8.3 Roman Aqueduct Arches, Marcia, undated                                       |
| Box 15, Item 43 | A16 Aqueduct Near Lisbon, Portugal, undated  |
| Box 15, Item 44 | A22 Roquefavour Aqueduct, France, undated  |
| Box 15, Item 45 | 4 Via Appia Nuova- Remains of the Aqueduct of Claudius 1st Century Detail, undated |
| Box 15, Item 46 | Avignon, France, Roman, undated  |
| Box 15, Item 47 | 4666 Avignon, France, undated  |
| Box 15, Item 48 | Bridge Remains, undated  |
| Box 15, Item 49 | 1-20 Rome, The Campagna, Ruins of Aqueducts, undated                               |
| Box 15, Item 50 | 1-22 Rome, Aurelian Wall and Aqueduct of Claudius, Near Porta Maggiore, undated    |
| Box 15, Item 51 | 1-23 Rome Aurelian Wall and Aqueduct of Claudius, Near Porta San Lorenzo, undated  |

Box 15, Item 52            8-33 Aqueduct of San Cosme, Mexico, undated

Box 15, Item 53            8-34 Mexico Morelia Aqueduct, undated

Box 15, Item 54            8-36 Mexico Coahuahua Area Aqueduct, undated

Box 15, Item 55            8-56 Cabin John Bridge today, 1932

#### Subseries 1.4.2: Aqueducts, Pont du Gard [Bridge], 1917, undated

Scope and Contents:    Consist of images relating to the Roman aqueduct bridge which crosses the river Gardon near the town of Vers-Pont-du-Gard in southern France.

Box 16, Item 1            1-28 Pont du Gard section, undated

Box 16, Item 2            1-29 Sections of Martian aqueduct and Pont du Gard, undated

Box 16, Item 3            5.8.3 Detail, Pont du Gard Roman aqueduct, South France, undated

Box 16, Item 4            5.8.3 Pont du Gard, Roman aqueduct, South France, undated

Box 16, Item 5            Pont du Gard, Nimes, France, undated

Box 16, Item 6            Pont du Gard, undated

Box 16, Item 7            1917 conduit, Pont du Gard, Nimes, undated

#### Subseries 1.4.3: Aqueduct, Segovia, undated

Scope and Contents:    Include images of the Roman aqueduct located in Segovia, Spain and built to channel water from springs in the mountains to the city's fountains, public baths, and private houses.

Box 16, Item 8            5.8.3 Aqueduct Segovia, Spain, built 109 A. D., undated

Box 16, Item 9            5.8.3 Roman Aqueduct, Segovia, Spain, undated

Box 16, Item 10           T-163 Aqueduct photograph, undated

Box 16, Item 11           T-164 Aqueduct photograph, undated

Box 16, Item 12           A5 Old Roman Aqueduct at Segovia, Spain, undated

Box 16, Item 13           Segoria Aqueduct, undated

Box 16, Item 14           Spain Segovia, Roman Aqueduct, undated

Box 16, Item 15 Roman Aqueduct in Spain, undated

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**Subseries 1.4.4: Aqueducts, United States of America (USA), High Bridge, Cabin John, Boston, 1842, undated**

Scope and Contents: Consist of images relating to a number a structures throughout the United States including High Bridge, New York; Cabin John Bridge, Maryland; Echo Bridge, Massachusetts; Sudbury Aqueduct, Massachusetts; Maline Creek, Missouri; Croton Aqueduct, New York; and Sing Sing Kill Bridge, New York.

Box 16, Item 16 8-43 High Bridge, undated

Box 16, Item 17 59-318 Sudbury conduit, Echo Bridge [Sudbury River Aqueduct, Echo Bridge], undated

Box 16, Item 18 A23 Cabin John Bridge, near Washington DC, undated

Box 16, Item 19 A24 Echo Bridge; Sudbury Aqueduct, near Boston, Massachusetts, undated

Box 16, Item 20 G-21 Maline Creek Bridge completed, undated

Box 16, Item 21 11.7.23 High Bridge, Harlem River, New York, 1842

Box 16, Item 22 11.8.3 Croton Aqueduct Crossing, Sing Sing [Kill Bridge], 1842

Box 16, Item 23 High Bridge, New York City, undated

Box 16, Item 24 Cabin John Bridge, undated

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**Subseries 1.4.5: Bridges, Pile and Viaduct (Wood), 1875, undated**

Box 16, Item 25 12-20 Trestle bridge on Hawaiian railway, undated

Box 16, Item 26 12-46 Erection of wooden trestle, undated

Box 16, Item 27 12-48 Wyoming high trestle near Cape Horn, undated

Box 16, Item 28 18a-10 Solway Junction Viaduct, undated

Box 16, Item 29 59-398 Bridge construction, undated

Box 16, Item 30 59-399 Bridge construction, undated

Box 16, Item 31 C-717 Wooden bridge construction, undated

Box 16, Item 32 Bridge at Portage, New York, railroad burned May 6, 1875, 1875

Box 16, Item 33          Wooden bridge over water, undated

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#### Subseries 1.4.6: Charlestown Bridge, Boston, Truss/Draw, 1899-1900, undated

Box 16, Item 34          27-3 Charlestown Bridge, circa 1900

Box 16, Item 35          43-2 Charlestown Bridge, diagram, Boston abutment and timber platform, 1900

Box 16, Item 36          43-6 Charlestown Bridge, draw machinery, plan, and section of power room, 1900

Box 16, Item 37          43-7 Charlestown Bridge, draw machinery, landings, and jacks, 1900

Box 16, Item 38          43-8 Charlestown Bridge, end elevation, and section draw span, 1900

Box 16, Item 39          43-9 Charlestown Bridge, cross section, 1900

Box 16, Item 40          43-10 Charlestown Bridge, interior of turntable, 1899

Box 16, Item 41          43-11 Charlestown Bridge, interior of draw span turntable, 1899

Box 16, Item 42          43-12 Charlestown Bridge, turntable of draw span, 1899

Box 16, Item 43          43-13 Charlestown Bridge, draw span, 1899-05-11

Box 16, Item 44          43-14 Charlestown Bridge, depositing concrete, pier number 5, undated

Box 16, Item 45          43-15 Charlestown Bridge, pier number 8, undated

Box 16, Item 46          43-16 Charlestown Bridge, distribution of load on turn table, undated

Box 16, Item 47          43-17 Charlestown Bridge, safety girders draw, undated

Box 16, Item 48          43-18 Charlestown Bridge, north face of north waterway, undated

Box 16, Item 49          43-19 Charlestown Bridge, erection of draw centre panels, undated

Box 16, Item 50          43-20 Charlestown Bridge, laying floor of draw, undated

Box 16, Item 51          43-21 Charlestown Bridge, laying sidewalk floor off draw, undated

Box 16, Item 52          43-22 Charlestown Bridge, first car travelling across draw, undated

Box 16, Item 53          43-23 Charlestown Bridge, speeches at opening, undated

Box 16, Item 54          43-27 Charlestown Bridge, from North End of Charles River Bridge, undated

Box 16, Item 55      46-9 Charlestown Bridge, caisson after pumping, undated

Box 16, Item 56      46-10 Charlestown Bridge, caisson partially pumped out, undated

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#### Subseries 1.4.7: Metal Viaduct, 1862, undated

Box 17, Item 1      16-13 Panther Creek Viaduct, undated

Box 17, Item 2      16-14 Bridge near Berlin Falls [Rakotzbrücke or Devil's Bridge], undated

Box 17, Item 3      16-16 France Sioule, undated

Box 17, Item 4      16-17 France Sioule, undated

Box 17, Item 5      16-19 Kinzna Viao, undated

Box 17, Item 6      16-20 Viaduct Garabit, undated

Box 17, Item 7      16-23 Verugas Viaduct, Oroya Railway, undated

Box 17, Item 8      16-24 Peru, Verrugas, undated

Box 17, Item 9      16-25 Chili, South America, Santiago and Valparaiso Railroad, undated

Box 17, Item 10      16-28 Grandfey Viaduct Fribourg, circa 1862

Box 17, Item 11      16-29 Locomotive and people on High Bridge, undated

Box 17, Item 12      16-30 Switzerland, Bern, Railway Bridge, undated

Box 17, Item 13      16-33 France, Viaduct Bellon, undated

Box 17, Item 14      16-36 Norwegian Bridge diagrams, undated

Box 17, Item 15      16-38 Curved bridge railway, undated

Box 17, Item 16      16-39 Tall bridge construction, undated

Box 17, Item 17      16-41 Kinzua Viaduct [Kinzua Bridge], undated

Box 17, Item 18      16-43 Kinzua Viaduct [Kinzua Bridge], undated

Box 17, Item 19      16-46 Viaduct on the Rigi Railway, undated

Box 17, Item 20      18-33 Fribourg Viaduct interior, undated

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|-----------------|---|
| Box 17, Item 21 | 18a-13 Old Tay Bridge, from South, undated                                    |
| Box 17, Item 22 | 18a-14 Old Tay Bridge, undated  |
| Box 17, Item 23 | 18a-15 Old Tay Bridge, undated  |
| Box 17, Item 24 | 18a-20 New Tay Viaduct, first train from North, Scotland, undated             |
| Box 17, Item 25 | 18a-23 Tay Bridge, Scotland, pier of north and south ends of gap, undated     |
| Box 17, Item 26 | 25-13 Germany, Guggenloch Viaduct, undated                                    |
| Box 17, Item 27 | 27-38 Bridge five miles east of Toronto on Ontario and Quebec Bridge, undated |
| Box 17, Item 28 | 27-48 France, Bouble Viaduct [Viaduc de la Bouble], undated                   |
| Box 17, Item 29 | 34-1 An Ohio Viaduct, failure, undated  |
| Box 17, Item 30 | 34-2 Viaduct in Ohio, undated   |
| Box 17, Item 31 | 34-12 Tay Bridge, south Scotland, after accident, undated                     |
| Box 17, Item 32 | 35-16 Lima, Peru, Varugas, South America, undated                             |
| Box 17, Item 33 | 35-17 Viaduct at La Sioule, undated   |
| Box 17, Item 34 | 78 Kinzua Viaduct [Kinzua Bridge], undated                                    |
| Box 17, Item 35 | 263 Viaduct L. F. & D. Railroad, undated                                      |
| Box 17, Item 36 | Gd-2 Wrought Iron Viaduct at Dresdon, New York, undated                       |
| Box 17, Item 37 | Gokteik Viaduct (erecting), Burma, India, undated                             |
| Box 17, Item 38 | Gokteik Viaduct, Burma, India, undated  |
| Box 17, Item 39 | Lattice Girder Bridge, Fribough, Switzerland, undated                         |
| Box 17, Item 40 | 6587 Bridge, undated  |
| Box 17, Item 41 | Lattice Bridge construction, undated  |
| Box 17, Item 42 | Lattice Bridge construction, undated  |
| Box 17, Item 43 | Odot Bridge, undated  |

**Subseries 1.4.8: Pecos Viaduct [Pecos River High Bridge], circa 1891-1892, undated**

**Scope and Contents:** Documents the construction and completion of the Pecos High Bridge known as the Pecos Viaduct located in Texas. The bridge was intended to solve problems affecting the Galveston, Harrisburg, and San Antonio Railway since its opening in 1883. Construction began in 1891 with images documenting the progress, workers, and completion of the bridge.

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| Box 17, Item 44 | Gz-13 Pecos River Viaduct construction, undated                                    |
| Box 17, Item 45 | Gz-14 Pecos River Viaduct, Galveston, Harrisburg, and San Antonio Railway, undated |
| Box 17, Item 46 | Gz-15 Pecos River Viaduct, construction, undated                                   |
| Box 17, Item 47 | Pecos Viaduct showing completed bridge, undated                                    |
| Box 17, Item 48 | 252 Pecos Bridge, Texas, construction, undated                                     |
| Box 17, Item 49 | 253 Pecos Bridge, Texas, construction, undated                                     |
| Box 17, Item 50 | 259 Pecos Bridge, Texas, construction, undated                                     |
| Box 17, Item 51 | 260 Pecos Bridge, Texas, construction, undated                                     |
| Box 17, Item 52 | 261 Pecos Bridge, Texas, construction, undated                                     |
| Box 17, Item 53 | 262 Pecos Bridge, Texas, construction, undated                                     |
| Box 17, Item 54 | 301 Pecos Bridge, Texas, construction, undated                                     |
| Box 17, Item 55 | 302 Pecos Bridge, Texas, construction, undated                                     |
| Box 17, Item 56 | 303 Pecos Bridge, Texas, construction, undated                                     |
| Box 17, Item 57 | 304 Pecos Bridge, Texas, construction, undated                                     |
| Box 17, Item 58 | 305 Pecos Bridge, Texas, construction, undated                                     |
| Box 17, Item 59 | 306 Pecos Bridge, Texas, construction, undated                                     |
| Box 17, Item 60 | 307 Pecos Bridge, Texas, construction, undated                                     |
| Box 17, Item 61 | 308 Pecos Bridge, Texas, construction, undated                                     |
| Box 17, Item 62 | 309 Pecos Bridge, Texas, construction, undated                                     |
| Box 18, Item 1  | 310 Pecos Bridge, Texas, construction, undated                                     |



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| Box 18, Item 2  | 311 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 3  | 312 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 4  | 313 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 5  | 314 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 6  | 315 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 7  | 316 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 8  | 317 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 9  | 318 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 10 | 319 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 11 | 320 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 12 | 321 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 13 | 322 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 14 | 323 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 15 | 324 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 16 | 325 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 17 | 326 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 18 | 327 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 19 | 328 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 20 | 329 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 21 | 330 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 22 | 331 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 23 | 332 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 24 | 333 Pecos Bridge, Texas, construction, undated         |
| Box 18, Item 25 | 334 Pecos Bridge, Texas, construction workers, undated |

Box 18, Item 26      335 Pecos Bridge, Texas, construction workers, undated

Box 18, Item 27      336 Pecos Bridge, Texas, construction workers, undated

Box 18, Item 28      337 Pecos Bridge, Texas, construction workers, undated

Box 18, Item 29      365 Pecos Bridge, Texas, completed, undated

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#### Subseries 1.4.9: Wood Arch and Truss, 1792-1933, undated

Box 18, Item 30      5-7 Florence Bridge, undated

Box 18, Item 31      12-4 G Gauthey Pont de Bassano and Pont Pres de Wattingen, undated

Box 18, Item 32      12-5 Gauthey, Pont de Wattingen, undated

Box 18, Item 33      12-11 Kapellbrucke and cathedral, Lucerne, through the Bernese Oberland, undated

Box 18, Item 34      12-13 Covered bridge, Black Lutschine Valley, through the Bernese Oberland, undated

Box 18, Item 35      12-14 Back of Eglisaw, Switzerland, undated

Box 18, Item 36      12-18 A wooden bridge diagram, undated

Box 18, Item 37      12-15 St. Mary's Viaduct elevation of truss, undated

Box 18, Item 38      12-34 Howe Truss, Johnson Theory, and Practice of Modern Framed Structures, undated

Box 18, Item 39      12-36 Delaware River Bridge, New York and Erie Railroad, undated

Box 18, Item 40      12-37 Old bridge on Pennsylvania Railroad near Harrisburg over Susquehanna River, undated

Box 18, Item 41      12-38 Camel's Back Bridge, Harrisburg, Pennsylvania, 1812

Box 18, Item 42      15-5 Combination truss, undated

Box 18, Item 43      15-20 Huon River and Bridge, Huonville, Tasmania [Australia], undated

Box 18, Item 44      40-43 Old Toll Bridge, Springfield, Massachusetts, at time of extreme high water in 1922, 1922

Box 18, Item 45      40-57 Old Toll Bridge, Springfield, Massachusetts, exterior view, undated

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| Box 18, Item 46 | 53-203 Bridge at Haverhill, Massachusetts, over the Merrimack, 1933                        |
| Box 18, Item 47 | 53-204 Bridge over the Piscataqua, near Portsmouth, New Hampshire, 1933                    |
| Box 18, Item 48 | 5.7.22 Caesar's Bridge across the Rhine, 55 B.C., undated                                  |
| Box 18, Item 49 | 5.7.23 Trajan's Bridge over the Danube, 104 A. D., undated                                 |
| Box 18, Item 50 | 11.7.23 Essex Merrimack Bridge, 1792   |
| Box 18, Item 51 | 11.7.23 Early American wooden arches, 1812-1814  |
| Box 18, Item 52 | 18 A Curious wooden bridge, Switzerland, undated   |
| Box 18, Item 53 | 42 Covered footbridge, Lucerne, Switzerland, undated                                       |
| Box 18, Item 54 | 58 Bridge below the Lotefos, Norway, undated   |
| Box 18, Item 55 | 3402 European bridge, undated  |
| Box 18, Item 56 | C-777 On the Road on a Bridge, undated   |
| Box 18, Item 57 | Covered Bridge over Connecticut River, undated   |
| Box 19, Item 1  | Tucker Toll Bridge, undated  |
| Box 19, Item 2  | Walpole Toll Bridge, built 1867, undated   |
| Box 19, Item 3  | Gz-12 Bridge construction, undated   |
| Box 19, Item 4  | Gi-8 Single arch bridge on the Erie Railroad, undated                                      |
| Box 19, Item 5  | Permanent bridge, Philadelphia, Pennsylvania, the "Colossus" Bridge, undated               |
| Box 19, Item 6  | Bridge at South Windham, Maine, undated  |
| Box 19, Item 7  | Androscoggin River Bridge, Brunswick, Maine, built 1804, undated                           |
| Box 19, Item 8  | Upper ferry ridge, Schuylkill River, Philadelphia, Pennsylvania, built 1812, undated       |
| Box 19, Item 9  | Hartford Bridge, Hartford, Connecticut, built 1808, rebuilt 1818, undated                  |
| Box 19, Item 10 | Middle Ferry Bridge, Schuylkill River, Philadelphia, Pennsylvania, built 1804-6, undated   |
| Box 19, Item 11 | Ithiel Town's Bridge, patented, first bridge over Mill River, New Haven, Connecticut, 1820 |

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| Box 19, Item 12 | Herman Haupt's bridges, from "Hints on Bridge Construction by an Engineer" by Herman Haupt, 1842                   |
| Box 19, Item 13 | Colonel Stephen H. Long's Bridge, patented 1830, first bridge, Jackson's Bridge, Baltimore, Maryland, undated      |
| Box 19, Item 14 | Bridges in Captian John Smith's "The General History of Virginia, New England and the Summer Isles", 1620, undated |
| Box 19, Item 15 | Covered bridge over water, undated   |
| Box 19, Item 16 | Covered wooden bridge, undated   |
| Box 19, Item 17 | Covered wooden bridge over river, undated  |

### Subseries 1.5: Bridges, Metal Arch, 1799-1932, undated

Scope and Contents: Contain images of bridges made from steel, concrete, or other materials in which the base of the arch structure is below the deck but the top rises above it. Images document subjects created by the division and are arranged as follows: subseries 1.5.1, American metal arch; subseries 1.5.2, bridges, girder and tubular; subseries 1.5.3, Buffalo Fort Erie [Peace Bridge, Buffalo New York and Fort Erie, Ontario]; subseries 1.5.4, Crooked River High Bridge, metal arch; subseries 1.5.5, Eads Bridge, metal arch, St. Louis; subseries 1.5.6, foreign metal arch; subseries, 1.5.7, Hell Gate Bridge, metal arch; subseries 1.5.8, Little Hell Gate Bridge, truss; subseries 1.5.9, Nam Ti [Faux Namti Bridge], metal, arch; subseries 1.5.10, Niagara Arch; subseries 1.5.11, Queensboro Bridge [Ed Koch Queensboro Bridge], cantilever; and subseries 1.5.12, Washington Steel Arch Bridge.

#### Subseries 1.5.1: American Metal Arch, 1836-1901, undated

|                 |   |
|-----------------|---|
| Box 19, Item 18 | 12A.7.23 Niagara River Arch, 1898   |
| Box 19, Item 19 | 12A.7.23 Niagara River Arch, 1898   |
| Box 19, Item 20 | 13A.7.28 Proposed Arlington Memorial Bridge, Professor Burr's design, 1901  |
| Box 19, Item 21 | 21-19 Cambridge Bridge final design detail perspective, undated   |
| Box 19, Item 22 | 21-45 Niagara Arch, Pennsylvania Steel Company, Pulaski New York, Salmon River, undated                           |
| Box 19, Item 23 | 53-66 Cambridge Bridge, lighter placing section of steel arch rib, undated  |
| Box 19, Item 24 | 53-202 French King Bridge over Connecticut River, east of Greenfield, Massachusetts, on the Mohawk Trail, undated |
| Box 19, Item 25 | Gz-2 Driving Park Avenue Bridge, undated  |

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| Box 19, Item 26 | Gh-3 Bridge photograph, undated  |
| Box 19, Item 27 | Gf Riveted Arch Bridge, undated  |
| Box 19, Item 28 | Gf-5 Three Hinged Steel Arch, Mill Creek Arch, Youngstown, Ohio, undated   |
| Box 19, Item 29 | Gf-6 Perspective view of design for Fairmount Park Bridge, undated   |
| Box 19, Item 30 | Gf-7 Design for the new bridge over the Schuylkill River in Fairmount Park, Philadelphia, Pennsylvania, undated                        |
| Box 19, Item 31 | Gf-8 Design for the new bridge over the Schuylkill River in Fairmount Park, Philadelphia, Pennsylvania, undated                        |
| Box 19, Item 32 | Gf-10 Bridge diagram, undated  |
| Box 19, Item 33 | Gf-17 Chestnut Street Bridge, Schuylkill River, Philadelphia, Pennsylvania, undated  |
| Box 19, Item 34 | Bellows Falls, Vermont, over the Connecticut River, Span 648, undated  |
| Box 19, Item 35 | Bellows Falls, Vermont, over the Connecticut River, Span 540, undated  |
| Box 19, Item 36 | Bellows Falls, Vermont, over the Connecticut River, Span 648, undated  |
| Box 19, Item 37 | Henry Hudson Memorial Arch over East River, Looking Towards Hudson, undated  |
| Box 19, Item 38 | Cast Iron Arch, Chestnut Street, Philadelphia, over Schuylkill River, 1866   |
| Box 19, Item 39 | [Dunlap's Creek Bridge] First American cast iron bridge built 1836-7 over Dunlap's Creek, Brownville Bridgeport, Pennsylvania, undated |
| Box 19, Item 40 | Charles River embankment, undated  |

### Subseries 1.5.2: Bridges, Girder and Tubular, 1896, undated

Scope and Contents: Plate girders bridge are structural elements commonly used in bridge construction, industrial buildings, and other large structures. They consist of welded steel plates that form a deep, rectangular section capable of supporting heavy loads.

A tubular bridge is a bridge built as a rigid box girder section within which the traffic is carried. [1] Famous examples include the original Britannia Bridge over the Menai Strait, the Conwy railway bridge over the River Conwy, designed and tested by William Fairbairn and built by Robert Stephenson between 1846 and 1850, and the original Victoria Bridge in Montreal.

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|-----------------|--|
| Box 19, Item 41 | 10-21 Bridge and station, London, England, undated |
| Box 19, Item 42 | 14-10 Brittonia Bridge, undated                    |

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|-----------------|--|
| Box 19, Item 43 | 14-12 Britannia Bridge, Wales, undated   |
| Box 19, Item 44 | 14-30 France, Pont de Langon [Langon Bridge], undated  |
| Box 19, Item 45 | 14-36 Plate girder bridge, undated   |
| Box 19, Item 46 | 24-46 Girder Sedguick Hall, Senox, undated   |
| Box 19, Item 47 | 27-2 Sunbury Bridge, from photograph owned by McKibben, Youngstown Bridge Company, builders, undated   |
| Box 19, Item 48 | 27-8 Sunbury Bridge, 1896-03-05  |
| Box 19, Item 49 | 27-14 Shiffler Bridge Company, erection of 123 inches span bridge, Philadelphia, undated   |
| Box 19, Item 50 | 27-20 Park Avenue Viaduct, New York City, Hudson River Railroad, undated   |
| Box 19, Item 51 | 46-34 Washington Street Bridge over Baltimore and Annapolis Railroad, Boston, girder removed in 1897, undated                                |
| Box 19, Item 52 | 46-35 Washington Street Bridge over Baltimore and Annapolis Railroad, Boston, girder removed in 1897, corrosion by locomotive gases, undated |
| Box 19, Item 53 | 49-25a Royal gorge hanging bridge skinner, undated   |
| Box 19, Item 54 | GL-30 Erecting railroad plate girder spans, undated  |
| Box 19, Item 55 | Gk-1 Bridge diagram sections, undated  |
| Box 19, Item 56 | Gz-11 Photograph of bridge, undated  |
| Box 19, Item 57 | Gh-1 Outline elevation of steel bridges over the canal, World's Columbian Exposition, undated  |
| Box 19, Item 58 | Gh-2 Detail of steel bridges over the canal, World's Columbian Exposition, undated   |
| Box 19, Item 59 | Ga-3 Plate girder bridge, over Mattabessett River, East Berlin, Connecticut, undated   |
| Box 20, Item 1  | Ga-4 Plate girder bridge over Beaver River, Pittsburg and Lake Erie Railroad, undated  |
| Box 20, Item 2  | Ga-6 Plate girder bridge over river, undated   |
| Box 20, Item 3  | Ga-8 Types of plate girder bridges, diagram, undated   |
| Box 20, Item 4  | Ga-9 Neoclassical inspired bridge, undated   |

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| Box 20, Item 5  | Ga-10 Details of bridge, solid floor, and track construction, undated                                    |
| Box 20, Item 6  | Ga-11 Subway bridge erecting and masonry, undated  |
| Box 20, Item 7  | Ga-13 New Jersey Central Railroad Bridge, undated  |
| Box 20, Item 8  | C-235 Illustration of plate girder bridge, undated   |
| Box 20, Item 9  | C-236 Derrick erecting eighty five foot plate girder on western Maryland railroad, undated               |
| Box 20, Item 10 | C-237 Unloading plate girders by gallows frame, undated  |
| Box 20, Item 11 | C-240 Erecting a plate girder by launching, undated  |
| Box 20, Item 12 | Construction of the Main Britannia Tube on the staging, undated  |
| Box 20, Item 13 | Menai Bridge, Smiles Stephenson, undated   |
| Box 20, Item 14 | Victoria Bridge, Smiles Stephenson, undated  |
| Box 20, Item 15 | A heavy traffic street in Camden, New Jersey, requires the removal of dangerous columns, undated         |
| Box 20, Item 16 | Brick arch and plate girder overhead bridge, Great Western Railway, England, undated                     |
| Box 20, Item 17 | View of abutment, undated  |
| Box 20, Item 18 | One of the oldest bridges, River Dart, Postbridge [Postbridge Clapper Bridge], Devon, [England], undated |
| Box 20, Item 19 | Plate girder bridge construction, undated  |
| Box 20, Item 20 | Railroad tracks under plate girder bridge, undated   |
| Box 20, Item 21 | Horse and carriages on bridge over river, undated  |

### Subseries 1.5.3: Buffalo Fort Erie Bridge, Metal Arch [Peace Bridge, Buffalo New York and Fort Erie, Ontario], undated

Scope and Contents: Include images of the Peace Bridge [Buffalo New York and Fort Erie, Ontario] which was built by the Bethlehem Steel Company over the Niagara River between Buffalo, New York and Fort Erie, Ontario, Canada.

|                 |                                    |
|-----------------|------------------------------------|
| Box 20, Item 22 | Bridge nearing completion, undated |
|-----------------|------------------------------------|

|                 |   |
|-----------------|---|
| Box 20, Item 23 | Erecting the steel work, undated                                  |
| Box 20, Item 24 | Completed bridge, undated   |
| Box 20, Item 25 | Completed bridge, undated   |
| Box 20, Item 26 | Completed bridge, undated   |
| Box 20, Item 27 | Couple on bench, car in foreground, bridge in background, undated |
| Box 20, Item 28 | How the Buffalo Fort Erie Bridge will look on completion, undated |
| Box 20, Item 29 | Buffalo Fort Erie Peace Bridge from the air, undated              |

#### Subseries 1.5.4: Crooked River High Bridge, Metal Arch, 1911, undated

Scope and Contents: Contain photographic images including sketches and diagrams of steel arch bridge that spans the Crooked River gorge in Jefferson County, Oregon.

|                 |  |
|-----------------|--|
| Box 20, Item 30 | T-50 Outline diagram of Crooked River arch, undated  |
| Box 20, Item 31 | T-51 Sketch of Canyon cross section, showing method of transferring steel across gorge, Crooked Bridge Arch, undated |
| Box 20, Item 32 | T-52 Wooden traveler used in erection, undated   |
| Box 20, Item 33 | T-53 Five panels of north half erected, setting closing section of top chord, circa 1911-09-02                       |

#### Subseries 1.5.5: Eads Bridge, Metal Arch, St. Louis, 1872, undated

Scope and Contents: Include images of combined road and railway bridge built over the Mississippi River to connect the cities of St. Louis, Missouri, and East St. Louis, Illinois.

|                 |  |
|-----------------|--|
| Box 20, Item 34 | 9518 Magnificent Eads Bridge, St. Louis, Missouri, undated     |
| Box 20, Item 35 | 12A.7.23 Eads Bridge at St. Louis etching by Pennell, 1872     |
| Box 20, Item 36 | Gf-20 St. Louis Bridge, Woodward Frontispiece, undated         |
| Box 20, Item 37 | Eads Bridge construction, undated                              |
| Box 20, Item 38 | Eads Bridge over the Mississippi, St. Louis, Missouri, undated |
| Box 20, Item 39 | Eads Bridge, St. Louis, undated                                |
| Box 20, Item 40 | Section of skewback, undated                                   |



Box 20, Item 41      Underside of bridge, undated

Box 20, Item 42      Completed bridge, undated

Box 20, Item 43      Plan of section EF, undated

Box 20, Item 44      Details of tubes, undated

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### Subseries 1.5.6: Foreign Metal Arch, 1799-1932, undated

Box 20, Item 45      10-9 Tower Bridge, New Black Friars Bridge, undated

Box 20, Item 46      10-10 Black Friars Bridge, undated

Box 20, Item 47      10-11 Black Friars Bridge, undated

Box 20, Item 48      10-25 241 Westminster Bridge and St. Thomas' Hospital, undated

Box 20, Item 49      11-23 Pont d'Arcole, Paris, undated

Box 20, Item 50      11-27 Paris, Pont du First Peres, undated

Box 20, Item 51      11-33 Pont du Carrousel, undated

Box 20, Item 52      11-41 Pont du Grenelle, 1875

Box 20, Item 53      13-9 Constantine Bridge, Rhumel, Algeria, undated

Box 20, Item 54      13-11 Vichy from Pont Atelier, undated

Box 20, Item 55      13-13 Nantes Le Canal France, undated

Box 20, Item 56      13-15 Pont du Var near Nice, undated

Box 20, Item 57      13-24 Spey Bridge, Fochabers, Morayshire, undated

Box 20, Item 58      13-26 Ireland, Kings Bridge, undated

Box 20, Item 59      18-2 Hambourg Emperor's, undated

Box 20, Item 60      21a-1 Rhine Bridge near Bonn, undated

Box 20, Item 61      21a-2 Draft for a permanent road bridge over the Rhine near Bonn, undated

Box 20, Item 62      21a-4 Lima terminal barrier, Oroya Railway, undated

|                 |   |
|-----------------|---|
| Box 20, Item 63 | 21a-5 Rhine Bridge above Coblenz, undated                         |
| Box 20, Item 64 | 21a-7 Coblenz Germany Railroad Bridge, undated                    |
| Box 21, Item 1  | 21a-9 High Bridge near Levenau, undated                           |
| Box 21, Item 2  | 21a-11 Rhine Bridge near Düsseldorf, undated                      |
| Box 21, Item 3  | 21a-13 Rhine Bridge near Duisburg, Hochfeld, undated              |
| Box 21, Item 4  | 21a-15 Eiselstein underpass in Cologne, undated                   |
| Box 21, Item 5  | 21a-17 Constance, Germany, Rhine Bridge, undated                  |
| Box 21, Item 6  | 21a-19 French bridge and railway, undated                         |
| Box 21, Item 7  | 21a-25 Switzerland, Bern, Kirchenfeld Bridge, undated             |
| Box 21, Item 8  | 21a-26 Kornhaus Bridge, Bern, undated                             |
| Box 21, Item 9  | 21a-32 Constantine Bridge in Rhumel, Algeria, undated             |
| Box 21, Item 10 | 21a-40 Pont Maria, Pia in Porto, undated                          |
| Box 21, Item 11 | 21a-41 Garabit Viaduct, undated                                   |
| Box 21, Item 12 | 21a-42 Arch Viaduct, Garabit, undated                             |
| Box 21, Item 13 | 21a-43 Garabit Viaduct, undated                                   |
| Box 21, Item 14 | 53-10 Pont Notre Dame, Paris, undated                             |
| Box 21, Item 15 | 53-11 Pont du la Tournelle, Paris, undated                        |
| Box 21, Item 16 | 53-24 Railway Bridge over the Elbe in Dresden, 1900               |
| Box 21, Item 17 | 53-197 Sydney Harbour Bridge, New South Wales, Australia, 1932-09 |
| Box 21, Item 18 | 53-198 Sydney Harbour Bridge, New South Wales, Australia, 1932-09 |
| Box 21, Item 19 | 33 Rohrbach Bridge, St. Gothard's Pass, Switzerland, undated      |
| Box 21, Item 20 | 41 Old Rhine Bridge, Basel, Switzerland, undated                  |
| Box 21, Item 21 | 1550-135 Bridge over River Neva, St. Petersburg, Russia, undated  |
| Box 21, Item 22 | Switzerland, Bern, Kirchenfeld Bridge, undated                    |

|                 |   |
|-----------------|---|
| Box 21, Item 23 | Aa-1 Couflens, Paris, undated                         |
| Box 21, Item 24 | Aa-2 Couflens, Paris, undated                         |
| Box 21, Item 25 | Aa-12 Sully, Paris, undated                           |
| Box 21, Item 26 | Aa-12 Sully, Paris, undated                           |
| Box 21, Item 27 | Aa-13 Journelle, Paris, undated                       |
| Box 21, Item 28 | Aa-14 St. Louis, Paris, undated                       |
| Box 21, Item 29 | Aa-15 Arcole, Paris, undated                          |
| Box 21, Item 30 | Aa-23 Arto, Paris, undated                            |
| Box 21, Item 31 | Aa-24 Carrousal, Paris, undated                       |
| Box 21, Item 32 | Aa-25 Carrousal, Paris, undated                       |
| Box 21, Item 33 | Aa-29 Solferino, Paris, undated                       |
| Box 21, Item 34 | Aa-30 Solferino, Paris, undated                       |
| Box 21, Item 35 | Aa-39 Passy, Paris, undated                           |
| Box 21, Item 36 | Aa-40 Passy, Paris, undated                           |
| Box 21, Item 37 | Aa-41 Grenelle, Paris, undated                        |
| Box 21, Item 38 | Aa-42 Grenelle, Paris, undated                        |
| Box 21, Item 39 | Aa-43 Mirabeau, Paris, undated                        |
| Box 21, Item 40 | Aa-44 Mirabeau, Paris, undated                        |
| Box 21, Item 41 | Gz-23 Garabit Viaduct, undated                        |
| Box 21, Item 42 | Gc-9 Suspended arch bridge with coat of arms, undated |
| Box 21, Item 43 | Gc-10 Arch bridge, undated                            |
| Box 21, Item 44 | Gf-1 Arch bridge distant view, undated                |
| Box 21, Item 45 | Gf-2 Long Bridge or Viaduct, undated                  |
| Box 21, Item 46 | Gf-3 Long Bridge or Viaduct, undated                  |

|                 |   |
|-----------------|---|
| Box 21, Item 47 | Gf-15 Paris bridge, undated                                     |
| Box 21, Item 48 | Gf-16 Blackfriars, London, undated                              |
| Box 21, Item 49 | Gf-18 Garabit Viaduct, undated                                  |
| Box 21, Item 50 | Gf-19 Arc retrubee details, Garabit Viaduct, undated            |
| Box 21, Item 51 | Craigellachie Bridge, 1800                                      |
| Box 21, Item 52 | Buildwas Bridge, undated  |
| Box 21, Item 53 | Telford's proposed cast iron bridge, undated                    |
| Box 21, Item 54 | First iron bridge, Coalbrookdale, [England], 1779               |
| Box 21, Item 55 | Pontcysyllte [Aqueduct], side view of cast iron trough, undated |
| Box 21, Item 56 | Alexandria Bridge, Paris, undated                               |
| Box 21, Item 57 | Florisdorfer Bridge, Vienna over Danube, 1919                   |
| Box 21, Item 58 | Large metal viaduct, undated                                    |
| Box 21, Item 59 | Rennie's Southwark Bridge over the Thames, 1819                 |

#### Subseries 1.5.7: Hell Gate Bridge, Metal Arch, 1913-1917, undated

Scope and Contents: Consist of images, primarily construction, of the railroad bridge which connects the New York City boroughs of Manhattan and Queens.

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|-----------------|--|
| Box 21, Item 60 | 53-56 Hell Gate Bridge, erection sage 4, American Bridge Company, after 1913                           |
| Box 21, Item 61 | 53-57 Hell Gate Bridge, American Bridge Company, 1915-11-01  |
| Box 21, Item 62 | 53-58 Hell Gate Bridge, American Bridge Company, 1915-10-29  |
| Box 21, Item 63 | 53-59 Hell Gate Bridge, American Bridge Company, 1915-10-18  |
| Box 21, Item 64 | 53-60 Hell Gate Bridge, American Bridge Company, circa 1916  |
| Box 21, Item 65 | 53-61 Hell Gate Bridge, setting bottom chord, American Bridge Company, 1915-02-17                      |
| Box 21, Item 66 | 53-62 Hell Gate Bridge, three hinged arch, closed October 1, 1915, American Bridge Company, 1915-10-04 |

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|-----------------|---|
| Box 21, Item 67 | 53-63 Hell Gate Bridge, W. I. Counter Weight, 1915-10-18  |
| Box 22, Item 1  | 53-64 Hell Gate Bridge, eleven panels each side, American Bridge Company, 1915-09-29                      |
| Box 22, Item 2  | 53-65 Hell Gate Bridge, Long Island book stay, American Bridge Company, 1915-01-05                        |
| Box 22, Item 3  | 53-66 Hell Gate Bridge, setting bottom chord 6-8, American Bridge Company, 1915-04-15                     |
| Box 22, Item 4  | 53-67 Hell Gate Bridge, raising railroad stringers, American Bridge Company, 1916-03                      |
| Box 22, Item 5  | 53-233 Hell Gate Bridge, circa 1915-1917  |
| Box 22, Item 6  | 13A.7.23 Hell Gate Arch, New York, etching by Joseph Pennell, 1917  |
| Box 22, Item 7  | 13A.7.23 Hell Gate Arch, closure, 1917  |
| Box 22, Item 8  | 13A.7.23 Hell Gate Arch, 1917   |
| Box 22, Item 9  | C30 Hell Gate Bridge, American Bridge Company, Metal Beams, circa 1915-1917                               |
| Box 22, Item 10 | C31 Hell Gate Bridge, American Bridge Company, circa 1915-1917  |
| Box 22, Item 11 | C32 Hell Gate Bridge, American Bridge Company, supplies, circa 1915-1917                                  |
| Box 22, Item 12 | C33 Hell Gate Bridge, American Bridge Company, construction, circa 1915-1917                              |
| Box 22, Item 13 | C34 Hell Gate Bridge, American Bridge Company, construction, circa 1915-1917                              |
| Box 22, Item 14 | C35 Hell Gate Bridge, American Bridge Company, construction, circa 1915-1917                              |
| Box 22, Item 15 | C36 Hell Gate Bridge, American Bridge Company, construction, circa 1915-1917                              |
| Box 22, Item 16 | C37 Hell Gate Bridge, American Bridge Company, construction, circa 1915-1917                              |
| Box 22, Item 17 | C38 Hell Gate Bridge, American Bridge Company, construction, circa 1915-1917                              |
| Box 22, Item 18 | C39 Erection of Hell Gate Bridge, raising centerpiece of bottom chord, Wards Island side, circa 1915-1917 |
| Box 22, Item 19 | C40 Erection of Hell Gate Bridge, central view, from Long Island shore, circa 1915-1917                   |
| Box 22, Item 20 | C41 Erection of Hell Gate Bridge, 1915-11-01  |

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| Box 22, Item 21 | C42 Erection of Hell Gate Bridge, general view from Long Island, 1916-04-01                      |
| Box 22, Item 22 | C43 Hell Gate Bridge, American Bridge Company, construction, circa 1915-1917                     |
| Box 22, Item 23 | C44 Hell Gate Bridge, American Bridge Company, construction, circa 1915-1917                     |
| Box 22, Item 24 | C45 Erection of Hell Gate Bridge, connecting centerpiece of bottom chord, 1915-09-30             |
| Box 22, Item 25 | C46 3000 Ton hydraulic jack on top of Long Island erection tower of Hell Gate Bridge, 1915-11-08 |
| Box 22, Item 26 | T43 Sketch of method of erecting Hell Gate Arch, circa 1915-1917                                 |
| Box 22, Item 27 | T44 Hell Gate Bridge, plan sketches, circa 1915-1917   |
| Box 22, Item 28 | T45 Hell Gate Bridge, circa 1915-1917  |
| Box 22, Item 29 | T46 Hell Gate Bridge, circa 1915-1917  |
| Box 22, Item 30 | T47 Hell Gate Bridge, circa 1915-1917  |
| Box 22, Item 31 | T48 Hell Gate Bridge, circa 1915-1917  |
| Box 22, Item 32 | T49 Longest steel arch bridge in the world, circa 1915-1917                                      |
| Box 22, Item 33 | Hell Gate Arch, New York, circa 1915-1917  |
| Box 22, Item 34 | Hell Gate Bridge, span from One Hundred and Sixth Street, circa 1915-1917                        |
| Box 22, Item 35 | Long Island tower with temporary anchorage of Hell Gate Bridge, circa 1915-1917                  |
| Box 22, Item 36 | Erection of Hell Gate Bridge, connecting centerpiece of bottom chord, 1915-09-30                 |
| Box 22, Item 37 | Erection of Hell Gate Bridge, Ward's Island side, 1915-08  |
| Box 22, Item 38 | Erection of Hell Gate Bridge, general view from Long Island shore, 1915-10-04                    |
| Box 22, Item 39 | Hell Gate Bridge, Pennsylvania Railroad, circa 1915-1917   |
| Box 22, Item 40 | Erection scheme, Hell Gate Bridge, Pennsylvania Railroad, circa 1915-1917                        |
| Box 22, Item 41 | Hell Gate Arch, circa 1915-1917  |
| Box 22, Item 42 | Hell Gate Bridge under construction, circa 1915-1917   |

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| Box 22, Item 43 | Largest arch bridge in the world, crossing East River at Hell Gate [Bridge], circa 1915-1917 |
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### Subseries 1.5.8: Little Hell Gate Bridge, Truss, 1915, undated

|                 |                          |
|-----------------|--------------------------|
| Box 22, Item 44 | C27, Photograph, undated |
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| Box 22, Item 45 | C28, Erection of Little Hell Gate Bridge, view from Sunken Meadow, 1915-09-17 |
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### Subseries 1.5.9: Nam Ti Metal, Arch, [Faux Namti Bridge], undated

Scope and Contents: Contain photographic images and a diagram of the bridge, also known as Renziqiao, and runs along the 854-kilometer Yunnan-Vietnam Railway from the Chinese border city of Hekou to the provincial capital Kunming.

|                 |                                       |
|-----------------|---------------------------------------|
| Box 22, Item 46 | T54, View of the Nam Ti Arch, undated |
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|-----------------|------------------------------------|
| Box 22, Item 47 | T55, Nam Ti Arch, diagram, undated |
|-----------------|------------------------------------|

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| Box 22, Item 48 | T56, Method of erecting the Nam Ti Arch, undated |
|-----------------|--|

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| Box 22, Item 49 | Railway bridge in China, built by French engineers, bascules erected and lowered, 335 feet above water, 220 feet long, undated |
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### Subseries 1.5.10: Niagara Arch, circa 1896-1897

|                 |  |
|-----------------|--|
| Box 22, Item 50 | 21-29, Niagara Arch with locomotive, circa 1896-1897 |
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|-----------------|--------------------------------------|
| Box 22, Item 51 | 21-30, Niagara Arch, circa 1896-1897 |
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| Box 22, Item 52 | 21-31, Niagara Arch, 1896-10-27 |
|-----------------|---------------------------------|

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| Box 22, Item 53 | 21-32, Niagara Arch, 1896-11-30 |
|-----------------|---------------------------------|

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| Box 22, Item 54 | 21-33, Niagara Arch, 1897-01-13 |
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| Box 22, Item 55 | 21-34, Niagara Arch, 1897-01-07 |
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| Box 22, Item 56 | 21-35, Niagara Arch, 1896-11-19 |
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| Box 22, Item 57 | 21-36, Niagara Arch, 1897-01-11 |
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| Box 22, Item 58 | 21-37, Niagara Arch, 1897-01-29 |
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| Box 22, Item 59 | 21-38, Niagara Arch, 1897-02-13 |
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| Box 22, Item 60 | 21-39, Niagara Arch, 1897-02-28   |
| Box 22, Item 61 | 21-40, Niagara Arch, 1897-03-04   |
| Box 23, Item 1  | 21-41, Taken from photograph borrowed from Mr. Kuntz, Niagara Arch, circa 1896-1897 |
| Box 23, Item 2  | 21-42, Niagara Arch, 1896-12-15   |
| Box 23, Item 3  | 21-43, Niagara Arch, 1896-11-30   |
| Box 23, Item 4  | 21-46, Taken from photograph borrowed from Mr. Kuntz, Niagara Arch, circa 1896-1897 |
| Box 23, Item 5  | 27-9, Niagara Arch, 1897-06-16  |
| Box 23, Item 6  | 27-11, Niagara Arch, 1897-06-17   |
| Box 23, Item 7  | 27-12, Niagara Arch, 1897-05-10   |
| Box 23, Item 8  | 27-16, Niagara Arch, circa 1896-1897  |

Subseries 1.5.11: Queensboro Bridge, Cantilever [Ed Koch Queensboro Bridge], 1903-1915, undated

Scope and Contents: Include photographic images, drawings, and diagrams of bridge, originally called Blackwell's Island Bridge, later renamed Ed Koch Queensboro Bridge, which connects Long Island City neighborhood in the borough of Queens with the East Midtown and Upper East side neighborhoods in Manhattan. Sometimes it is known as the 59th Street Bridge.

|                 |   |
|-----------------|---|
| Box 23, Item 9  | 22-33, Queensboro Bridge, from 1912 report, undated   |
| Box 23, Item 10 | 38-1 Blackwell's Island, cantilever, looking through, undated                                 |
| Box 23, Item 11 | 38-2, Blackwell's Island Bridge looking through, undated                                      |
| Box 23, Item 12 | 38-3, Blackwell's Island Bridge looking through, undated                                      |
| Box 23, Item 13 | 38-4, Blackwell's Island, cantilever, view east from Stack of New York Steam Company, undated |
| Box 23, Item 14 | 38-5, Blackwell's Island Bridge, erection of island span, undated                             |
| Box 23, Item 15 | 38-6, Blackwell's Island Bridge, erection of island span, undated                             |
| Box 23, Item 16 | 38-7, Blackwell's Island Bridge, erection of island span, undated                             |



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| Box 23, Item 17 | 38-8, Blackwell's Island, cantilever, showing completed west cantilever, undated                     |
| Box 23, Item 18 | 38-9, Blackwell's Island, cantilever, steel falsework of island span, undated                        |
| Box 23, Item 19 | 38-10, Blackwell's Island Cantilever, view of completed island span, undated                         |
| Box 23, Item 20 | 38-11, Blackwell's Island, cantilever, north casting, Pier 2, undated                                |
| Box 23, Item 21 | 38-12, Blackwell's Island, cantilever, bottom chord on car, undated                                  |
| Box 23, Item 22 | 38-13, Blackwell's Island Bridge, King's views of New York City, 1903                                |
| Box 23, Item 23 | 38-14, Blackwell's Island, cantilever, shoe of a tower, undated                                      |
| Box 23, Item 24 | 38-15, Blackwell's Island Cantilever, bottom chord member, undated                                   |
| Box 23, Item 25 | 38-16, Blackwell's Island Bridge, erection, undated  |
| Box 23, Item 26 | 38-17, Blackwell's Island, cantilever, erection, undated   |
| Box 23, Item 27 | 38-18, Blackwell's Island, cantilever, island span and cantilevers, undated                          |
| Box 23, Item 28 | 38-19, Blackwell's Island, cantilever, island span and cantilever arms, undated                      |
| Box 23, Item 29 | 38-20, Blackwell's Island, cantilever, erection of island span, undated                              |
| Box 23, Item 30 | 38-21, Blackwell's Island, cantilever, perspective drawing, undated                                  |
| Box 23, Item 31 | 38-22, Blackwell's Island, cantilever, cross sections, from Pennsylvania Steel Company book, undated |
| Box 23, Item 32 | 53-53, Queensboro Bridge, New York traffic, 1915-04  |
| Box 23, Item 33 | 385, Bridge construction, undated  |
| Box 23, Item 34 | 940, Queensboro Bridge, undated  |
| Box 23, Item 35 | T37, Blackwell's Island Bridge, New York, undated  |
| Box 23, Item 36 | 13A.7.25, Queensboro Bridge, diagram, 1909   |
| Box 23, Item 37 | 13A.7.25, Queensboro Bridge, closure of, 1909  |

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### Subseries 1.5.12: Washington Steel Arch Bridge, 1888-1889, undated

Scope and Contents: Images of the bridge over the Harlem River in New York City between the boroughs of Manhattan and the Bronx.

|                 |  |
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| Box 23, Item 38 | Gf-11, Washington Bridge, general view from the south, undated         |
| Box 23, Item 39 | Gf-12, Washington Bridge, undated                                      |
| Box 23, Item 40 | Gf-13, Bearing of steel arch upon Pier III, Washington Bridge, undated |
| Box 23, Item 41 | Gf-14, Bridge connection, undated                                      |
| Box 23, Item 42 | Gz-24, Washington Bridge, undated                                      |
| Box 23, Item 43 | Gz-25, River and land spans, Washington Bridge, 1888-03-23             |
| Box 23, Item 44 | 13-18, Cast Iron Arch Bridge, undated                                  |
| Box 23, Item 45 | 21-5, Washington Bridge, New York, undated                             |
| Box 23, Item 46 | 21-12, Washington Bridge and Harlem River, undated                     |
| Box 23, Item 47 | 12A.7.23, Washington Arch, Harlem River, 1889                          |
| Box 23, Item 48 | 339, River span, setting floor beams, 1888-05-07                       |
| Box 23, Item 49 | Washington Bridge, undated   |
| Box 23, Item 50 | Washington Bridge, Harlem River, New York, undated                     |
| Box 23, Item 51 | High Bridge (Aqueduct) over Harlem River, undated                      |
| Box 23, Item 52 | Washington Bridge over Harlem River, undated                           |

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### Subseries 1.6: Bridges, Metal Truss, 1763-1934, undated

Scope and Contents: Images document subjects created by the division and are arranged as follows: subseries 1.6.1, American metal trusses; subseries 1.6.2, bridge accidents and failures; subseries 1.6.3, bridge construction, general; subseries 1.6.4, bridge shop work; subseries 1.6.5, bridge testing; subseries 1.6.6, caissons; subseries 1.6.7, foreign metal trusses; subseries 1.6.8, general miscellaneous types; subseries 1.6.9, municipal bridge, construction; and subseries 1.6.10, Sciotoville [Sciotoville Bridge] Continuous Truss.

#### Subseries 1.6.1: American Metal Truss, 1866-1916, undated

|                 |  |
|-----------------|--|
| Box 23, Item 53 | 15-10 Bridge illustration, undated                                       |
| Box 23, Item 54 | 15-20 Arkansas River and Bridge at Little Rock, cows underneath, undated |
| Box 23, Item 55 | 17-3 Salmon Falls Bridge, New Hampshire, Multiple System Bridge, undated |

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|-----------------|---|
| Box 23, Item 56 | 17-4 Waterford Massachusetts, over Blackstone River, undated  |
| Box 23, Item 57 | 17-8 South Worcester, Massachusetts, Providence and Worcester Railroad, undated                         |
| Box 23, Item 58 | 17-9 South Worcester, Massachusetts, Providence and Worcester Railroad, undated                         |
| Box 23, Item 59 | 17-11 Green River Bridge, undated   |
| Box 23, Item 60 | 17-15 Bridge at Manchester, New Hampshire, on Boston and Maine Railroad, over Merrimac, undated         |
| Box 23, Item 61 | 17-19 Pennsylvania Railroad Bridge over Delaware at Felton, undated                                     |
| Box 23, Item 62 | 17-20 Girard Avenue Bridge, Philadelphia, undated   |
| Box 23, Item 63 | 17-25 Phoenix Pin Bridge, undated   |
| Box 23, Item 64 | 17-30 Big Warrior River Bridge, Cordova, Alabama, Phoenix Bridge Company, 1887                          |
| Box 24, Item 1  | 17-36 Bellefontaine Bridge across Missouri River, undated   |
| Box 24, Item 2  | 17-37 Olamon Bridge, Maine, side elevation, 1869  |
| Box 24, Item 3  | 17-39 High Street Bridge over Oliver Street, 1868   |
| Box 24, Item 4  | 17-41 Lever Bridge over Assabet River, West Concord, Massachusetts, sideview, 1869                      |
| Box 24, Item 5  | 17-42 Lever Bridge over Assabet River West Concord, Massachusetts, half side view, undated              |
| Box 24, Item 6  | 17-43 Lever Bridge over Assabet River West Concord, Massachusetts, sideview, 1869                       |
| Box 24, Item 7  | 17-45 Parker Truss Fitchburg, Massachusetts, undated  |
| Box 24, Item 8  | 17-46 Parker Truss, Pawtucket Falls, Lowell, Massachusetts, two spans sideview during erection, undated |
| Box 24, Item 9  | 17-47 Parker Truss, Pawtucket Falls, Lowell, two spans sideview during erection, undated                |
| Box 24, Item 10 | 17-48 Parker Truss, Pawtucket Falls, Lowell, two spans sideview, undated                                |
| Box 24, Item 11 | 17-49 Truss, Pawtucket, Rhode Island, 200 foot span, 1871-1872  |

|                 |   |
|-----------------|---|
| Box 24, Item 12 | 17-50 Magaguadavic Bridge, New Brunswick, 1869  |
| Box 24, Item 13 | 18-20 Railway Bridge, Bordeaux, undated   |
| Box 24, Item 14 | 34-8 Rollers, 180 Foot Pin Span, New York Central System Railroad, twenty six years after erection, undated |
| Box 24, Item 15 | 34-13 Petewa and Seneca River Bridge accidents, undated   |
| Box 24, Item 16 | 53-126 Lake Champlain Bridge Showing Falsework Supporting Trusses, undated                                  |
| Box 24, Item 17 | Gb-2 Iron Railway Bridge, Chicago and Northwestern Railway Company, undated                                 |
| Box 24, Item 18 | Gb-3 Wrought Iron Railroad Bridge over Connecticut River, undated   |
| Box 24, Item 19 | Gb-4 Wrought Iron Riveted Through Truss Bridge, undated   |
| Box 24, Item 20 | Gb-5 Denver Colorado Broadway Bridge, inside girders, Youngstown Bridge Company, undated                    |
| Box 24, Item 21 | Gb-6 Bridge construction, undated   |
| Box 24, Item 22 | Gb-8 Single Track Railway Bridge, Rockford Island, undated  |
| Box 24, Item 23 | Gb-14 Plate lattice girder bridge over Little Missouri River, Near Tedora, North Dakota, undated            |
| Box 24, Item 24 | Gb-15 Bridge over the Kennet at Reading, undated  |
| Box 24, Item 25 | Gc-6 Benjamin F. La Rue and L. D. Grosvenor, undated  |
| Box 24, Item 26 | Gc-11 Cambridgeboro, Pennsylvania Railway, undated  |
| Box 24, Item 27 | Gc-12 Parabolic Truss Highway Bridge at Binghamton, New York, undated                                       |
| Box 24, Item 28 | Gc-13 Cleveland Akron and Columbus River, Gambier Bridge, undated   |
| Box 24, Item 29 | Gc-14 Spring Common Bridge, Youngstown Ohio, undated  |
| Box 24, Item 30 | Gc-15 Development of the truss idea, modern framed structure, undated                                       |
| Box 24, Item 31 | Gc-17 Double Track Iron Railroad Bridge, 1872   |
| Box 24, Item 32 | Gc-19 Cleveland Terminal and Valley Railroad, undated   |
| Box 24, Item 33 | Gc-20 Details of Bridge number fourteen, Midland Division, Baltimore and Ohio Railroad, undated             |

|                 |  |
|-----------------|--|
| Box 24, Item 34 | Gc-21 Kenova Bridge, Norfolk and Western Railroad, 1891  |
| Box 24, Item 35 | Gc-22 Bridge photograph, undated   |
| Box 24, Item 36 | Gc-23 Bridge photograph, undated   |
| Box 24, Item 37 | Gc-24 New Sixth Street Bridge, Pittsburgh, undated   |
| Box 24, Item 38 | Gc-25 Cairo Bridge, general elevation, undated   |
| Box 24, Item 39 | Gc-26 Cairo Bridge, Through Span End Elevation, undated  |
| Box 24, Item 40 | Gc-30 Bellefontaine Bridge Frontpiece Morison, undated   |
| Box 24, Item 41 | Gc-31 Bellefontaine Bridge, Panel Points 0, 1, and 2, undated  |
| Box 24, Item 42 | Gc-32 Bellefontaine Bridge, Panel Points 6, 7, 8, and 7, undated   |
| Box 24, Item 43 | Gc-33 Linville Trussed Bridge Designed by Keystone Bridge Company, Philadelphia, undated                   |
| Box 24, Item 44 | Gd-1 Platt Street Bridge, undated  |
| Box 24, Item 45 | Gl-28 Erection of Columbia River Bridge, undated   |
| Box 24, Item 46 | Gk-2 Expansion joint used in floor of Memphis Bridge, undated  |
| Box 24, Item 47 | Gz-5 Permanent channel span erected on temporary Howe trusses, 1892-03-25                                  |
| Box 24, Item 48 | Gz-17 Knoxville Arched Cantilever, Knoxville, Tennessee, span number five during erection, undated         |
| Box 24, Item 49 | C-29 New York Connecting Railroad, Bronxkill Bridge, 1916-12-08  |
| Box 24, Item 50 | C-213 Map of potential factory shops along Ohio River, undated   |
| Box 24, Item 51 | C-214 Pennsylvania Steel Company, undated  |
| Box 24, Item 52 | C-215 Main Shop, Pennsylvania Steel Company, Harrisburg, Pennsylvania, undated                             |
| Box 24, Item 53 | C-221 Arrangement of machinery, Main Bridge Shop, American Bridge Company, Ambridge, Pennsylvania, undated |
| Box 24, Item 54 | C-224 Pneumatic Riveter and Toggle Joint Riveter, Chicago Pneumatic Tool Company, undated                  |

|                 |   |
|-----------------|---|
| Box 24, Item 55 | C-225 Hydraulic Riveter, undated  |
| Box 24, Item 56 | C-229 Partial view of forge shop, American Bridge Company, Ambridge, Pennsylvania, undated                  |
| Box 24, Item 57 | C-230 Manufacturing diagrams, undated   |
| Box 24, Item 58 | C-231 Cuts for Various Shapes, undated  |
| Box 24, Item 59 | C-232 Manufacturing Holes, undated  |
| Box 24, Item 60 | C-233 Manufacturing diagrams, undated   |
| Box 24, Item 61 | C-234 Special Heads, undated  |
| Box 24, Item 62 | C-238 Ordinary Traveler, American Bridge Company, Ambridge, Pennsylvania, undated                           |
| Box 24, Item 63 | C-241 Falsework Supporting Bridge During Erection, American Bridge Company, Ambridge, Pennsylvania, undated |
| Box 25, Item 1  | C-290 View Through Bridge, undated  |
| Box 25, Item 2  | C-779 Bridge photograph, undated  |
| Box 25, Item 3  | 12A.7.24 Ohio River Bridge at Cincinnati, Construction Designed by W.H. Burr, 1888                          |
| Box 25, Item 4  | 13A.7.21 McKeesport and Bessemer Railroad Girder Deck and Through Truss Spans, undated                      |
| Box 25, Item 5  | 32 Maienbach Bridge, St. Gotthard Pass, Switzerland, undated  |
| Box 25, Item 6  | 63 Bridge over the Schuylkill River, Hearsh, Wissahickon, Philadelphia, undated                             |
| Box 25, Item 7  | 67 New Girard Avenue Bridge, Philadelphia, undated  |
| Box 25, Item 8  | 73 Great Falls Bridge, Montana, undated   |
| Box 25, Item 9  | Continuous Truss for Cass Street Mississippi River Bridge, undated  |
| Box 25, Item 10 | Study at State Street Mississippi River Bridge, undated   |
| Box 25, Item 11 | Bridge over Cathance River, Bowdoinham, Maine, Built 1866, undated  |
| Box 25, Item 12 | Bridge over Cathance River, Bowdoinham, Maine, Built 1866, undated  |

|                 |   |
|-----------------|---|
| Box 25, Item 13 | Whipple "Bow String" Bridge, Maiden Bridge, New York, undated               |
| Box 25, Item 14 | Squire Whipple's Bridges Built over Erie Canal, undated                     |
| Box 25, Item 15 | Bridge near Allentown, Pennsylvania, Built 1876, undated                    |
| Box 25, Item 16 | Saltash Bridge, undated   |
| Box 25, Item 17 | 1875 Advertisements of Bridges, 1875  |
| Box 25, Item 18 | Copper River Bridge, Alaska, undated  |
| Box 25, Item 19 | State University of Iowa Alumni Bureau Lectures, bridge photograph, undated |
| Box 25, Item 20 | Railway Bridge, Bellows Falls, 6 fold lattice girder, unsymmetric, undated  |
| Box 25, Item 21 | 284 New York Cincinnati Railroad, undated                                   |
| Box 25, Item 22 | 285 New York Central Railroad, undated                                      |
| Box 25, Item 23 | 286 New York Central Bridge, undated  |
| Box 25, Item 24 | 379 Beam Bridge, undated  |
| Box 25, Item 25 | Photograph of bridge construction crew, undated                             |
| Box 25, Item 26 | Forest Arch Bridge, undated   |
| Box 25, Item 27 | Curved Arch Bridge, undated   |
| Box 25, Item 28 | View Through Bridge, undated  |
| Box 25, Item 29 | Bridge of the San Luis Reservoir, Oceanside, California, undated            |
| Box 25, Item 30 | Curved Bridge over water, undated   |

#### Subseries 1.6.2: Bridge Accidents and Failures, 1888-1910, undated

Scope and Contents: Images primarily document bridges that have collapsed as the result an earthquake and other factors undocumented in the descriptions.

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|                 |   |
|-----------------|---|
| Box 25, Item 31 | 18a-40 Nagara Gawa Railway Bridge, after an earthquake, undated |
| Box 25, Item 32 | 34-22 Bussey Bridge, Buffalo, and Pittsburgh Railroad, 1908     |
| Box 25, Item 33 | 69 Collapsed bridge in water, undated                           |

|                 |  |
|-----------------|--|
| Box 25, Item 34 | Collapsed bridge, undated                                  |
| Box 25, Item 35 | Collapsed bridge and locomotive fallen into water, undated |
| Box 25, Item 36 | Collapsed bridge in water, undated                         |
| Box 25, Item 37 | Carriage about to fall from bridge over river, undated     |
| Box 25, Item 38 | Collapsed bridge over frozen water, undated                |
| Box 25, Item 39 | Locomotive on collapsed wooden bridge, undated             |
| Box 25, Item 40 | Locomotive on collapsed wooden bridge, undated             |

### Subseries 1.6.3: Bridge Construction, General, 1888-1910, undated

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|                 |  |
|-----------------|--|
| Box 25, Item 41 | 27-4 Traveler, Ohio River Bridge, Cincinnati, Phoenix Bridge Company, undated      |
| Box 25, Item 42 | 27-6 Millbury Bridge during erection, 1889   |
| Box 25, Item 43 | 27-13 Sunbury Bridge, California and California Railway, 1896-03-05                |
| Box 25, Item 44 | 27-22 Photograph belonging to McKibben, bridge not known, undated                  |
| Box 25, Item 45 | 27-26 Ohio bridge at Cincinnati; taken from photograph borrowed edge moor, undated |
| Box 25, Item 46 | 27-27 Ohio Connecting Bridge near Pittsburg, undated                               |
| Box 25, Item 47 | 27-28 Ohio Bridge at Cincinnati, undated   |
| Box 25, Item 48 | 27-39 Dominion Bridge Company, Canada Atlantic Railway at Coteau, undated          |
| Box 25, Item 49 | 46-44 Berkeley St. Bridge, corrosion of old floor beams and shelf, 1910            |
| Box 25, Item 50 | 53-222 Little Bay Bridge, Dover, New Hampshire, undated                            |
| Box 25, Item 51 | 274 Bridge construction, undated   |
| Box 25, Item 52 | 288 Bridge construction, 1888-10   |
| Box 25, Item 53 | 295 View through bridge during construction, undated                               |
| Box 25, Item 54 | 369 Central Bridge, Harlem River, New York, 1893-07-11                             |



|                 |  |
|-----------------|--|
| Box 25, Item 55 | 382 Bridge falsework, undated                        |
| Box 25, Item 56 | 383 Bridge falsework, 1888-12                        |
| Box 25, Item 57 | 386 Bridge falsework, undated                        |
| Box 25, Item 58 | 387 Bridge company photograph, undated               |
| Box 25, Item 59 | C56 View through bridge during construction, undated |
| Box 25, Item 60 | C57 Raising bridge beams, undated                    |
| Box 25, Item 61 | C-720 Construction scene, undated                    |

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#### Subseries 1.6.4: Bridge Shop Work, 1900, undated

|                |   |
|----------------|---|
| Box 26, Item 1 | 47-20 Two adjustable punching machines with hand spacing table, undated |
| Box 26, Item 2 | 47-24 Special punch and coping machine for structural work, undated     |
| Box 26, Item 3 | 47-45 Templet Shop, Cassiers Magazine, page 200, 1900-01                |
| Box 26, Item 4 | 47-46 Plate Shear, Cassier's Magazine, page 204, 1900-01                |
| Box 26, Item 5 | 47-47 Automatic Multiple Punch, Cassier's Magazine, page 208, 1900-01   |
| Box 26, Item 6 | 47-48 Riveting a Lattice Girder, Cassier's Magazine, page 202, 1900-01  |
| Box 26, Item 7 | 47-51 Templet Shop, Boston Bridge Works, undated                        |

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#### Subseries 1.6.5: Bridge Testing, undated

|                 |  |
|-----------------|--|
| Box 26, Item 8  | 53-223 Proving ring used on Cape Cod Canal Bridges, undated      |
| Box 26, Item 9  | 53-224 Method of Using Proving Rings on Cape Cod Bridge, undated |
| Box 26, Item 10 | C-585 Tools and workbench, undated                               |
| Box 26, Item 11 | C-834 Stress distribution in a beam loaded at midspan, undated   |

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#### Subseries 1.6.6: Caissons, 1763-1934, undated

|                 |                                |
|-----------------|--------------------------------|
| Box 26, Item 12 | A136.2 Moran Air Lock, undated |
|-----------------|--------------------------------|

|                 |  |
|-----------------|--|
| Box 26, Item 13 | 9.6.2 French Caisson in Diderot's Encyclopedia, 1763, undated  |
| Box 26, Item 14 | 9.6.2 French Cofferdam and Pile Driver, Diderot's Encyclopedia, 1763, undated  |
| Box 26, Item 15 | 9.6.2 Cofferdam for Pont de Monts, Perronet, 1778, undated   |
| Box 26, Item 16 | 9.6.4 A Caisson from [Agostino] "Dell Artificiose Machine," engraving, Paris, 1588, undated  |
| Box 26, Item 17 | 13A.6.4 Caisson, Delaware River Bridge Philadelphia-Camden, 1926   |
| Box 26, Item 18 | 13A.6.4 Domed Caisson, Bay Bridge San Francisco, 1934  |
| Box 26, Item 19 | 13A.6.4 Domed Caisson, Bay Bridge San Francisco, 1934  |
| Box 26, Item 20 | 13A.6.1 Caisson Air Locks, Modern American, undated  |
| Box 26, Item 21 | C447 Construction crew in Caisson, undated   |
| Box 26, Item 22 | C448 Caissons across large body of water, undated  |
| Box 26, Item 23 | C452 Caisson for Pacific and Lake Erie Railroad Bridge, Beaver, Pennsylvania, undated  |
| Box 26, Item 24 | C453 Reinforced concrete open caisson for Pier 3 of the Pittsburgh and Lake Erie Railroad Bridge over the Ohio River at Beaver, Pennsylvania, 1908-09-28 |
| Box 26, Item 25 | C454 Sinking and concreting caissons, with steel forms, Municipal Building, undated  |
| Box 26, Item 26 | C455 Oval shaft arranged for men to pass bucket, Moran Air-lock, undated   |
| Box 26, Item 27 | C456 Section of caisson with air-lock, Fourth Bridge, undated  |
| Box 26, Item 28 | C457 Man beginning to excavate caisson, undated  |
| Box 26, Item 29 | C635 Blueprint for a caisson, undated  |
| Box 26, Item 30 | C636 Blueprint for a caisson, undated  |
| Box 26, Item 31 | C637 Section of Camden caisson, undated  |
| Box 26, Item 32 | C638 Detail of cutting edge, undated   |
| Box 26, Item 33 | 19-8 Beginning the excavation, beginning to air under caisson, undated   |
| Box 26, Item 34 | 53-133 Lake Champlain Bridge, showing cofferdam for one of the piers, undated  |

|                 |   |
|-----------------|---|
| Box 26, Item 35 | 59-411/475 Cofferdam Colorado River Bridge, undated   |
| Box 26, Item 36 | Plattsmouth Bridge over the Missouri River, undated   |
| Box 26, Item 37 | Excavating under a caisson, undated   |
| Box 26, Item 38 | Su-9 Pneumatic cylinders, South Street Bridge, Philadelphia, Pennsylvania, undated  |
| Box 26, Item 39 | Su-10 Plant for sinking pneumatic cylinders used at South Street Bridge, Philadelphia, Pennsylvania, undated                    |
| Box 26, Item 40 | Foundation caisson with the men who do things, undated  |
| Box 26, Item 41 | 377 Central Bridge, Harlem River, New York, undated   |
| Box 26, Item 42 | Plattsmouth Bridge over the Missouri River, negative version, undated   |
| Box 26, Item 43 | Interior of working chamber of rectangular steel caisson supported on jacks prior to the application of compressed air, undated |

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#### Subseries 1.6.7: Foreign Metal Trusses, 1859-1893, undated

|                 |  |
|-----------------|--|
| Box 26, Item 44 | 10-11 Blackfriars Bridge, undated                            |
| Box 26, Item 45 | 16-21 Challupi Viaduct, Berrian Oroya Railway, undated       |
| Box 26, Item 46 | 16-26 Mexico, Encarnacion Bridge, undated                    |
| Box 26, Item 47 | 17-12 Men on bridge, undated                                 |
| Box 26, Item 48 | 17-23 Train passing through Victoria Jubilee Bridge, undated |
| Box 26, Item 49 | 17-24 Victoria Jubilee Bridge, Montreal, [Canada], undated   |
| Box 26, Item 50 | 18-5 Hambourg Park in (Nasshianble?), undated                |
| Box 26, Item 51 | 18-6 Railway Bridge, Mainz, undated                          |
| Box 26, Item 52 | 18-8 Weichselbrücke, Vistula Bridge, near Fordon, undated    |
| Box 26, Item 53 | 18-9 Bridge Over Weichsel (Vistula) at Dirschau, undated     |
| Box 26, Item 54 | Cologne Central Station in Pont de Fer, undated              |
| Box 26, Item 55 | 18-16 Railway Bridge, Germany, undated                       |

|                 |   |
|-----------------|---|
| Box 26, Item 56 | 18-19 Railway Bridge, Germany, undated  |
| Box 26, Item 57 | 18-21 Viaduct in Lioran, France, undated  |
| Box 26, Item 58 | 18-23 France, Viaduct in Lorient, undated   |
| Box 26, Item 59 | 18-27 Bridges over Yssel, Kampen, undated   |
| Box 26, Item 60 | 18-29 The Meuse, Rotterdam, undated   |
| Box 26, Item 61 | 18-32 From Second Bridge, Vassen, undated   |
| Box 26, Item 62 | 18-39 Landek Park, Lynol, undated   |
| Box 26, Item 63 | 18-44 Rome, Ponte Roto, New Bridge, undated   |
| Box 26, Item 64 | 18-45 Domed Structure on Bridge, undated  |
| Box 26, Item 65 | 18-49 Bridge on the Frisaunia, undated  |
| Box 27, Item 1  | 18-50 Bridge at Hamburg, undated  |
| Box 27, Item 2  | 18a-1 Royal Bridge, Saltash, undated  |
| Box 27, Item 3  | 18a-2 Royal Albert Bridge, Saltash, undated   |
| Box 27, Item 4  | 18a-45 Railroad Bridge over the Recknitz, undated   |
| Box 27, Item 5  | 25-12 Aar Bridge at Brugge, undated   |
| Box 27, Item 6  | 35-1 Pont de la Reine, France, undated  |
| Box 27, Item 7  | 35-2 Bordeaux Park in Chemin, undated   |
| Box 27, Item 8  | 45a-58 Bridge over Kaiser Wilhelm Canal at Kief looking West. Central Span 525 feet., 1928                |
| Box 27, Item 9  | 53-83 The Emergency Bridges with Buttermilk Storm, Marienburg, Germany, Steel Truss Bridges, undated      |
| Box 27, Item 10 | Gb-1 Germany, KGL Bayer State Ministry of the Interior, State Construction Administration Bridge, undated |
| Box 27, Item 11 | Gb-7 Two Bridges, undated   |
| Box 27, Item 12 | Gb-9 Bridge Lower Hobson's Arch Plate Floor, 1893   |

|                 |   |
|-----------------|---|
| Box 27, Item 13 | Gb-10 A Modern English Highway Bridge, undated  |
| Box 27, Item 14 | Gb-11 Beamed Truss Bridge over Water, undated   |
| Box 27, Item 15 | Gb-12 Tall Arch and Truss Bridge, undated   |
| Box 27, Item 16 | Gb-13 Truss Bridge with Stone Piers/Piles, undated  |
| Box 27, Item 17 | Gc-1 Truss Bridge, undated  |
| Box 27, Item 18 | Gc-2 Locomotive Traveling Through Truss Bridge, undated   |
| Box 27, Item 19 | Gc-3 Germany, KGL Bayer State Ministry of the Interior, State Construction Administration Bridge, undated |
| Box 27, Item 20 | Gc-4 Arched Bridge, undated   |
| Box 27, Item 21 | Gc-5 Truss Bridge, undated  |
| Box 27, Item 22 | Gc-6 Steel Railway and Highway Bridge over the Weichsel River near Fordon, Germany, undated               |
| Box 27, Item 23 | Gc-7 Arched Truss Bridge, undated   |
| Box 27, Item 24 | Gc-8 Wavelike Bridge with Castle Ends, undated  |
| Box 27, Item 25 | Gd-3 Arched Truss Bridge, undated   |
| Box 27, Item 26 | G2-4 Bruckenbau, Uber den Inn Bei Konigswart, Linie Rosenheim-Murldorf, undated                           |
| Box 27, Item 27 | G2-18 Arched Truss Bridge, undated  |
| Box 27, Item 28 | Railroad Bridge, Cologne, Germany, 1859   |
| Box 27, Item 29 | Brunel Bridges, undated   |
| Box 27, Item 30 | Saltash Bridge-England (Brunel) ("Royal Albert Bridge"), undated  |
| Box 27, Item 31 | 37. Bridge at Entrance to Maderamer Thal, Switzerland, undated  |
| Box 27, Item 32 | 38. Railroad Bridge over the Reuss, near Amsteg, Switzerland, undated                                     |
| Box 27, Item 33 | 50. Bridge over the Maas Rotterdam, Holland, undated  |
| Box 27, Item 34 | No. 18652, Philippines Manila from Bridge Manila and Dagupan Railroad, undated                            |

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|-----------------|--|
| Box 27, Item 35 | 1415. Montreal Victoria Bridge, undated                        |
| Box 27, Item 36 | Russia Bridge across River Ohi Siberian Railroad, undated      |
| Box 27, Item 37 | 48. Russia Bridge over River Kiya Siberian Railroad, undated   |
| Box 27, Item 38 | 49. Russia Bridge over River Tyajim Siberian Railroad, undated |
| Box 27, Item 39 | 51. Russia Bridge over River Kossul Siberian Railroad, undated |
| Box 27, Item 40 | AA. Photograph of Bridge, undated                              |
| Box 27, Item 41 | Elbe Bridge in Hamburg, undated                                |
| Box 27, Item 42 | Leck Bridge Kuilenburg, Holland, undated                       |

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#### Subseries 1.6.8: General, Miscellaneous Type, 1809-1932, undated

|                 |  |
|-----------------|--|
| Box 27, Item 43 | 48. A Bridge of Boats, India, undated  |
| Box 27, Item 44 | Howrah Bridge, Calcutta, undated   |
| Box 27, Item 45 | T39 Some of the World's Large Bridges Drawn to the Same Scale, undated             |
| Box 27, Item 46 | 0.7.21 Long Span Bridges, 1809-1932  |
| Box 27, Item 47 | Steamer Passing through Ponton Bridge at Coblenz, January 7, 1919                  |
| Box 27, Item 48 | 13082 Boats Bridge Cologne, undated  |
| Box 27, Item 49 | 12089 Boats Bridge Cologne, undated  |
| Box 27, Item 50 | 24-32 Connectings Phoenix Columnne,, undated                                       |
| Box 27, Item 51 | 24-31 Connections Phoenix Columns, undated   |
| Box 27, Item 52 | Old Bridge, Not Used, 1907   |
| Box 27, Item 53 | 46-12 Huntington Avenue Bridge, Corrosion of Web of Old Girder, 1909               |
| Box 27, Item 54 | 46-14 Huntington Avenue Bridge, Timber Trestle Support for Old Track Girders, 1909 |
| Box 27, Item 55 | 46-15 Huntington Avenue Bridge, Showing Corrosion of web of old Girders, 1909      |
| Box 27, Item 56 | 46-16 Huntington Avenue Bridge, Reinforcement for Concrete on Girders, 1909        |

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| Box 27, Item 57 | 46-17 Huntington Avenue Bridge, Forms for Concrete on Girders, 1909                  |
| Box 27, Item 58 | 46-18 Huntington Avenue Bridge, Forms and Reinforcement for Concrete, 1909           |
| Box 27, Item 59 | 46-19 Huntington Avenue Bridge, Reinforced Concrete Slabs over Water Pipe, 1909      |
| Box 27, Item 60 | 23-49 Pontoon Bridge at Hardanelle, Replaced by Steel Bridge in 1928-1929, 1928-1929 |
| Box 27, Item 61 | 34-3 Iron Bridge Pin Failure, undated  |

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#### Subseries 1.6.9: Municipal Bridge Construction, undated

|                |   |
|----------------|---|
| Box 28, Item 1 | T69 Erection of Municipal Bridge over the Mississippi River at St. Louis, Missouri, undated |
| Box 28, Item 2 | T70 Falsework for the River Spans of the Municipal Bridge, St. Louis, Missouri, undated     |

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#### Subseries 1.6.10: Sciotoville [Sciotoville Bridge] Continuous Truss, undated

|                 |                                     |
|-----------------|-------------------------------------|
| Box 28, Item 3  | C59 Photograph of a bridge, undated |
| Box 28, Item 4  | C60 Photograph of a bridge, undated |
| Box 28, Item 5  | C61 Photograph of a bridge, undated |
| Box 28, Item 6  | C62 Photograph of a bridge, undated |
| Box 28, Item 7  | C63 Photograph of a bridge, undated |
| Box 28, Item 8  | C64 Photograph of a bridge, undated |
| Box 28, Item 9  | C65 Photograph of a bridge, undated |
| Box 28, Item 10 | C66 Photograph of a bridge, undated |
| Box 28, Item 11 | C67 Photograph of a bridge, undated |
| Box 28, Item 12 | C68 Photograph of a bridge, undated |
| Box 28, Item 13 | C69 Photograph of a bridge, undated |
| Box 28, Item 14 | C70 Photograph of a bridge, undated |

|                 |                                      |
|-----------------|--------------------------------------|
| Box 28, Item 15 | C71 Photograph of a bridge, undated  |
| Box 28, Item 16 | C72 Photograph of a bridge, undated  |
| Box 28, Item 17 | C73 Photograph of a bridge, undated  |
| Box 28, Item 18 | C74 Photograph of a bridge, undated  |
| Box 28, Item 19 | C75 Photograph of a bridge, undated  |
| Box 28, Item 20 | C76 Photograph of a bridge, undated  |
| Box 28, Item 21 | C77 Photograph of a bridge, undated  |
| Box 28, Item 22 | C78 Photograph of a bridge, undated  |
| Box 28, Item 23 | C79 Photograph of a bridge, undated  |
| Box 28, Item 24 | C80, Photograph of a bridge, undated |
| Box 28, Item 25 | C541 Photograph of bridge, undated   |

### Subseries 1.7: Bridges, Movable, 1899-1930, undated

Scope and Contents: Images document subjects created by the division. The subjects are arranged as follows: subseries 1.7.1, Bascule; subseries 1.7.2, miscellaneous types and general; subseries 1.7.3, swing; subseries 1.7.4, transporter; and subseries 1.7.5, vertical lift.

#### Subseries 1.7.1: Bascule, 1899-1930, undated

Scope and Contents: Contain images of the bridges that are also referred to as drawbridges or lifting bridges. These bridges are moveable to provide clearance for boat traffic. Most of the images are of the bridges open and include drawings and paintings.

|                 |   |
|-----------------|---|
| Box 28, Item 26 | B2 Photograph of the Tower Bridge, London, [England], undated |
| Box 28, Item 27 | B3 Photograph of a bridge, undated                            |
| Box 28, Item 28 | B6 Photograph of a bascule bridge raising, undated            |
| Box 28, Item 29 | B7 Photograph of a bascule bridge raising, undated            |
| Box 28, Item 30 | B8 Photograph of a bascule bridge, undated                    |
| Box 28, Item 31 | B9 Photograph of a bascule bridge, undated                    |
| Box 28, Item 32 | B10 Photograph of a bascule bridge, undated                   |



|                 |   |
|-----------------|---|
| Box 28, Item 33 | B11 Photograph of a bascule bridge raising, undated   |
| Box 28, Item 34 | B12 Photograph of a bascule bridge, undated   |
| Box 28, Item 35 | B13 Photograph of a bascule bridge raising, undated   |
| Box 28, Item 36 | B14 Photograph of a bascule bridge, undated   |
| Box 28, Item 37 | B15 Photograph of a bascule bridge raising, undated   |
| Box 28, Item 38 | B16 Photograph of a bascule bridge raising, undated   |
| Box 28, Item 39 | B17 Photograph of a bascule bridge raising, undated   |
| Box 28, Item 40 | B18 Photograph of a bascule bridge raising, undated   |
| Box 28, Item 41 | B19 Photograph of a bascule bridge raising, undated   |
| Box 28, Item 42 | B21 Photograph of a bascule bridge raising, undated   |
| Box 28, Item 43 | B22 Photograph of a bascule bridge raising, undated   |
| Box 28, Item 44 | B23 Photograph of a bascule bridge raising, undated   |
| Box 28, Item 45 | B24 Bridge parts, undated   |
| Box 28, Item 46 | B25 Photograph of a bascule bridge, undated   |
| Box 28, Item 47 | B26 Photograph of a bascule bridge, undated   |
| Box 28, Item 48 | B27 Photograph of a bascule bridge, undated   |
| Box 28, Item 49 | G2 Drawing of a bascule bridge raising, undated   |
| Box 28, Item 50 | S3 Image of a model bascule bridge raising, undated   |
| Box 28, Item 51 | Photograph of a bascule bridge raising, undated   |
| Box 28, Item 52 | 97. A lift up draw bridge, undated  |
| Box 28, Item 53 | Michigan Avenue Bascole Bridge, Chicago, Illinois, undated  |
| Box 28, Item 54 | 23. A lift up bridge at Alpnach, Switzerland, undated   |
| Box 28, Item 55 | Lake Pontchartrain, North Draw Bridge [Lake Pontchartrain Causeway, North Pass Span Bridge, Louisiana], undated |

|                 |   |
|-----------------|---|
| Box 28, Item 56 | Medieval bascule bridge, undated  |
| Box 28, Item 57 | Painting of a bascule bridge, undated   |
| Box 29, Item 1  | 13A728 Bascule bridge Michigan Avenue, Chicago, Illinois, undated   |
| Box 29, Item 2  | 13A.7.28 Arlington Memorial Bridge bascule span, 1930   |
| Box 29, Item 3  | Photograph of a bridge, undated   |
| Box 29, Item 4  | GE7 Designs for Vernon Avenue drawbridge over Newtown Creek, Brooklyn, New York, undated                    |
| Box 29, Item 5  | Ge-9 Image of a model bascule bridge raising, undated   |
| Box 29, Item 6  | Ge-16 Photograph of a bascule bridge, undated   |
| Box 29, Item 7  | Ge-17 Photograph of a bascule bridge raising, undated   |
| Box 29, Item 8  | Ge-22 Photograph of the Tower Bridge, London, undated   |
| Box 29, Item 9  | Ge-23 Tower Bridge, London, West of Tower Bridge, undated   |
| Box 29, Item 10 | Ge-26 Tower Bridge, London, undated   |
| Box 29, Item 11 | 23-12 Folding Bridge, Canal Street, Chicago, Illinois, undated  |
| Box 29, Item 12 | 23-13 Folding Bridge, Canal Street, Chicago, Illinois, designed and built by Shailer and Schniglan, undated |
| Box 29, Item 13 | 23-51 An A.B.T. bascule bridge, built by American Bridge Company, 1930                                      |
| Box 29, Item 14 | 28-8 Scherzer Rolling Lift Bridge, Metropolitan West Side Elevated Railroad, Chicago, Illinois, undated     |
| Box 29, Item 15 | 23-9 Scherzer Rolling Lift Bridge, Metropolitan West Side Elevated Railroad, Chicago, Illinois, undated     |
| Box 29, Item 16 | 23-10 Scherzer Rolling Lift Bridge, Chicago River, Halstead Street, undated                                 |
| Box 29, Item 17 | 23-11 Scherzer Rolling Lift Bridge, Chicago River, Halstead Street, undated                                 |
| Box 29, Item 18 | 22-32 Harway Avenue Bridge over Coney Island Creek, 1918  |
| Box 29, Item 19 | 10-39 Tower Bridge, London, undated   |
| Box 29, Item 20 | 23-5 4 Tr. Bascule bridge, Chicago and North Pacific Railroad, Chicago, 1899                                |

|                 |   |
|-----------------|---|
| Box 29, Item 21 | 23-20 16th Street Milwaukee, Wisconsin [16th Street Bridge also known as the 16th Street Viaduct], undated  |
| Box 29, Item 22 | 23-21 16th Street Milwaukee, Wisconsin [16th Street Bridge also known as the 16th Street Viaduct], undated  |
| Box 29, Item 23 | 23-3 Two bascule bridges open, undated  |
| Box 29, Item 24 | 23-1 Bascule bridge, undated  |
| Box 29, Item 25 | 23-2 Bascule bridge open, undated   |
| Box 29, Item 26 | 23-50 An A. B. T. bascule bridge, built by American Bridge Company, 1930  |
| Box 29, Item 27 | 23-47 Bridge and the Sassenpoort, Zwolle, [Netherlands], undated  |
| Box 29, Item 28 | 23-45 Sweden, Gota Canal, lifting a bridge, undated   |
| Box 29, Item 29 | 23-44 Chenonceaux Drawbridge, Chateaux of the Loire, [France], undated  |
| Box 29, Item 30 | 23-4 4 Tr. bascule bridge, Chicago and North Pacific Railroad Chicago [Chicago and North Western Railway's Kinzie Street Railroad Bridge also known as the Carroll Avenue Bridge or the Chicago and North Western Railroad Bridge?], 1899 |
| Box 29, Item 31 | 23-32 An A. B. T. bascule bridge, built by American Bridge Company, 1930  |

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### Subseries 1.7.2: Miscellaneous Types and General, undated

|                 |  |
|-----------------|--|
| Box 29, Item 32 | B20 Truss bridge, undated  |
| Box 29, Item 33 | G1 Bridges moveable in a horizontal plane, undated                 |
| Box 29, Item 34 | V27 Truss lift bridge, undated                                     |
| Box 29, Item 35 | V28 Truss lift bridge, undated                                     |
| Box 29, Item 36 | 23-42 St. Seruan Bridge, undated                                   |
| Box 29, Item 37 | 23-43 St. Seruan Bridge, construction, undated                     |
| Box 29, Item 38 | Ge-8 Design of Charles E. Bedell, sectional end elevation, undated |
| Box 29, Item 39 | Ge-19 Wrought iron hydraulic lift bridge, undated                  |
| Box 29, Item 40 | Ge-20 Lift bridge, undated   |

|                 |   |
|-----------------|---|
| Box 29, Item 41 | Ge-25 Pontoon Bridge across the Mississippi River, undated  |
| Box 29, Item 42 | 349 New York Central Railroad Drawbridge, undated   |
| Box 29, Item 43 | Suspended truss bridge, undated   |
| Box 29, Item 44 | Saint-Nazaire, the rolling bridge opened for the passage of cargo boat [Pont de Saint-Nazaire Bridge, France], undated    |
| Box 29, Item 45 | Saint-Nazaire, the Rolling Bridge opened for the passage of Transatlantic [Pont de Saint-Nazaire Bridge, France], undated |
| Box 29, Item 46 | People on lift bridge while lifted, undated   |
| Box 29, Item 47 | People on lift bridge while closed, undated   |

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### Subseries 1.7.3: Swing, undated

|                 |   |
|-----------------|---|
| Box 29, Item 48 | 18a-46 Railroad bridge over the Recknitz [Recknitz Bridge, Germany], undated                |
| Box 29, Item 49 | 23-15 Charlestown Bridge from Mr. Cheney, undated   |
| Box 29, Item 50 | 23-23 Macombs Dam Bridge, New York City, undated  |
| Box 29, Item 51 | 23-24 McCombs Dam Bridge in New York City, undated  |
| Box 29, Item 52 | 23-25 McCombs Dam Bridge in New York City, undated  |
| Box 29, Item 53 | 23-26 McCombs Dam Bridge in New York City, undated  |
| Box 29, Item 54 | 23-29 Draw span over the Harlem River, New York, undated                                    |
| Box 29, Item 55 | 23-31 Draw bridge, Central Viaduct, Cleveland, photograph from King Bridge Company, undated |
| Box 29, Item 56 | 23-33 Oregon, Portland bridge across Willamette River, undated                              |
| Box 29, Item 57 | 23-48 Retractable Bridge, Quebec [Canada], lever along axis of bridge, undated              |
| Box 29, Item 58 | 25-11 Turntable cross section, undated  |
| Box 29, Item 59 | 25-33 Turntable and cross girders assembled at shop, undated                                |
| Box 29, Item 60 | 53-28 Broadway Bridge, Boston, undated  |

|                 |  |
|-----------------|--|
| Box 29, Item 61 | Ge-3 Railway floor and track diagram by F. C. H. Arentz and L. E. Sangdahl, undated                            |
| Box 29, Item 62 | Ge-4 Railway diagram, Onward Bates and James N. Warrington, A. S. Cooper, undated                              |
| Box 29, Item 63 | Ge-5 Bridge designs, E. B. Jennings, Robert E. McMath and Sons, J. A. McNicol, undated                         |
| Box 30, Item 1  | Ge-14 Outline elevation of drawbridge designed by A. D. Ottewell for Darling Harbor Bridge completion, undated |
| Box 30, Item 2  | Ge-15 Pivot Pier of the proposed Darling Harbor Bridge, undated  |
| Box 30, Item 3  | Ge-18 Bridge swing machinery, undated  |
| Box 30, Item 4  | Ge-21 Bridge swing diagram, undated  |
| Box 30, Item 5  | Ge-24 Single track railroad bridge, Moorhead, North Dakota, undated  |
| Box 30, Item 6  | 292 White River Drawbridge, Cotton Belt Route, undated   |
| Box 30, Item 7  | 293 Central Railroad bridges, undated  |
| Box 30, Item 8  | 298 Turntable Central Railroad Bridge New York, undated  |
| Box 30, Item 9  | 345 New York Central Railroad, undated   |
| Box 30, Item 10 | 367 Turntable New York Central Railroad, undated   |
| Box 30, Item 11 | M1 Interior machinery, undated   |
| Box 30, Item 12 | R1 Turntable, undated  |
| Box 30, Item 13 | S1 Bridge construction, undated  |
| Box 30, Item 14 | S2 Bridge construction, undated  |
| Box 30, Item 15 | C-782 Sky view of bridge, undated  |
| Box 30, Item 16 | Best swing bridge, undated   |
| Box 30, Item 17 | Bridge photograph, undated   |
| Box 30, Item 18 | Bridge photograph, undated   |

**Subseries 1.7.4: Transporter, undated**

|                 |   |
|-----------------|---|
| Box 30, Item 19 | 53-22 Rouen Transporter Bridge [France], undated  |
| Box 30, Item 20 | 53-78 Rouen Transporter Bridge [France], undated  |
| Box 30, Item 21 | 53-81 Rouen Transporter Bridge [France], undated  |
| Box 30, Item 22 | 53-82 Rouen Transporter Bridge [France], undated  |
| Box 30, Item 23 | 53-231 Transporter Bridge [Transporter Bridge of Marseille] across entrance to harbor, Marseille, France, undated |
| Box 30, Item 24 | Suspended Lift Bridge, undated  |
| Box 30, Item 25 | Suspended Ferry, Rouen, France, undated   |
| Box 30, Item 26 | Suspended Ferry, Rouen, France, undated   |
| Box 30, Item 27 | Marseilles, Transporter Bridge [France], undated  |

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**Subseries 1.7.5: Vertical Lift, undated**

|                 |   |
|-----------------|---|
| Box 30, Item 28 | M2 Interior machinery, undated  |
| Box 30, Item 29 | V1 Lift bridge, Clements of Charleston, undated   |
| Box 30, Item 30 | V2 Lift bridge, Clements of Charleston, undated   |
| Box 30, Item 31 | V3 Bridge, Chicago, Illinois, undated   |
| Box 30, Item 32 | V4 Bridge, Chicago, Illinois, undated   |
| Box 30, Item 33 | V5 Bridge, Chicago, Illinois, undated   |
| Box 30, Item 34 | V6 Harriman Bridge, view of completed structure looking East, showing entrance of railway tracks at West End, and relation of highway approach, undated |
| Box 30, Item 35 | V7 Willamette River Bridge, Portland, Oregon, undated   |
| Box 30, Item 36 | V8 Harriman Bridge, undated   |
| Box 30, Item 37 | V9 Harriman Bridge, view showing lifting span and lifting deck raised, undated  |
| Box 30, Item 38 | V10 Willamette River Bridge, Portland, Oregon, undated  |
| Box 30, Item 39 | V11 Lift span, erected position, Pennsylvania, undated  |

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|-----------------|---|
| Box 30, Item 40 | V12 Pennsylvania Railroad Company Bridge over the South Branch of the Chicago River, Chicago, Illinois, undated                               |
| Box 30, Item 41 | V13 Lift bridge parts, undated  |
| Box 30, Item 42 | V14 Lift bridge parts, undated  |
| Box 30, Item 43 | V15 Lift bridge parts, undated  |
| Box 30, Item 44 | V16 Lift bridge turntable, undated  |
| Box 30, Item 45 | V17 Two twelfth cast steel sheaves and supporting girders, undated  |
| Box 30, Item 46 | V18 Double track lift bridge of Pennsylvania lines at Louisville, Kentucky, undated   |
| Box 30, Item 47 | V19 Two lift bridges on same river, undated   |
| Box 30, Item 48 | V20 Bridge over the city waterway at Tacoma, Washington, lifting span down, undated   |
| Box 30, Item 49 | V21 Bridge over the city waterway at Tacoma, Washington, lifting span up, undated   |
| Box 30, Item 50 | V22 Pennsylvania Railroad Company bridge over the Calumet River, South Chicago, Illinois, undated   |
| Box 30, Item 51 | V23 Portion of the operating machinery, Pennsylvania lines, undated   |
| Box 30, Item 52 | V24 Lift bridge, undated  |
| Box 30, Item 53 | V25 Lift bridge, undated  |
| Box 30, Item 54 | V26 Lift bridges over Don River at Rostoff, Russia for Vladicaucase Railway Company, double track lift span after Russian Revolution, undated |
| Box 30, Item 55 | 13A.7.28 Triborough Bridge, New York, Harlem River lift span, undated   |
| Box 30, Item 56 | 13A.7.28 Erection of lift span, Harlem River, Triborough, undated   |
| Box 30, Item 57 | 13A.7.28 Lift span, Suisun Bay Bridge, undated  |
| Box 30, Item 58 | 13A.7.28 Erection of lift span, Albany Rensselaer Bridge, undated   |
| Box 30, Item 59 | Ge-2 Bridge designs by J. A. L. [John Alexander Low] Waddell, undated   |
| Box 30, Item 60 | Ge-10 Design of F. S. Williamson and Alfred Leibman I, undated  |
| Box 30, Item 61 | Ge-13 Lift bridge, undated  |

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|----------------|---|
| Box 31, Item 1 | 23-6 Chicago, Halsted Street Lift Bridge, undated                 |
| Box 31, Item 2 | 23-7 Chicago, Halsted Street Lift Bridge, undated                 |
| Box 31, Item 3 | 53-232 Bridge across Cape Cod Canal, undated                      |
| Box 31, Item 4 | Lift Bridge over Willamette River, undated                        |
| Box 31, Item 5 | Lift Bridge at Troy, New York, undated                            |
| Box 31, Item 6 | Triborough Bridge Project, Harlem River Lift Bridge, undated      |
| Box 31, Item 7 | Low Level Study at Site of Old Structure, undated                 |
| Box 31, Item 8 | Low Level Study at Cass Street, Mississippi River Bridge, undated |

### Subseries 1.8: Bridges, Suspension, 1820-1932, undated

Scope and Contents: Images document subjects created by the division and are arranged as follows: subseries 1.8.1, Brooklyn Bridge, New York; subseries 1.8.2, George Washington Suspension Bridge; subseries 1.8.3, Manhattan Bridge; subseries 1.8.4., Oakland, Golden Gates; subseries 1.8.5, Philadelphia-Camden Suspension Bridge; subseries 1.8.6, suspension, foreign, subseries 1.8.7, suspension, primitive types; subseries 1.8.8, suspension, United States, miscellaneous; and subseries 1.8.9, Williamsburg Bridge.

#### Subseries 1.8.1: Brooklyn Bridge, 1878-1883, undated

Scope and Contents: Contain images of the bridge in New York City that spans the East River between the boroughs of Manhattan and Brooklyn.

|                 |   |
|-----------------|---|
| Box 31, Item 9  | 12A.7.26 Brooklyn Bridge woodcut by R. Ruzicka, 1883    |
| Box 31, Item 10 | 10558 Great Brooklyn Bridge, New York, undated          |
| Box 31, Item 11 | Footway over Brooklyn Bridge, undated                   |
| Box 31, Item 12 | Brooklyn Bridge, Brooklyn Tower, Up to Roadway, undated |
| Box 31, Item 13 | Auction plates, Brooklyn Bridge cables, undated         |
| Box 31, Item 14 | Wires, Brooklyn Bridge cables, undated                  |
| Box 31, Item 15 | 69 Brooklyn Bridge, New York, undated                   |
| Box 31, Item 16 | 70 East River Bridge, New York City, undated            |
| Box 31, Item 17 | 71 East River Bridge, New York, undated                 |



Box 31, Item 18 Brooklyn Bridge, cables completed, late 1878 or early 1879

Box 31, Item 19 Bird's eye view, undated

Box 31, Item 20 Cable construction etching, undated

Box 31, Item 21 Ships below bridge, undated

Box 31, Item 22 Ships below bridge, undated

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### Subseries 1.8.2: George Washington Suspension Bridge, 1930-1932, undated

Scope and Contents: Include images of the bridge that spans the Hudson River and connects Fort Lee in Bergen County, New Jersey, with the Washington Heights neighborhood of Manhattan in New York City.

Box 31, Item 23 53-148 General view of Palisade on New Jersey side looking north from bridge site, undated

Box 31, Item 24 53-151 Isometric drawing of foundations of New Jersey tower during construction, undated

Box 31, Item 25 53-152 New Jersey Pier Foundations, one cofferdam for North Pier and one for South Pier, undated

Box 31, Item 26 53-153 Interior of New Jersey Pier Foundation showing 12 x 12 bracing, undated

Box 31, Item 27 53-154 South Pier of New Jersey Tower Foundations about complete, undated

Box 31, Item 28 53-155 Setting pedestal on South Pier, New Jersey Tower, undated

Box 31, Item 29 53-156 New Jersey Tower erection, some of first column sections in place, undated

Box 31, Item 30 53-157 New Jersey Tower erection, traveler raised to first position, undated

Box 31, Item 31 53-158 New Jersey Tower erection, one half of columns and bracing in place, undated

Box 31, Item 32 53-159 Looking through cut in Palisade toward New York, undated

Box 31, Item 33 53-160 New Jersey Tower, looking south, column section being raised, undated

Box 31, Item 34 53-161 New York Anchorage and Tower, two more sections to be erected on tower, undated

Box 31, Item 35 53-161 Celluloid model of tower to check design stress distribution at base, undated

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|-----------------|---|
| Box 31, Item 36 | 53-163 Half size tower section tested to destruction at the Bureau of Standards, undated      |
| Box 31, Item 37 | 53-164 Placing of anchorage girders and eye bars in New York Anchorage, undated               |
| Box 31, Item 38 | 53-165 Longitudinal section of New York Anchorage, several strands of cable complete, undated |
| Box 31, Item 39 | 53-166 Looking into Anchorage Tunnel in Palisades, undated                                    |
| Box 31, Item 40 | 53-167 Longitudinal section through New Jersey Palisades showing method of blasting, undated  |
| Box 31, Item 41 | 53-168 Longitudinal section through New Jersey Anchorage Tunnel, undated                      |
| Box 31, Item 42 | 53-169 Laying footbridge ropes on bottom river, note tug, undated                             |
| Box 31, Item 43 | 53-170 Adjusting footbridge ropes to proper sag by means of hydraulic jack, undated           |
| Box 31, Item 44 | 53-171 Footbridge erection in center span, note crossbridge being raised from river, undated  |
| Box 31, Item 45 | 53-172 Traveler for erecting footbridge in center span, undated                               |
| Box 31, Item 46 | 53-174 Diagrammatic layout of cable spinning operation, undated                               |
| Box 31, Item 47 | 53-175 Longitudinal section of New Jersey Anchorage during cable spinning, undated            |
| Box 31, Item 48 | 53-176 Sections of Footbridges and Main Cable at Various Stages of Construction, undated      |
| Box 31, Item 49 | 53-178 Man attaching come along for wire adjustment at tower, undated                         |
| Box 31, Item 50 | 53-179 New York Anchorage during cable spinning, undated                                      |
| Box 31, Item 51 | 53-180 Test section of main cable made in shop to determine final diameter of cable, undated  |
| Box 31, Item 52 | 53-181 Final cable compactors in open position, center span, south footbridge, undated        |
| Box 31, Item 53 | 53-182 On top of New Jersey Tower, no spinning being done on near cable, undated              |
| Box 31, Item 54 | 53-183 Placing second strand of first set into final position in tower saddle, undated        |

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|-----------------|--|
| Box 31, Item 55 | 53-184 One hundred and fifty ton hydraulic jacks in place in New York Anchorage for adjustment of strands, undated |
| Box 31, Item 56 | 53-185 View on North Footbridge looking toward New York Tower, undated   |
| Box 31, Item 57 | 53-186 View along footbridge center span, cables completely wrapped, undated                                       |
| Box 31, Item 58 | 53-187 View Through New York Tower Looking Toward New Jersey, Showing Floor Steel Erection, undated                |
| Box 31, Item 59 | 53-189 Last floor beam being erected in center span, undated   |
| Box 31, Item 60 | 53-190 Wrapping machine wrapping cable in center span about in middle of a panel, undated                          |
| Box 32, Item 1  | 53-191 Wrapping machine being loaded with wrapping wire before starting in new panel, undated                      |
| Box 32, Item 2  | 53-192 View along center line of bridge from New Jersey Tower top looking toward New York, undated                 |
| Box 32, Item 3  | 53-194 New York approach looking towards the bridge, undated   |
| Box 32, Item 4  | 53-195 New Jersey approach looking west from New Jersey Tower top, undated   |
| Box 32, Item 5  | 53-200 George Washington Bridge, 1932-05-08  |
| Box 32, Item 6  | T-171 Horizontal view, undated   |
| Box 32, Item 7  | T-171 Horizontal distance view, undated  |
| Box 32, Item 8  | Hudson River, George Washington Bridge, New Jersey Tower, undated  |
| Box 32, Item 9  | George Washington Bridge, Hudson River, 1931-01-07   |
| Box 32, Item 10 | General plan and elevation, George Washington Bridge, undated  |
| Box 32, Item 11 | Major bridges of the world drawn to scale in comparison to Hudson River Bridge, undated                            |
| Box 32, Item 12 | Workers on top of bridge, New York Herald Tribune, 1930-10-12  |

### Subseries 1.8.3: Manhattan Bridge, 1820-1907, undated

Scope and Contents: Images document the suspension bridge that crosses the East River in New York City and connects Lower Manhattan at Canal Street with downtown Brooklyn.

|                 |  |
|-----------------|--|
| Box 32, Item 13 | 38-36 Manhattan Bridge, half of assembled pedestal, 1907-10-19                                       |
| Box 32, Item 14 | 38-37 Outside piece of Manhattan Bridge pedestals, 1907-10-19  |
| Box 32, Item 15 | 38-39 Manhattan Suspension Bridge, shoes on pier, undated  |
| Box 32, Item 16 | 38-40 Manhattan Suspension Bridge, anchorage, undated  |
| Box 32, Item 17 | 38-41 Manhattan Bridge, laying foundation stones, undated  |
| Box 32, Item 18 | 38-42 Manhattan Bridge, Kings views of New York City, 1903   |
| Box 32, Item 19 | 38-43 Saddles for cables, undated  |
| Box 32, Item 20 | 41-1 Site for caisson, undated   |
| Box 32, Item 21 | 41-2 Caisson coming into berth, 6:45 PM, undated   |
| Box 32, Item 22 | 41-3 Caisson at pike, slip from railroad float, undated  |
| Box 32, Item 23 | 41-4 Caisson from roof of Pier 31, East River, undated   |
| Box 32, Item 24 | 41-5 Pier from roof of Pier 32, East River, undated  |
| Box 32, Item 25 | 41-6 Caisson Manhattan Pier from Pier 31, East River, undated  |
| Box 32, Item 26 | 41-7 View of Pike Slip Anchorage, undated  |
| Box 32, Item 27 | 41-8 Looking across anchorage, Brooklyn, undated   |
| Box 32, Item 28 | 41-9 Overlooking anchorage of Manhattan Bridge from roof of hotel opposite southwest corner, undated |
| Box 32, Item 29 | 41-10 Rear of anchorage, general view, undated   |
| Box 32, Item 30 | 41-11 Eye bars in pit and wooden beams, undated  |
| Box 32, Item 31 | 41-12 Rear of Brooklyn Anchorage, Manhattan Bridge, undated  |
| Box 32, Item 32 | 41-13 Top of anchorage Manhattan side from roof of Keeting building, undated                         |
| Box 32, Item 33 | 41-14 Showing steel members, Manhattan side from Pier 32, East River, undated                        |
| Box 32, Item 34 | 41-15 View from Washington and Adams Streets, Manhattan Bridge, Brooklyn, undated                    |
| Box 32, Item 35 | 41-17 Showing saddles casting, looking South East, Manhattan side, undated                           |

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|-----------------|---|
| Box 32, Item 36 | 41-18 Showing east face of anchorage looking west from Pike Street, undated   |
| Box 32, Item 37 | 41-19 View from top of anchorage, looking west, undated                       |
| Box 32, Item 38 | 41-20 Manhattan bridge, drawing cable across river, undated                   |
| Box 32, Item 39 | 41-21 View from roof of Robert Gear Building, Brooklyn, undated               |
| Box 32, Item 40 | 41-22 General view from 68 Pike Street, Manhattan, undated                    |
| Box 32, Item 41 | 41-23 Showing system of stringing cable from 71 Pike Street, undated          |
| Box 32, Item 42 | 41-24 Showing system of drawing cables, Brooklyn, undated                     |
| Box 32, Item 43 | 41-25 Showing system of drawing cables and hydraulic jack, undated            |
| Box 32, Item 44 | 41-26 System of weaving cables from anchorage, Brooklyn, undated              |
| Box 32, Item 45 | 41-27 From top of anchorage, looking west, undated                            |
| Box 32, Item 46 | 41-28 From roof opposite anchorage, Brooklyn, undated                         |
| Box 32, Item 47 | 41-29 Front of anchorage, northeast Brooklyn, undated                         |
| Box 32, Item 48 | 41-30 From roof of Robert Gear Building looking west, undated                 |
| Box 32, Item 49 | 41-31 Showing tower and broken beam from recreation pier, East River, undated |
| Box 32, Item 50 | 41-32 From trestle looking east, Brooklyn, undated                            |
| Box 32, Item 51 | 41-33 Manhattan tower from Empire Mills docks, Brooklyn, undated              |
| Box 32, Item 52 | 41-34 From roof of Sweeney Building, looking west, Brooklyn, undated          |
| Box 32, Item 53 | 41-35 Showing side span, looking north, undated                               |
| Box 32, Item 54 | 41-36 Side span, looking south from the anchorage, undated                    |
| Box 32, Item 55 | 41-37 Steel work between Pier B and A looking north, Brooklyn, undated        |
| Box 32, Item 56 | 41-39 From top of anchorage, looking south, undated                           |
| Box 32, Item 57 | 41-40 Showing system of winding wire on cables, undated                       |
| Box 32, Item 58 | 41-41 Showing wrapping machine looking north, Brooklyn, undated               |
| Box 32, Item 59 | 41-42 From top of Brooklyn anchorage looking north, undated                   |

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|-----------------|---|
| Box 32, Item 60 | 41-44 View of anchorage, Pike and Walter Streets, Manhattan side, undated                           |
| Box 32, Item 61 | 41-45 From 39 Division Street, looking west, New Erie Lackawanna Railroad, steel structure, undated |
| Box 33, Item 1  | 41-46 From Pier 7 to abutment, undated  |
| Box 33, Item 2  | 41-48 Showing system of erections steel for Erie Lackawanna Railroad, undated                       |
| Box 33, Item 3  | 41-49 From Market and Division Streets, looking east, undated                                       |
| Box 33, Item 4  | 41-50 From southeast corner of anchorage, looking northwest, undated                                |
| Box 33, Item 5  | 41-50a View from roof of manufacturing building, opposite Manhattan Bridge, undated                 |
| Box 33, Item 6  | 53-51 Manhattan Bridge, traffic, undated  |
| Box 33, Item 7  | Menai Bridge, Thomas Telford, 1820-1826   |

#### Subseries 1.8.4: Oakland, Golden Gate [Bridge], undated

Scope and Contents: Contain images of the bridge that spans the Golden Gate, the one-mile-wide strait connecting San Francisco Bay and the Pacific Ocean.

|                 |  |
|-----------------|--|
| Box 33, Item 8  | 22-50 Setting a cable strand on Golden Gate Bridge, undated  |
| Box 33, Item 9  | 22-51 Squeezing thirty seven strands into one round cable for San Francisco-Oakland Bay Bridge, undated  |
| Box 33, Item 10 | 22-52 View of San Francisco-Oakland Bay Bridge during erection, undated  |
| Box 33, Item 11 | 22-53 One of the San Francisco bridges, undated  |
| Box 33, Item 12 | 22-54 San Francisco-Oakland Bay Bridge, huge radial jack used to squeeze thirty seven strands of suspension cables into round compact shape, undated |
| Box 33, Item 13 | 22-58 San Francisco-Oakland Bay Bridge, caisson for central anchorage, Pier W4, undated  |
| Box 33, Item 14 | 22-60 San Francisco-Oakland Bay Bridge, wire splice cut away to show right and left hand threads and beveled ends, undated                           |
| Box 33, Item 15 | 22-61 San Francisco-Oakland Bay Bridge, strand shoes, note vertical position of shoe, undated  |

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| Box 33, Item 16 | 22-62 San Francisco-Oakland Bay Bridge, one of spinning wheels and arrangement of spinning equipment, undated |
| Box 33, Item 17 | 22-63 San Francisco-Oakland Bay Bridge, compacting sample cable, undated                                      |
| Box 33, Item 18 | 22-64 San Francisco-Oakland Bay Bridge, wrapping the cable, undated   |
| Box 33, Item 19 | San Francisco-Oakland Bay Bridge, undated   |
| Box 33, Item 20 | Planning base section of a tower column, undated  |
| Box 33, Item 21 | Pier fender, Golden Gate Bridge, undated  |
| Box 33, Item 22 | Golden Gate Bridge from north, undated  |
| Box 33, Item 23 | San Francisco pier and fender, Golden Gate Bridge, undated  |
| Box 33, Item 24 | Construction of central anchorage pier, San Francisco-Oakland Bay Bridge, undated                             |
| Box 33, Item 25 | Golden Gate Bridge, undated   |
| Box 33, Item 26 | Section of pier and tower, Golden Gate Bridge, undated  |
| Box 33, Item 27 | Base section of tower column, undated   |
| Box 33, Item 28 | Central anchor pier, undated  |

Subseries 1.8.5: Philadelphia-Camden Suspension Bridge [Benjamin Franklin Bridge originally named the Delaware River Bridge], 1818-1925, undated

Scope and Contents: Include images of the bridge locally known as the Ben Franklin Bridge which crosses the Delaware River connecting Philadelphia, Pennsylvania, and Camden, New Jersey.

|                 |  |
|-----------------|--|
| Box 33, Item 29 | 62-1 As the Bridge Will Look from the River, undated   |
| Box 33, Item 30 | 62-2 Proposed Bridge of 1818, 1818                     |
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| Box 34, Item 15 | 62-47 Cable wire handling mechanism, travelling sheave, 1924-08-25                       |
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| Box 34, Item 22 | 62-55 Compressing cable into circular shape, 1925-01-31                          |
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| Box 34, Item 29 | 62-61 Placing completed strand in cable saddle, 1924-10-13                       |
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| Box 34, Item 37 | 2162-74 Camden approach looking northwest from 3rd and Pearl Streets, 1925-05-01 |
| Box 34, Item 38 | 2300-93 Camden approach 2nd and Pearl Streets looking northwest, 1925-07-02      |
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| Box 34, Item 40 | 2346-86 Suspended structure, connection of stiffening truss, 1925-07-30          |
| Box 34, Item 41 | Philadelphia Camden Suspension Bridge tower detail, undated                      |
| Box 34, Item 42 | C-781 Aerial view of bridge, undated   |
| Box 34, Item 43 | Aerial view of bridge, undated   |
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| Box 34, Item 45 | Suspended structure, looking Northeast from Camden, 1925-03-23  |
| Box 34, Item 46 | First operation in erecting the stiffening trusses, undated   |
| Box 34, Item 47 | View of wrapped cables, undated   |
| Box 34, Item 48 | View of wrapped cables, undated   |
| Box 34, Item 49 | Model of wrapped cables, undated  |
| Box 34, Item 50 | The Bone of Contention Between Two Sovereign States: The New Bridge from Camden to Philadelphia, Which Pennsylvania Claims Should be Toll Free, While New Jersey is Committed to Tolls, undated |
| Box 34, Item 51 | Construction photograph, undated  |

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#### Subseries 1.8.6: Suspension, Foreign

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| Box 34, Item 53 | 10-15 Hungerford Bridge, undated  |
| Box 34, Item 54 | 10-17 Lambeth Suspension Bridge, London, undated                                      |
| Box 34, Item 55 | 18-1 The Rivers (Hanf?) (Enrsim?) Ratisbon, undated                                   |
| Box 34, Item 56 | 22a-9 Suspension Bridge, Dumfries, undated  |
| Box 34, Item 57 | 22a-13 Suspension Bridge, Scotland, undated   |
| Box 34, Item 58 | 22a-23 France, undated  |
| Box 34, Item 59 | 22a-32 Mooring Shafts and Cables Diagrams, undated                                    |
| Box 34, Item 60 | 22a-37 Suspension Bridge, Roof of Palace, Budaapest and the Magyrs, 1924-11-19        |
| Box 34, Item 61 | 22a-37 Suspension Bridge and Royal Palace, Budapest and the Magyrs, undated           |
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| Box 35, Item 2  | 22a-45 North Shore Suspension Bridge, New South Wales, undated                        |
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| Box 35, Item 4  | 48-4 Reversing Falls, New Brunswick, Canada, Bridge, 1912  |
| Box 35, Item 5  | 53-19 Rouen, France, Ancient Bridge Suspends, undated  |
| Box 35, Item 6  | 53-79 German Suspension Bridge, Cologne Chain Bridge, Stiffening Girder, undated                     |
| Box 35, Item 7  | 53-80 Neckar Bridge, Weitingen, Germany, Cantilever Imitating Suspension, 1890                       |
| Box 35, Item 8  | 53-92 Suspension Bridge Across the Elbe, 1924-10-30  |
| Box 35, Item 9  | Gg-2 Suspension Arch Bridge, undated   |
| Box 35, Item 10   | Menai Straits Bridge, Thomas Telford, 1820-1826  |
| Box 35, Item 11   | Suspension Bridge, Fribourg, Switzerland, undated  |
| Box 35, Item 12   | Budapest Bridge, undated   |
| Box 35, Item 13   | Vicat's Cable-Making Method, undated   |
| Box 35, Item 14   | Fribourg Suspension Bridge, undated  |
| Box 35, Item 15   | Constantine, Algeria, undated  |
| Box 35, Item 16   | Darjeeling, Teesta Bridge, 1881  |
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| Subseries 1.8.7: Subseries 1.8.7: Suspension, Primitive Types, 1925, undated, undated |  |
| Box 35, Item 17   | 22a-24 Cane Bridge on the Dik Choo, Sikkim, undated  |
| Box 35, Item 18   | 22a-42 Suspension Bridge, Tinfos, Thelemarken, Norway, undated                                       |
| Box 35, Item 19   | T-182 Bridge of Monkeys, Cartoon, undated  |
| Box 35, Item 20   | India, Darjeeling, Pallau Suspension Bridges, undated  |
| Box 35, Item 21   | Asia, Rope Bridges in Kashmir, Hazel Twigs, Practised Feet Cross Easily, Indo-Himalayan Bridge, 1925 |
| Box 35, Item 22   | Chain Bridge on China, Tibet, Main Highway over Tung Kwiang at Lu-Ting-Chao in West China, 1925      |
| Box 35, Item 23   | China, Twisted Bamboo, Momentum Carries the Traveler on a Slide Well Past the Sag, 1925              |
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**Subseries 1.8.8: Subseries 1.8.8: Suspension, United States, Miscellaneous, 1801-1927, undated**

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| Box 35, Item 25 | 22-35 Point Bridge, Pittsburg, undated   |
| Box 35, Item 26 | 22-37 Ninth Street Bridge, Pittsburgh, Pennsylvania, Self Enclosed Suspension Bridge, 1926-07-27   |
| Box 35, Item 27 | 22-38 Seventh and Ninth Street Bridges Taken from Fulton Building, 1927-06-02                      |
| Box 35, Item 28 | 22-40 Suspension Bridge, Indian River, undated   |
| Box 35, Item 29 | 22-68 Cable Spinning, Bridge Unknown, undated  |
| Box 35, Item 30 | 53-103 Bear Mountain Bridge View from East End, undated  |
| Box 35, Item 31 | 53-104 Proposed North River Bridge, 1927   |
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| Box 35, Item 33 | 53-107 Comparative Cable Sections of Various Suspension Bridges, undated                           |
| Box 35, Item 34 | Gg-1 Mill Creek Park, Youngstown, Ohio, Stiffened Suspension Bridge, undated                       |
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| Box 35, Item 37 | 13A.7.26 Proposed North River Suspension Bridge, Gustav Lindenthal, undated                        |
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| Box 35, Item 40 | C-778 Suspension Bridge, undated   |
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| Box 35, Item 42 | Upper Ferry Bridge, Schuylkill River, Philadelphia, Built 1842 by Colonel Charles Ellet, undated   |
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| Box 35, Item 44 | Strong, Maine, undated  |
| Box 35, Item 45 | Wire Bridge, Portland, circa 1866                                       |
| Box 35, Item 46 | Suspension Bridge in Countryside, undated                               |
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| Box 35, Item 49 | Triborough Bridge Project, 3-Way Intersection on Randolls, undated      |
| Box 35, Item 50 | Seventh Street Bridge, Pittsburgh, Pennsylvania, undated                |
| Box 35, Item 51 | Make-up of Tower Legs, undated  |
| Box 35, Item 52 | Detroit River Bridge General Plan of Main Span, undated                 |
| Box 35, Item 53 | Train under Suspension Bridge, undated                                  |
| Box 35, Item 54 | Street Car and Carriage under Suspension Bridge, undated                |
| Box 35, Item 55 | Suspension Bridge with Stone Towers, undated                            |
| Box 35, Item 56 | Bridge Cable Has 186,666 Strands, from Popular Science Monthly, undated |

#### Subseries 1.8.9: Williamsburg Bridge, 1912, undated

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| Scope and Contents: | Include images of the bridge across the East River in New York City and connects the Lower East Side of Manhattan with the Williamsburg neighborhood of Brooklyn. |
| Box 36, Item 1      | 38-26 Williamsburg Bridge, Looking along Sidewalk, undated  |
| Box 36, Item 2      | 38-27 Williamsburg Bridge, Looking along Sidewalk, undated  |
| Box 36, Item 3      | 38-29 Williamsburg Bridge, New York Side View, 1912   |
| Box 36, Item 4      | 38-30 Williamsburg Bridge, Strand Shoes in Position During Cable Spinning, undated  |
| Box 36, Item 5      | 53-52 Williamsburg Bridge, New York traffic, undated  |
| Box 36, Item 6      | New East River Bridge from Brooklyn, New York, undated  |
| Box 36, Item 7      | New York City, East River Bridge, undated   |
| Box 36, Item 8      | New Bridge over the East River in course of construction, undated   |

Box 36, Item 9 Williamsburg Bridge, foot bridge from Brooklyn Tower, undated

Box 36, Item 10 Queensborough Bridge and Manhattan Bridge, undated

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### Subseries 1.9: Canals, 1825-1931, undated

Scope and Contents: Slides arranged in subjects created by the division and include: subseries 1.9.1, Nicaragua Canal; 1.9.2, Panama Canal; and subseries 1.9.3, other canals.

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Box 36, Item 11 190 Photograph of men in a jungle, undated

Box 36, Item 12 194 Photograph of a man in a jungle, undated

Box 36, Item 13 196 Photograph of two men with a survey transit, undated

Box 36, Item 14 212 Proposed route of Nicaragua Canal, undated

Box 36, Item 15 214 Photograph of man with boats in Nicaragua Canal, undated

Box 36, Item 16 215 Photograph of men and boat next to Nicaragua Canal, undated

Box 36, Item 17 217 Photograph of boats in Nicaragua Canal, undated

Box 36, Item 18 229 Photograph of men in a jungle, undated

Box 36, Item 19 231 Photograph of men eating in a jungle, undated

Box 36, Item 20 238 Photograph of men in a jungle, undated

Box 36, Item 21 240 Photograph of a man near the Nicaragua Canal, undated

Box 36, Item 22 250 Men with wooden boxes and barrels, undated

Box 36, Item 23 251 Photograph of men on steps, undated

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Box 36, Item 25 Photograph of a man at a typewriter, undated

Box 36, Item 26 Muelle De Corinto Nicaragua, Central America, undated

Box 36, Item 27 Photograph of men with a fallen bridge, undated

Box 36, Item 28 Photograph of a house and horse grazing, undated

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| Box 36, Item 29 | Photograph of Unites States troops in a boat, undated                                      |
| Box 36, Item 30 | Photograph of United States Army transportation Chateau Thierry, undated                   |
| Box 36, Item 31 | Photograph of snake on wooden logs, undated  |
| Box 36, Item 32 | Photograph of a train station, undated   |
| Box 36, Item 33 | Photograph of a boat and people on a pier, undated   |
| Box 36, Item 34 | Photograph of two men with a survey transit, undated                                       |
| Box 36, Item 35 | Photograph of a man on a wooden structure near the Nicaragua Canal, undated                |
| Box 36, Item 36 | Photograph of a man with equipment near a jungle, undated                                  |
| Box 36, Item 37 | Photograph of three men on a beach, undated  |
| Box 36, Item 38 | Photograph of men in a room with maps, undated   |
| Box 36, Item 39 | Photograph of men in front of a tent, undated  |
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| Box 36, Item 41 | Photograph of men working on equipment, undated  |
| Box 36, Item 42 | Photograph of men lining a trench with logs, undated                                       |
| Box 36, Item 43 | Photograph of boat 'Victoria', undated   |
| Box 36, Item 44 | Photograph of three men in front of camp, undated  |
| Box 36, Item 45 | Nicaragua Canal Via Rio Deseado route, undated   |
| Box 36, Item 46 | H. M. S. Nelson [passing through the] Pedro Miguel locks, Panama Canal, 1931-02-23         |
| Box 36, Item 47 | Panama Canal, U. S. S. West Virginia leaving upper Miraflores lock, southbound, 1924-10-16 |
| Box 36, Item 48 | Panama Canal, Aeroplane carrier "Saratoga" in Gaillard cut, 1928-02-07                     |
| Box 36, Item 49 | Photograph of men in a room with maps, undated   |
| Box 36, Item 50 | Future Isthmian Canal traffic in Net Tonnage, undated                                      |
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| Box 36, Item 52 | Panama Canal, Madden Dam Project, 1930-11-05   |
| Box 36, Item 53 | Panama Canal, U. S. S. West Virginia leaving upper Miraflores lock, southbound, 1924-10-16 |
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| Box 37, Item 4  | 232 Photograph of two men with fish, undated   |
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| Box 37, Item 9  | 13A.8.6 "Panama Gatun Locks," lithograph by Joseph Pennell, undated  |
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| Box 37, Item 11 | City of Panama, birds eye view from Ancon Hill, 1855   |
| Box 37, Item 12 | S.63 Forward view of submarines, undated   |
| Box 37, Item 13 | 40.1 Dirt train, French days, undated  |
| Box 37, Item 14 | S.124 Old French machine, undated  |
| Box 37, Item 15 | Dredge at work, Culebra, undated   |
| Box 37, Item 16 | Photograph of a ship, undated  |
| Box 37, Item 17 | Photograph of aerial view, undated   |
| Box 37, Item 18 | Miraflores upper locks, view from middle lock, looking south along east chamber, lower locks and sea level section in distance, 1913-07-06                   |
| Box 37, Item 19 | Culebra cut, looking north from top of Gold Hill, 1913-06-30   |
| Box 37, Item 20 | Dirt spreader on spoil dump, undated   |
| Box 37, Item 21 | Miraflores upper locks, middle well cylindrical valve machine number 717 and central panel, chamber walls, floor and panel partially completed, 1913-06-20   |
| Box 37, Item 22 | Culebra cut empire, looking north from Suspension Bridge showing cut completed except toe of slide on right, drainage ditch is below of canal, 1913-06-16    |
| Box 37, Item 23 | Miraflores lower locks, miter gate moving machine number 127, shown, bulkhead, spring center near and floor stand in place, west wall, south end, 1913-05-11 |
| Box 37, Item 24 | Culebra Cut, Culebra, seagoing suction dredge "Culebra" passing Cucaracha slide, 1914-01-20  |
| Box 37, Item 25 | Pedro Miguel locks, transformer room number 765 high tension oil switch bank and bus structure with one power transformer, 1913-07-17                        |
| Box 37, Item 26 | Canal, undated   |
| Box 37, Item 27 | 17285 Colonel Goethals, portrait, undated  |
| Box 37, Item 28 | 17286 Gorgas, portrait, undated  |
| Box 37, Item 29 | 25110-140 Miraflores lower locks, Panama, undated  |
| Box 37, Item 30 | 25111-144 Miraflores upper locks looking north, Panama, undated  |
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| Box 37, Item 34 | 25137-151 Miraflores upper locks, Panama, undated  |
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| Box 37, Item 38 | Culebra cut, Culebra, deepest excavated portion of Panama Canal, showing Gold Hill on right and Contractor's Hill on left, 1913-05   |
| Box 37, Item 39 | Crane pulling shovel out of slide at Cucaracha, 1907-10-05   |
| Box 37, Item 40 | Turning the water into lock chamber, 1913-09-26  |
| Box 37, Item 41 | Canal at night, undated  |
| Box 37, Item 42 | Miraflores lower locks, Miter gate moving machine number 127, machine installed complete except short arm and anchor casting on gate leaf, installation of structural steel in decking, 1913-05-20                                       |
| Box 37, Item 43 | Panama Canal, Madden Dam Project, main branch 237 feet from Truck Cavern, contact of wall rock of backed limestone in place (left) and secondary limestone filling (right) marked by flashlight, note the sand filled cracks, 1930-11-05 |
| Box 37, Item 44 | Balboa terminals, machine and erecting shop looking northwest showing steel frame completed and tile roofing placed on lean to, 1913-08-07   |
| Box 37, Item 45 | Pedro Miguel lock looking south, 1910-05   |
| Box 37, Item 46 | Map of Panama Canal, undated   |
| Box 37, Item 47 | 3300.1 Aerial view, undated  |
| Box 37, Item 48 | 3301 Canal Commission's Mount Hope store, the largest on the Isthmus, through which all supplies for the Isthmus are distributed, undated  |
| Box 37, Item 49 | 3301.1 Aerial view, undated  |
| Box 37, Item 50 | 3301.2 Culebra cut, Culebra, slide in West Bank near stream shovel row, shovel excavating about station 1781, 1911-01-27   |

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| Box 37, Item 51 | 3301.3 Operation of Pedro Miguel locks, dredging fleet entering west chamber, water at Miraflores Lake level looking north, 1913-10-24   |
| Box 37, Item 52 | 3302 Steam shovel at work in Bas Obispo cut, undated   |
| Box 37, Item 53 | 3302.2 Isthmian Canal Commission chart showing excavation and expenditures, 1904-05-1911-07-01   |
| Box 37, Item 54 | 3302.3 Photograph of aerial view of the Panama Canal, undated  |
| Box 37, Item 55 | 3303.2 Gatun upper locks west chamber looking north from Forebay showing west side approach wall, 1912-03-12   |
| Box 37, Item 56 | 3304.2 Gatun upper locks, west chamber, looking north from south end, showing construction of three sets of gates, 1912-03-12  |
| Box 37, Item 57 | 3304.3 Colon Hospital, undated   |
| Box 38, Item 1  | 3305 View of railway yard at Pedro Miguel, clearing house on Pacific side for trains with spoil from Culebra cut, undated  |
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| Box 38, Item 3  | 3306 Review of marines at Camp Elliot, band playing the Star Spangled Banner, undated  |
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| Box 38, Item 5  | 3306.3 Isthmian Canal Commission, undated  |
| Box 38, Item 6  | 3307 Track throwing machine on the Tabernilla dump, undated  |
| Box 38, Item 7  | 3307.1 Construction group photograph, undated  |
| Box 38, Item 8  | 3307.2 Mindi, excavation, view looking north from west bank, showing intersection of French and American canals, protection dyke partly open, admitting water into mindi cut, 1912-03-12 |
| Box 38, Item 9  | 3308 Excavation on the Culebra cut near Gold Hill, undated   |
| Box 38, Item 10 | 3308.1 Group photograph on small stone arched bridge, undated  |
| Box 38, Item 11 | 3308.3 Balboa terminals, general view looking north from Sosa Hill, showing foundry, lumber, and equipment shed and car shop in foreground, 1913-10-07                                   |
| Box 38, Item 12 | 3309 Steam shovels working on parallel benches on east side of Culebra cut, just south of Gold Hill, undated   |

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| Box 38, Item 13 | 3309.2 Gatun lower locks, east chamber, looking south from cofferdam, middle and upper locks in distance, 1912-01-31                                     |
| Box 38, Item 14 | 3310.2 Gatun upper locks, east chamber looking north, beginning construction of intermediate gates, 1912-01-31   |
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| Box 42, Item 10 | Construction view of lock, undated  |
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| Box 42, Item 12 | Canal boat entering lock, undated   |
| Box 42, Item 13 | 186.19 Little Falls, New York, undated  |
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| Box 42, Item 27 | 13A.8.611 Relief map, lower Colorado, All American Canal, undated                 |
| Box 42, Item 28 | 13A.8.612 Map, route, All American Canal, undated                                 |
| Box 42, Item 29 | 13A.8.613 Sand hill topography, All American Canal, undated                       |
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| Box 42, Item 32 | 11.8.6 Locks on Erie Canal, [New York] Colden, 1825                               |
| Box 42, Item 33 | 55809-F Rushing waters of the spillway, Gatun Dam, undated                        |
| Box 42, Item 34 | 163763 Completed Culebra, cut at empire, looking north, undated                   |
| Box 42, Item 35 | 163764 Cut at Empire (same view) but showing the canal filled with water, undated |
| Box 42, Item 36 | C449 Photograph of canal, undated   |
| Box 42, Item 37 | C450 Photograph of canal construction, undated                                    |
| Box 42, Item 38 | 8.41 Bridge on line of Middlesex Canal, West Medford, Wheelwright, undated        |

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| Box 42, Item 40 | 26A.18 Locks on the Calebruan Canal [Caledonian Canal?] at Fort Augustus, [Scotland], undated   |
| Box 42, Item 41 | 26.9 Corinth Canal, Antiquities at Athens, undated  |
| Box 42, Item 42 | 26.31 North Sea Canal, cities and canal of Holland, undated<br>Notes: North Sea Canal (Dutch: Noordzeekanaal) is a ship canal that connects Amsterdam to the North Sea at IJmuiden. |
| Box 42, Item 43 | 3300.2 Culebra Cut, Culebra, steam shovels working at elevation and seventy-three, looking east, 1912-01-27   |
| Box 42, Item 44 | 3303 View in Culebra Cut, undated   |
| Box 42, Item 45 | 3314.2 Steam shovel number 254, flooded by heavy rain in pioneer cut, Culebra, 1911-10-02   |
| Box 42, Item 46 | 3315.2 Photograph of men on a train car for cement, undated   |
| Box 42, Item 47 | 3316.2 Protecting sides of Culebra Cut, at foot of Contractor's Hill, by reinforced concrete facing, undated  |
| Box 42, Item 48 | 3317.2 Culebra Cut at Bas Obispo, looking north from relocation, 1911-06  |
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| Box 42, Item 54 | 3341 Map of canal zone, undated   |
| Box 42, Item 55 | 3342 View in Culebra Cut, looking south showing Gold Hill in the background, undated  |
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| Box 42, Item 57 | 3343.2 Panama Canal, undated  |
| Box 42, Item 58 | 3344.2 Panama Canal, undated  |
| Box 42, Item 59 | 3347.2 Panama Canal, undated  |
| Box 42, Item 60 | 3348.2 Panama Canal, undated  |

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| Box 42, Item 61 | 3399.1 Pedro Miguel locks, East Chamber showing outlet in east wall and construction of lower main gates and upper guard gates, looking north, 1912-01-25                     |
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| Box 43, Item 1  | Hotel "Washington" from sea, undated  |
| Box 43, Item 2  | 289 Culebra from Reservoir Hill, undated  |
| Box 43, Item 3  | Operating the Miraflores lock control board, Panama Canal, undated  |
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| Box 43, Item 6  | Photograph of sunset over ocean, undated  |
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| Box 43, Item 12 | 286A4 Ancon Baseball Park, United States Marines scaling a wall, athletic meet, 1912-07-04  |
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| Box 43, Item 16 | Photograph of equipment, undated  |
| Box 43, Item 17 | Form "B" induction motor with Solonoid brake, undated   |
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| Box 43, Item 19 | Gatun Locks, experimental towing of coal barge in lower lock at sea level, looking north, 1914-03-31  |
| Box 43, Item 20 | Photograph of boat in canal, undated  |
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| Box 43, Item 24 | Placing forms for lock walls, undated   |
| Box 43, Item 25 | Operation of Gatun Locks, S. S. Ancon in lower west chamber, lock filling, looking south from gate, 1914-06-11  |
| Box 43, Item 26 | Operation of Gatun Locks, ladder dredge "Corozal" and "C" class submarines dry-docked in Upper East Chamber, looking South, showing severn (tender) in Gatun Lake, 1914-04-08 |
| Box 43, Item 27 | Gatun lower locks, north approach wall, dredge grounded fifty five feet below sea level, looking northwest, 1913-06-14  |
| Box 43, Item 28 | Concrete work, upper Gatun Locks, looking south, 1910-02-01   |
| Box 43, Item 29 | Culebra Cut, undated  |
| Box 43, Item 30 | Gatun Spillway, Machinery in Operation Tunnel, 1913-09-15   |
| Box 43, Item 31 | Ancon Baseball Park, General View from Tivoli Hotel during Athletic Meet, 1912-07-04  |
| Box 43, Item 32 | Cartoon drawing, undated  |
| Box 43, Item 33 | Prisoners constructing road between Pedro Miguel and Miraflores, 1910-08  |
| Box 43, Item 34 | Relocation Panama Canal Railroad, The Quedrada Baja Bottom, Looking North, 1915-02-25   |
| Box 43, Item 35 | Four photographs of crane on railroad track, undated  |
| Box 43, Item 36 | Four photographs of railroad track, undated   |
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| Box 43, Item 38 | Culebra Cut, Culebra, looking north from West Bank, South of Contractors Hill, showing Cucaracha slide now involving 2,900,000 cubic yards. The Locomotives stand on the bottom of the canal., 1913-02-02 |
| Box 43, Item 39 | Culebra Cut, looking north, 1904-12   |
| Box 43, Item 40 | Balboa Terminals. Excavation for Dry-docks and Coal Pockets , Looking North, 1914-01-27   |
| Box 43, Item 41 | Photograph of Men in front of "Danger" Sign, undated  |
| Box 43, Item 42 | Blowing up Gamboa Dyke, View Looking North from Boat in Canal South of Dyke, 1913-10-10   |
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| Box 43, Item 44 | Gatun Lake, The Dying Jungle, Surface of Water 52 1/2 feet above Sea Level, 1912-12   |
| Box 43, Item 45 | Blowing up Gamboa Dyke, view from West Bank showing water rushing through opening immediately after blast, 1913-10-10   |
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| Box 43, Item 47 | Suspension Bridge Empire, undated   |
| Box 43, Item 48 | Culebra Cut Empire, looking north from suspension bridge, surface of water 70.7 feet above sea level, 1913-10-21  |
| Box 43, Item 49 | Culebra Cut, Cucaracha slide, looking north from West Bank, ladder dredge Corozal excavating in slide, 1913-12-09   |
| Box 43, Item 50 | Blasting Gamboa Dyke, undated   |
| Box 43, Item 51 | Gatun Lake, The Dying Jungle, surface of water 52 1/2 feet above mean sea level, 1912-12  |
| Box 43, Item 52 | Photograph of rushing water, undated  |
| Box 43, Item 53 | Hydro electric plant, undated   |
| Box 43, Item 54 | Gatun Spillway Dam, opening of Seven Gates, looking west from east abutment, 1913-12-30   |
| Box 43, Item 55 | Water entering Penstocks Spillway Gatun, undated  |

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| Box 43, Item 56 | Gatun Spillway Dam, opening of Seven Gates, view from bridge below, looking south, 1913-12-30  |
| Box 43, Item 57 | Transmission line, steel work completed on Tangent at Monte Lirio, looking north, 1914-02-07   |
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| Box 44, Item 1  | Concrete mixing plant, Gatun Locks, 1909-11  |
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| Box 44, Item 3  | Photograph of rushing water, undated   |
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| Box 44, Item 5  | Operation of Gatun Locks, first water entering upper locks below intermediate gates, West Chamber, looking north, 1913-09-26                                   |
| Box 44, Item 6  | Crane boat A. La Valley leaving Miraflores Lower Locks, first steam vessel to pass from ocean to ocean through Panama Canal, 1914-01-07                        |
| Box 44, Item 7  | View of the canal from Empire Bridge looking south, undated  |
| Box 44, Item 8  | North Avenue, Panama before paving, 1907-06  |
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| Box 44, Item 10 | Old French Locomotives near Empire Canal Zone, undated   |
| Box 44, Item 11 | Culebra Cut Bas Obispo, looking north from East Bank of canal, tug towing barge with material from Cucaracha slide, 1914-02-03                                 |
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| Box 44, Item 13 | Cross section near middle of Culebra Cut, undated  |
| Box 44, Item 14 | Cucaracha slide, undated   |
| Box 44, Item 15 | Operation of Miraflores Locks, S.S. Santa Clara leaving upper west chamber under tow of electric locomotives, looking north, 1914-06-19                        |
| Box 44, Item 16 | Lake between Miraflores and Pedro Miguel, undated  |
| Box 44, Item 17 | North Entracen Pedro Migue, undated  |

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| Box 44, Item 18 | Photograph of bridge, undated   |
| Box 44, Item 19 | Miraflores Lower Locks, 1913-05-11  |
| Box 44, Item 20 | Miraflores Lower Locks, Rising Stern Gate valve machinery chambers number 442 and number 443, west side wall, all anchor bolts set in concrete with bulkhead frame, guide rails, screw bearings and sub-base in place, 1913-07-18 |
| Box 44, Item 21 | French land excavator and bridge conveyor near Tabermilla, 160 feet gauge Length overall 225 feet, abandoned in 1888, 1911-11   |
| Box 44, Item 22 | Transmission System Gatun Substation, 1914-12-31  |
| Box 44, Item 23 | Circuit switches, undated   |
| Box 44, Item 24 | Gatun hydro electric station general view of galleries, 1914-07-27  |
| Box 44, Item 25 | Photograph of men standing on machinery, undated  |
| Box 44, Item 26 | View of hospital grounds from entrance Ancon, undated   |
| Box 44, Item 27 | Fort San Lorenzo, the entrance, 1912  |
| Box 44, Item 28 | Hospital grounds, nurses quarters colon, undated  |
| Box 44, Item 29 | Street in Cristobal, undated  |
| Box 44, Item 30 | Photograph of boat in canal, undated  |
| Box 44, Item 31 | Operation of Gatun Locks, class c submarines and severn (tender). Attaching cables from towing locomotives and warping into position to enter upper lock, 1914-04-14  |
| Box 44, Item 32 | Submarines, Gatun Locks, undated  |
| Box 44, Item 33 | Submarines in Gatun Locks, undated  |
| Box 44, Item 34 | Equipment into second, lock chamber, 1913-09-10   |
| Box 44, Item 35 | Towing locomotive about to ascend the incline leading to the top level of Gatun Locks, standing in the foreground are (left to right) Edward Schildhauer, L.T. Colonel W. M. Sibert, and C. W. Larson, undated                    |
| Box 44, Item 36 | Operation of Pedro Miguel Locks, lockage of eighty five foot piles rafted from Balboa to East Breakwater, Atlantic entrance, north from Control House, 1914-04-08   |



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| Box 44, Item 37 | Operation of Gatun Locks, United States "Severn" (tender) leaving upper east chamber in tow of electric locomotives, 1914-04-15                                       |
| Box 44, Item 38 | Safely anchored, 1913-09-26   |
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| Box 44, Item 40 | Photograph of boat towing in canal, undated   |
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| Box 44, Item 42 | 3375 Photograph of excavation, undated  |
| Box 44, Item 43 | Spillway Gatun, undated   |
| Box 44, Item 44 | Spillway Gatun, undated   |
| Box 44, Item 45 | Photograph of ship, undated   |
| Box 44, Item 46 | 3305.2 Mindi excavation looking north from West Bank, showing Atlantic entrance and intersection of American and French canals, protection dyke in center, 1912-03-05 |
| Box 44, Item 47 | 3306.2 Gatun Spillway, progress of construction of dam, looking east from West Bank, 1912-02-16   |
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| Box 44, Item 49 | Building lock walls, undated  |
| Box 44, Item 50 | Photograph of boat in canal, undated  |
| Box 44, Item 51 | Native shacks in the village, Taboga Island, undated  |
| Box 44, Item 52 | Culebra Cut, looking south from a point on West Bank south of Contractor's Hill, blasting rock in Cucaracha slide, 1913-10-10   |
| Box 44, Item 53 | Cucaracha slide, undated  |
| Box 44, Item 54 | Gatun Locks, experimental towing of coal barges, securing lines to barge and adjusting position, looking north, 1914-03-31  |
| Box 44, Item 55 | Gatun Locks, towing locomotives in position for making fast vessels, north approach walls, looking west, 1914-03-31   |
| Box 44, Item 56 | 3332.2 Panama Canal, undated  |

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| Box 44, Item 57 | 3384 Pedro Miguel Lock site, looking south, down to grade, 1908-06   |
| Box 44, Item 58 | 3398 Photograph of railway tunnel on pier, undated   |
| Box 44, Item 59 | 3399 Photograph of panoramic view, undated   |
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| Box 44, Item 61 | Panama Canal excavation, 1904  |
| Box 45, Item 1  | 3388.1 Photograph of rushing water, undated  |
| Box 45, Item 2  | 3324 View of section of railway yard at Las Cascadas. This is the clearing house, on the Atlantic side for the trains of spoil from the Culebra Cut, undated |
| Box 45, Item 3  | 3323 Rio Grande, negro quarters, undated   |
| Box 45, Item 4  | 3315 View of railway yard at Cristobal, undated  |
| Box 45, Item 5  | 3344.1 Sketch of building and locomotive, undated  |
| Box 45, Item 6  | 3372 Photograph of railroad tracks, undated  |
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### Subseries 1.10: Hydraulic Engineering, 1681-1927, undated

Scope and Contents: Images document subjects created by the division and are arranged as follows: subseries 1.10.1, Boston WWKS bridges; subseries 1.10.2, Boston WWKS conduits, culverts, pipes; subseries 1.10.3, Boston WWKS miscellaneous construction, 1894; subseries 1.10.4, miscellaneous hydraulic engineering, 1893; subseries 1.10.5, hydraulics penstocks and pipe; subseries 1.10.6, lighthouses; subseries 1.10.7, Lowell Water Works – Cons; subseries 1.10.8, Mississippi, river revetment; subseries 1.10.9, Newton Water Works, 1588-1917; subseries 1.10.10, pumping and pumping engines; subseries 1.10.11, sewers; and subseries 1.10.12, water supply.

#### Subseries 1.10.1: Boston Water Works (BWW) Bridges, undated

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| Box 45, Item 8  | 8.48 Echo Bridge Sudbury Aqueduct, undated |
| Box 45, Item 9  | 9.47 Echo Bridge Sudbury Aqueduct, undated |
| Box 45, Item 10 | 9.48 Echo Bridge Sudbury Aqueduct, undated |
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| Box 45, Item 12 | 9.50 Echo Bridge Sudbury Aqueduct, undated   |
| Box 45, Item 13 | 59.284 Sudbury River Conduit, Boston Water Works (BWW), view over top of Charles River, Echo Bridge, undated   |
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| Box 45, Item 17 | 59.289 Sudbury River Conduit, Boston Water Works (BWW), Needham looking east, undated  |
| Box 45, Item 18 | 59.290 Sudbury River Conduit, Boston Water Works (BWW), view of arch almost complete, from East bank of River looking down, undated  |
| Box 45, Item 19 | 59.291 Sudbury River Conduit, Boston Water Works (BWW), north side arch, 1876-08-17  |
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| Box 45, Item 21 | 59.294 Sudbury River Conduit, Boston Water Works (BWW), side of arch with brick work over head, undated  |
| Box 45, Item 22 | 59.295 Sudbury River Conduit, Boston Water Works (BWW), south hew of arches, undated   |
| Box 45, Item 23 | 59.298 Sudbury River Conduit, Boston Water Works (BWW), view from arches showing structure of bridge, undated  |
| Box 45, Item 24 | 59.299 Sudbury River Conduit, Boston Water Works (BWW), great arch and centering, undated  |
| Box 45, Item 25 | 59.302 Sudbury River Conduit, Boston Water Works (BWW), view of large center arch from East Bank of River, south side, undated   |
| Box 45, Item 26 | 59.306 Sudbury River Conduit, Boston Water Works (BWW), Echo Bridge for Needham, undated<br>Notes: Echo Bridge which carries the Sudbury Aqueduct and foot traffic spans the Charles River between Needham to Newton Upper Falls, Massachusetts, and Ellis Street in Newton. It is located in the Hemlock Gorge Reservation. |

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| Box 45, Item 27 | 59.307 Sudbury River Conduit, Boston Water Works (BWW), an arch in Charles River, undated                         |
| Box 45, Item 28 | 59.316 Sudbury River Conduit, Boston Water Works (BWW), looking East from top of Arch, undated                    |
| Box 45, Item 29 | 59.317 Sudbury River Conduit, Boston Water Works (BWW), arch looking west, undated                                |
| Box 45, Item 30 | 59.322 Sudbury River Conduit, Boston Water Works (BWW), arch Charles River, Echo Bridge, undated                  |
| Box 45, Item 31 | 59.332 Sudbury River Conduit, Boston Water Works (BWW), arches E & F Charles River Bridge, undated                |
| Box 45, Item 32 | 59.336 Sudbury River Conduit, Boston Water Works (BBW), sight of Echo Bridge, Needham, side looking west, undated |
| Box 45, Item 33 | 59.339 Echo Bridge lower support, undated   |
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| Box 45, Item 35 | 59.341 Echo Bridge, East Abutment of Lerge Arch, undated  |
| Box 45, Item 36 | 59.408 Boston Improved, view of discharge sewers, undated   |

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#### Subseries 1.10.2: Boston Water Works (BWW) Conduits, Culverts, Pipes, undated

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| Box 45, Item 40 | 59.285 Sudbury River Conduit, Boston Water Works (BWW), looking west, undated                       |
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| Box 45, Item 44  | 59.304 Sudbury River Conduit, Boston Water Works (BWW), view of masonry looking east, undated                    |
| Box 45, Item 45  | 59.321 Sudbury River Conduit, Boston Water Works (BWW), undated  |
| Box 45, Item 46  | 59.323 Sudbury River Conduit, Boston Water Works (BWW), view from top of bridge looking east, undated            |
| Box 45, Item 47  | 59.324 Sudbury River Conduit, Boston Water Works (BWW), Baltimore & Annapolis (B & A) Railroad crossing, undated |
| Box 45, Item 48  | 59.325 Sudbury River Conduit, Boston Water Works (BWW), Raceway Syphon, undated                                  |
| Box 45, Item 49  | 59.326 Sudbury River Conduit, Boston Water Works (BWW), undated  |
| Box 45, Item 50  | 59.327 Sudbury River Conduit, Boston Water Works (BWW), undated  |
| Box 45, Item 51  | 59.329 Sudbury River Conduit, Boston Water Works (BWW), Waste Weir, undated                                      |
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| Box 45, Item 53  | 59.401 Boston Improved Sewer Chamber, undated  |
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| Box 45, Item 55  | 59.275 Sudbury River Conduit, Boston Water Works (BWW), Fark Pond Gate Chamber, undated                          |
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| Box 45, Item 59  | 59.292 Sudbury River Conduit, Boston Water Works (BWW), center wall and puddling, undated                        |
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Box 45, Item 62      59.319 Sudbury River Conduit, Boston Water Works (BWW), center wall and embankment, undated

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Box 45, Item 64      59.337 Gate House, Boston Water Works (BWW), undated

Box 45, Item 65      59.404 Boston Improved Sewage Gate House, undated

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#### Subseries 1.10.4: Miscellaneous Hydraulic Engineering, 1893, undated

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Box 46, Item 4      T68 Diagram showing one full forward movement of stage, undated

Box 46, Item 5      C451 Photograph of ships and houses, undated

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Box 46, Item 11      5.1.1 Plan of Ostia and Porto, undated

Box 46, Item 12      5.7.6 Harbours of Claudius and Trajan at Ostia, undated

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Box 46, Item 15      6.1.1 Diver and equipment, Memich MS., undated

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## Subseries 1.10.5: Hydraulics Penstocks and Pipe, 1910-1927, undated

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| Box 46, Item 16 | Los Angeles Aqueduct, undated   |
| Box 46, Item 17 | 12.44 Flume, Kern Valley Power Development Works, California, undated   |
| Box 46, Item 18 | 26A.3 Irrigation work showing stone arches, undated   |
| Box 46, Item 19 | 27 Photograph of constructing pipe, 1910-08-25  |
| Box 46, Item 20 | 58.33 Power plant at Brusio, Switzerland showing Penstocks, generating House and Cable Tunnel, Tailrace Water discharge below the Cable Tunnel, undated |
| Box 46, Item 21 | 58.34 Wood State pipeline, 13 feet 6 inches diameter, Northwestern Electric Company, Portland, Oregon, White River Development, undated                 |
| Box 46, Item 22 | 58.35 Stand pipes on main pipe lines, White River Development, Puget Sound traction, Light and Power Company, Seattle, Washington, undated              |
| Box 46, Item 23 | 58.38 Views of the Antelope Siphon collapsed by vacuum and restored to form by water pressure, undated  |
| Box 46, Item 24 | 58.39 North end of Jawbone Siphon, undated  |
| Box 46, Item 25 | 58.40 South end of Soledad Siphon, undated  |
| Box 46, Item 26 | 58.92 Map of Catskill Mt. Croton and Ridgewood Water Supply Systems, 1927   |
| Box 46, Item 27 | 58.101 Comparative sections of aqueducts, 1927  |
| Box 46, Item 28 | 58.102 Narrows Siphon from Brooklyn to Staten Island, 1. dredger, 2. pipe laying screw and cradle support for 36" cast iron flexible jointed pipe, 1927 |
| Box 46, Item 29 | 58.103 City tunnel of Catskill Aqueduct at Madison Square, 1927   |
| Box 46, Item 30 | 58.104 Comparative sizes of Catskill Aqueduct and New York subway car, 1927   |
| Box 46, Item 31 | 58.121 Rjukan I Power Station, Norway, undated  |
| Box 46, Item 32 | 59.136 Fume Bear River, undated   |
| Box 46, Item 33 | 59.138 Flume South Side Bear River Canal (big land slide here), undated   |
| Box 46, Item 34 | 59.139 Aqueduct Jurupa Canal, Agua Mause Cal, undated   |
| Box 46, Item 35 | 59.200 Highline Canal, view of Bench Flume, undated   |
| Box 46, Item 36 | 59.238 Gage Canal Flume, side kill work, undated  |

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|-----------------|---|
| Box 46, Item 37 | C193 Tripling capacity of hydroelectric plant at Trenton Falls, New York, undated |
| Box 46, Item 38 | C194 Ferrum welded steel distributor pipe, undated                                |
| Box 46, Item 39 | T93 Photograph of wooden curved pipe construction, undated                        |
| Box 46, Item 40 | T94 Photograph of wooden pipe construction, undated                               |
| Box 46, Item 41 | T95 Photograph of wooden curved pipe construction, undated                        |
| Box 46, Item 42 | T97 Photograph of pipe, undated   |
| Box 46, Item 43 | T101 Photograph of men, undated   |
| Box 46, Item 44 | T102 Photograph of pipe, undated  |
| Box 46, Item 45 | T110 Photograph of Geyser, undated  |

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#### Subseries 1.10.6: Lighthouses, undated

|                 |   |
|-----------------|---|
| Box 46, Item 46 | 26.13 Cape Spartel Lighthouse, "The Western Orient:" Morocco, undated         |
| Box 46, Item 47 | 26A20 Longstone Lighthouse, Ferne Islands, The home of Grace Darling, undated |
| Box 46, Item 48 | 26A21 Eddystone Lighthouse, Cornwall, [England], undated                      |
| Box 46, Item 49 | T85 Progress in launching lower caisson of Beacon, undated                    |
| Box 46, Item 50 | T840 Details of Concrete Beacon Tower, Alexandria, Egypt Harbor, undated      |
| Box 46, Item 51 | Photograph of a man climbing the ladder of a lighthouse, undated              |
| Box 46, Item 52 | Photograph of a lighthouse, undated   |
| Box 46, Item 53 | Portland head light, oldest in New England, undated                           |
| Box 46, Item 54 | Sutro Grounds, San Francisco, California, undated                             |
| Box 46, Item 55 | South entrance of Eddystone Lighthouse, undated                               |

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#### Subseries 1.10.7: Lowell Water Works Cons, undated

|                |  |
|----------------|--|
| Box 47, Item 1 | Lowell Water Works, central shafts, undated        |
| Box 47, Item 2 | Lowell Water Works, engine and foundation, undated |



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|---|---|
| Box 47, Item 3  | 59.349 Lowell Water Works, West End Tunnel, undated                       |
| Box 47, Item 4  | 59.350 Lowell Water Works, Engine Home Foundation, undated                |
| Box 47, Item 5  | 59.351 Lowell Water Works, The New Canal, above Pawtucket Street, undated |
| Box 47, Item 6  | 59.353 Lowell Water Works, Engine Home Foundation, undated                |
| Box 47, Item 7  | 59.354 Lowell Water Works, Shaft B, undated                               |
| Box 47, Item 8  | 59.355 Lowell Water Works, Pipe Conduit, undated                          |
| Box 47, Item 9  | 59.356 Lowell Water Works, Brick Conduit Line, undated                    |
| Box 47, Item 10   | 59.357 Lowell Water Works, River Crossing, undated                        |
| Box 47, Item 11   | 59.358 Lowell Water Works, "Fullering" Gallery, undated                   |
| Box 47, Item 12   | 59.359 Lowell Water Works, Filtering Gallery, undated                     |
| Box 47, Item 13   | 59.360 Lowell Water Works, shafts E, end of tunnel, undated               |
| Box 47, Item 14   | 59.362 Lowell Water Works, river crossing, undated                        |
| Box 47, Item 15   | 59.364 Lowell Water Works, river crossing, undated                        |
| Box 47, Item 16   | 59.442 Photograph of materials on embankment near equipment, undated      |
| .....   |   |
| <b>Subseries 1.10.8: Mississippi, River Revetment, 1882-1891, undated</b> |   |
| Box 47, Item 17   | 568 Mississippi, River Revetment, undated                                 |
| Box 47, Item 18   | 571 Photograph of logs and brush in river, undated                        |
| Box 47, Item 19   | 572 Photograph of men standing on wooden structure over river, undated    |
| Box 47, Item 20   | 573 Photograph of construction over river, undated                        |
| Box 47, Item 21   | 574 Photograph of piers on river, undated                                 |
| Box 47, Item 22   | 575 Repairing Dike Mayersville, Chile, undated                            |
| Box 47, Item 23   | 576 Mayersville, Chile, undated   |
| Box 47, Item 24   | 577 Break in X dike, undated  |

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|-----------------|--|
| Box 47, Item 25 | 578 Hydraulic grader at ?, undated                             |
| Box 47, Item 26 | 579 Main dike and x dike, number three, low water, undated     |
| Box 47, Item 27 | 580 Cross dike, undated  |
| Box 47, Item 28 | 581 Main and x dike, number two, undated                       |
| Box 47, Item 29 | 582 Main dike and x dike, number two, undated                  |
| Box 47, Item 30 | 583 Main dike and x dike, number six, undated                  |
| Box 47, Item 31 | 584 Brush matter, lower bank, undated                          |
| Box 47, Item 32 | 585 Brush matters, ready is sink, undated                      |
| Box 47, Item 33 | 586 Hydro Grader, undated                                      |
| Box 47, Item 34 | 587 Upper bank per Mayersville, [Mississippi]?, undated        |
| Box 47, Item 35 | 588 Upper Bank Mayersville, [Mississippi]?, undated            |
| Box 47, Item 36 | 589 Cross dike, number 1, undated                              |
| Box 47, Item 37 | 590 Photograph of embankment, undated                          |
| Box 47, Item 38 | 592 Photograph of men working on embankment, undated           |
| Box 47, Item 39 | 593 Photograph of boat tethered to embankment, undated         |
| Box 47, Item 40 | 594 Photograph of men weaving mat, undated                     |
| Box 47, Item 41 | 595 Photograph of structure over river, undated                |
| Box 47, Item 42 | 597 Photograph of men raising a tree out of the water, undated |
| Box 47, Item 43 | 598 Evergreen Levee, undated                                   |
| Box 47, Item 44 | 599 Kempe's bend, undated                                      |
| Box 47, Item 45 | 600 Kemp Levee, undated  |
| Box 47, Item 46 | 611 Ballasting Mate, undated                                   |
| Box 47, Item 47 | 612 Banger mat ready and sink, 250" long, undated              |
| Box 47, Item 48 | 613 Weaving Hopeful Bend, undated                              |

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|-----------------|---|
| Box 47, Item 49 | 614 First stage, Upper Bank Revetment, undated                  |
| Box 47, Item 50 | 615 Showing all stages, Upper Bank Revetment, except ?, undated |
| Box 47, Item 51 | 616 Upper bank complete, except?, undated                       |
| Box 47, Item 52 | 618 Loud of Brush and Weaving Bange, undated                    |
| Box 47, Item 53 | 619 Hydraulic Grading, undated                                  |
| Box 47, Item 54 | 632 Mat Built afloat, undated                                   |
| Box 47, Item 55 | 633 Sinking drift with sand, undated                            |
| Box 47, Item 56 | 634 Dike number five, completed dam, undated                    |
| Box 47, Item 57 | 635 Constructing mat, undated                                   |
| Box 47, Item 58 | 636 Pocket carved out, undated                                  |
| Box 47, Item 59 | 637 Plumb Point, 1882-01-13                                     |
| Box 47, Item 60 | 638 Plumb Point, 1882-01-27                                     |
| Box 47, Item 61 | 639 Broken mat, undated   |
| Box 47, Item 62 | 640 View from ? boat, undated                                   |
| Box 47, Item 63 | 641 Broken mat, undated   |
| Box 47, Item 64 | 642 Broken mat, undated   |
| Box 47, Item 65 | 643 Mat broken by tree, undated                                 |
| Box 47, Item 66 | 644 Destroyed by flood, undated                                 |
| Box 47, Item 67 | 646 Unprotected bank caved, undated                             |
| Box 47, Item 68 | 647 Sand bar north of Memphis Harbor, 1891-10                   |
| Box 47, Item 69 | 648 View of river and embankment, undated                       |
| Box 48, Item 1  | 569 Photograph of C. R. Suter ship, undated                     |
| Box 48, Item 2  | 570 Photograph from above of piers on river, undated            |
| Box 48, Item 3  | 591 Photograph of boat next to embankment, undated              |

Box 48, Item 4            624 Sinking mat about half way down, undated

Box 48, Item 5            625 Sinking mat end, undated

Box 48, Item 6            626 Upper Bank Revetment, undated

Box 48, Item 7            627 Weaving connecting mat (front view), undated

Box 48, Item 8            628 Connecting mat ready to launch, undated

Box 48, Item 9            629 ? Section, undated

Box 48, Item 10           630 Finished Revetment, 1885-01

Box 48, Item 11           631 Building Fort Mat, undated

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#### Subseries 1.10.9: Newton Water Works, undated

Box 48, Item 12           59.343 Newton Water Works, Waban Hill, undated

Box 48, Item 13           59.345 Newton Water Works, Waban Hill Reservoir, undated

Box 48, Item 14           59.346 Newton Water Works, Reservoir Waban Hill, undated

Box 48, Item 15           59.347 Newton Water Works, Waban Vallery Bridge, undated

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#### Subseries 1.10.10: Pumping and Pumping Engines, 1581-1889, undated

Box 48, Item 16           Pumping engine compound, 1877

Box 48, Item 17           Machine Elevatoire Worthington Compound a Compensateurs, undated

Box 48, Item 18           Machine Elevatoire Worthington Compound a Cylindres Compensateurs, undated

Box 48, Item 19           Boston and St. Louis ? of Allis engines from ?, undated

Box 48, Item 20           Pumping Engine. Compound, 1877

Box 48, Item 21           Beam Engine Compund, undated

Box 48, Item 22           Compound Pumping Engine, 1889

Box 48, Item 23           The Great Machine at Marley, 1681

Box 48, Item 24           Image of a Machine Model, undated

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|-----------------|--|
| Box 48, Item 25 | Hope St Pumping Engine Providence, Water Works, undated  |
| Box 48, Item 26 | Photograph of machine with large wheel, undated  |
| Box 48, Item 27 | Reconstruction of the pump found at Silchester, undated  |
| Box 48, Item 28 | Photograph of a pipe found with Ancient Roman ceramics, undated  |
| Box 48, Item 29 | Photograph of Ancient Roman Pipe, undated  |
| Box 48, Item 30 | Lead pipes and Turncocks found in Ancient Rome with inscriptions giving names and Capacities, undated        |
| Box 48, Item 31 | Bulgarian deep well and horse trough, undated  |
| Box 48, Item 32 | Sakich, drawing of pump turned by cattle, undated  |
| Box 48, Item 33 | Remains of a pump found at Silchester, undated   |
| Box 48, Item 34 | Duty tests of triple expansion engines, undated  |
| Box 48, Item 35 | Plan showing the arrangement of the steam cylinders and pumps of the Corliss Engine at Hope Station, undated |
| Box 48, Item 36 | Horizontal Power Pump and ?, undated   |
| Box 48, Item 37 | Machine Elevatoire Worthington Compund a Compensateurs, undated  |
| Box 48, Item 38 | Pumps ? by Water which ?- Theatrum Machinarium, undated  |
| Box 48, Item 39 | Reynolds crew and company engine, undated  |
| Box 48, Item 40 | Sewage Pumping Engine "Boston Type", undated   |
| Box 48, Item 41 | Photograph model of a machine, undated   |
| Box 48, Item 42 | Sketch of a machine model, undated   |
| Box 48, Item 43 | Sketch showing principle of the air lift, undated  |
| Box 48, Item 44 | 6 Sketch model of a pump, undated  |
| Box 48, Item 45 | 9.8.3 The pump Notre Dame (1670), Paris, 1852  |
| Box 48, Item 46 | 9.8.8 A Tower Pump from Ramelli's "Dell Artificiose Machine," Paris, 1588                                    |
| Box 48, Item 47 | C121 Francis type impeller as used in large, low-head high speed pumps, undated                              |

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| Box 48, Item 48 | C125 Photograph of machinery, undated  |
| Box 48, Item 49 | C126 Two views of Morris pump testing room, undated  |
| Box 48, Item 50 | C128 14 inch double suction impeller centrifugal pump, undated   |
| Box 48, Item 51 | C129 Number 10, medium head, side suction centrifugal pump, direct connected with friction clutch to 15 horse power Fairbanks Morse type "y" oil engine, undated   |
| Box 48, Item 52 | C130 Three of the sxi inch, four stage high lift centrifugal pumps, installed at the Lake Shore Power Station of the Cleveland Electric Illuminating Company, conditions: capacity, each 650 gallons per minute, 300 pounds pressure, 2100 revolutions per minute, undated |
| Box 48, Item 53 | C131 Seven inch, five stage high lift direct drive Platt Centrifugal pump in the Ocean Coal Mine at Hermine, Pennsylvania, pumps of this type built to lift 2000 feet, undated   |
| Box 48, Item 54 | C132 Electrically driven automatic sump pump, undated  |
| Box 48, Item 55 | C134 Twenty inch steel lined dredging pump, direct connected four cylinder triple expansion engine, undated  |
| Box 48, Item 56 | C138 Single valve motion, with a "B" main valve, undated   |
| Box 48, Item 57 | C140 Cameron regular pattern piston pump, undated  |
| Box 48, Item 58 | C159 Photograph of a man standing next to a large machine, undated   |
| Box 48, Item 59 | CR3 Photograph of machinery, undated   |
| Box 48, Item 60 | CR4 Photograph of machinery, undated   |
| Box 48, Item 61 | CR5 Photograph of machinery, undated   |
| Box 49, Item 1  | C111 Photograph of machinery, undated  |
| Box 49, Item 2  | C112 Sectional view of "sv" pump, undated  |
| Box 49, Item 3  | C113 Double suction volute pump, motor driven, undated   |
| Box 49, Item 4  | C114 Section view of double volute pump, undated   |
| Box 49, Item 5  | C115 Photograph machinery, undated   |
| Box 49, Item 6  | C116 Photograph of machinery, undated  |

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| Box 49, Item 7  | C117 Impeller, undated  |
| Box 49, Item 8  | C118 Photograph of machinery, undated   |
| Box 49, Item 9  | C119 Cameron, undated   |
| Box 49, Item 10 | C120 Allis-Chalmers, undated  |
| Box 49, Item 11 | C122 Four seventy two inch drainage pumps are to be direct connected to Allis-Chalmers motors and will give a combined capacity of 1200 C. F. S. against fifteen foot head, undated |
| Box 49, Item 12 | C127 Type KTRD, patented, 1917-04-10  |
| Box 49, Item 13 | C137 Single valve motion, both "D" valves, undated  |
| Box 49, Item 14 | C141 Cameron, undated   |
| Box 49, Item 15 | C142 Photograph of machinery, undated   |
| Box 49, Item 16 | C143 Standard submerged piston pattern, undated   |
| Box 49, Item 17 | C144 Straight-way piston pattern, undated   |
| Box 49, Item 18 | C145 Model of a pump, undated   |
| Box 49, Item 19 | C146 Duplex plunger pattern pump with plunger and ring and duplex plunger pattern pump fitted with packed pistons, undated  |
| Box 49, Item 20 | C147 Details of duplex outside center packed plunger pump, undated  |
| Box 49, Item 21 | C148 Details of duplex valve pot outside end packed plunger pump, undated   |
| Box 49, Item 22 | C149 Valve components, undated  |
| Box 49, Item 23 | C150 Photograph of machinery, undated   |
| Box 49, Item 24 | C151 Photograph of machinery, undated   |
| Box 49, Item 25 | C152 Fairbanks-Morse machine, undated   |
| Box 49, Item 26 | C153 Fairbanks-Morse machine, undated   |
| Box 49, Item 27 | C154 Photograph of machinery, undated   |
| Box 49, Item 28 | C155 "Smith-Vaile" heavy pressure triplex power pump electric driven, undated   |

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| Box 49, Item 29 | m: C156 "Smith-Vaile" heavy pressure triplex pump mine installation, motor drive, undated                                  |
| Box 49, Item 30 | C157 Fairbanks-Morse machine, undated  |
| Box 49, Item 31 | C158 Pump direct connected to type "Y" oil engine, undated   |
| Box 49, Item 32 | C161 "Sierras" pattern sectionalized vertical plunger sinking pump type "svs", undated                                     |
| Box 49, Item 33 | C176 Standard improved pulsometer, undated   |
| Box 49, Item 34 | C177 Section through pumping chambers, section through discharge chamber, undated  |
| Box 49, Item 35 | C178 Pulsometer in foundation work, Bamberger Building, Newark, New Jersey, George A. Fuller Company, contractors, undated |
| Box 49, Item 36 | 179 Photograph of plunger, undated   |
| Box 49, Item 37 | C180 Photograph of machinery, undated  |
| Box 49, Item 38 | C181 Method of piping wells, undated   |
| Box 49, Item 39 | 182 Typical arrangement of air lift pump and booster, undated  |
| Box 49, Item 40 | 183 Diagram of air lift, operated by a steam driven straight line air compressor, undated                                  |
| Box 49, Item 41 | C184 Air lift for irrigation purposes at a Rice Plantation, Trilby, Louisiana, undated                                     |
| Box 49, Item 42 | C185 Savannah, Georgia, Water Works "River" Plant, undated   |

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#### Subseries 1.10.11: Sewers, undated

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|-----------------|--|
| Box 49, Item 43 | 59.402 Outlet Morm Island sewer, undated |
| Box 49, Item 44 | Cloaca Maxima Rome, Italy, undated       |
| Box 49, Item 45 | Rome Cloaca Maxima, The Outlet, undated  |

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#### Subseries 1.10.12: Water Supply, 1842, undated

|                 |  |
|-----------------|--|
| Box 49, Item 46 | Over 500,000 gallons daily was wasting into the sewer from the leak, no indication on the surface, undated |
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| Box 49, Item 47 | Photograph of a channel being filled with gravel, undated  |
| Box 49, Item 48 | Eiserne Schwimm dock fur die Kaiserliche Werft zu Wilhelmshaver [Iron floating dock for the Imperial Shipyard in Wilhelmshaver], undated |
| Box 49, Item 49 | 2.7.42 Vaulted drains Khorsabad [northern Iraq], undated   |
| Box 49, Item 50 | 4.5.4 Greek water supply ? at Samos  |
| Box 49, Item 51 | 5.733 One of the Sevena Springs, sources of Marcia, undated  |
| Box 49, Item 52 | 5.8.3 Garden Fountaon at Pompeii, undated  |
| Box 49, Item 53 | 5.8.3 Bronze bathtub, water cooler and 6" plug cock, Naples Museum, Italy, undated   |
| Box 49, Item 54 | 5.8.3 Model of Piscona or Sand Catch in Magazzino Archeologico, Rome, Italy, undated   |
| Box 49, Item 55 | 5.8.3 Roman water pipe, bored out blocks of stone, undated   |
| Box 49, Item 56 | 5.8.3 Sand and pebble catch tanks near Tivoli (Piscina), undated   |
| Box 49, Item 57 | 5.8.3 Lead and terra cotta pipe at Rome, Italy, undated  |
| Box 49, Item 58 | 5.9.1 Street fountain and watering trough in Pompeii, undated  |
| Box 49, Item 59 | 11.7.5 Croton Reservoir lithograph, 42nd Street and 5th Avenue, 1842   |
| Box 50, Item 1  | C162 Diagram, undated  |
| Box 50, Item 2  | C163 Photograph of machinery, undated  |
| Box 50, Item 3  | C164 Siplex water meter glass cover and metal cover, undated   |
| Box 50, Item 4  | C165 Simplex meter register for use with pitot tubes, undated  |
| Box 50, Item 5  | C166 Diagram, undated  |
| Box 50, Item 6  | C167 Five simplex pitot tube meters, measuring the total distribution to the city of Newark, New Jersey, undated                         |
| Box 50, Item 7  | C168 Pitometer in use on thirteen feet Penstock of hydro electric plant for testing turbines, undated                                    |
| Box 50, Item 8  | C169 Break in three inch main in Ottawa detected by the Pitometer survey, undated  |

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**Subseries 1.11: Machine Tools, 1896-1902, undated**

Scope and Contents: See list of lantern slides

|                 |  |
|-----------------|--|
| Box 50, Item 9  | Great English tool maker, undated  |
| Box 50, Item 10 | Photograph of machinery, undated   |
| Box 50, Item 11 | 125 ton steam hammer, scrapped by Bethlehem Steel Company in favor of the 14,000 ton forging press shown on the opposite page, 1901-01 |
| Box 50, Item 12 | Tourneur, support composes, undated  |
| Box 50, Item 13 | Photograph portrait of a man, undated  |
| Box 50, Item 14 | Photograph of machinery, undated   |
| Box 50, Item 15 | 44 Photograph of two men building a small scale model, undated   |
| Box 50, Item 16 | Mr. Joseph Clements planing machine, undated   |
| Box 50, Item 17 | The Revolution in Machine Shop Practice, photocopies, undated  |
| Box 50, Item 18 | Photograph of The Bath Universal Grinder, undated  |
| Box 50, Item 19 | Section of the foundry showing electric crane tracks and crane, undated  |
| Box 50, Item 20 | Engineering Magazine, photocopy, undated   |
| Box 50, Item 21 | Sweeping a mold for a heavy flywheel, Fraser and Chalmers Foundry, Chicago, Illinois, undated  |
| Box 50, Item 22 | Jib crane lifting cope onto heavy swept mold, General Electric Company Foundry, undated  |
| Box 50, Item 23 | Photograph of machinery, undated   |
| Box 50, Item 24 | Photograph of screw components, undated  |
| Box 50, Item 25 | Products of the automatic screw machine, undated   |
| Box 50, Item 26 | Photograph of machinery, undated   |
| Box 50, Item 27 | Warner and Swasey, Cleveland, Ohio, specimen of work done on forming monitor, undated  |
| Box 50, Item 28 | Warner and Swasey, Cleveland, Ohio, four spindle valve milling machine, undated  |

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| Box 50, Item 29 | Warner and Swasey, Cleveland, Ohio, revolving jaw chuck and box chuck, undated   |
| Box 50, Item 30 | Warner and Swasey, Cleveland, Ohio, globe valve tools, undated   |
| Box 50, Item 31 | The pattern is a vertical hook M. C. B. standard draw bar, undated   |
| Box 50, Item 32 | Duplex machine, undated  |
| Box 50, Item 33 | Warner and Swasey, Cleveland, Ohio, forming monitor, undated   |
| Box 50, Item 34 | Standard sixteen inch sing machine fitted with brake shoes, two in a flask, Tabor Manufacturing Company, New York, undated |
| Box 50, Item 35 | Warner and Swasey, Cleveland, Ohio, screw machine turret, with tools, undated  |
| Box 50, Item 36 | Key Seat Milling Machines, Newton Machine Tool Works, undated  |
| Box 50, Item 37 | Engineering Magazine, photocopy, undated   |
| Box 50, Item 38 | Engineering Magazine, photocopy, undated   |
| Box 50, Item 39 | Bath universal grinder, from photograph, undated   |
| Box 50, Item 40 | Bath universal grinder, from photograph, undated   |
| Box 50, Item 41 | Bath universal grinder, from photograph, undated   |
| Box 50, Item 42 | Bath universal grinder, from photograph, undated   |
| Box 50, Item 43 | Bath universal grinder, from photograph, undated   |
| Box 50, Item 44 | Bath universal grinder, from photograph, undated   |
| Box 50, Item 45 | Bath universal grinder, from photograph, undated   |
| Box 50, Item 46 | Bath universal grinder, from photograph, undated   |
| Box 50, Item 47 | Bath universal grinder, from photograph, undated   |
| Box 50, Item 48 | Bath universal grinder, from photograph, undated   |
| Box 50, Item 49 | Bath universal grinder, from photograph, undated   |
| Box 50, Item 50 | Bath universal grinder, from photograph, undated   |
| Box 50, Item 51 | Bath universal grinder, from photograph, undated   |

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| Box 50, Item 52 | Bath universal grinder, from photograph, undated  |
| Box 50, Item 53 | Bath universal grinder, from photograph, undated  |
| Box 50, Item 54 | Bath universal grinder, from photograph, undated  |
| Box 50, Item 55 | Bath universal grinder, from photograph, undated  |
| Box 50, Item 56 | Bath universal grinder, from photograph, undated  |
| Box 50, Item 57 | Bath universal grinder, from photograph, undated  |
| Box 50, Item 58 | Bath universal grinder, from photograph, undated  |
| Box 50, Item 59 | Boyer piston air drill, undated   |
| Box 50, Item 60 | Pneumatic Drill, Chicago Pneumatic Tool Company, Chicago, Illinois, undated   |
| Box 50, Item 61 | Ordinary drill, Baird Machinery Company, Pittsburg, Pennsylvania and radial drill, undated                                    |
| Box 50, Item 62 | Whitelaw reversible drill, undated  |
| Box 50, Item 63 | Rotary planer, Niles Bement Pond Company, New York, undated   |
| Box 50, Item 64 | Bath universal grinder, from photograph, undated  |
| Box 50, Item 65 | Catalogue, Warner and Swasey, Cleveland, Ohio, undated  |
| Box 50, Item 66 | Engineering Magazine, large double turret automatic screw machine, 1899-11  |
| Box 50, Item 67 | Catalogue, Warner and Swasey, Cleveland, Ohio, revolving jaw chuck and box chuck, undated                                     |
| Box 50, Item 68 | Catalogue, W. W. Sellers and Company, Philadelphia, Pennsylvania, universal tool grinding and shaping machine, 1901-01        |
| Box 50, Item 69 | Catalogue, W. W. Sellers and Company, Philadelphia, Pennsylvania, universal tool grinding and shaping machine, 1901-01        |
| Box 50, Item 70 | Engineering Magazine, Triple Boring Machine for Cylinders of Vauclain Compound Locomotives, Baldwin Locomotive Works, 1900-01 |
| Box 50, Item 71 | Bath Universal Grinder, from photograph, undated  |
| Box 51, Item 1  | Catalogue, Tabor Manufacturing Company, Elizabeth, New Jersey, undated  |

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| Box 51, Item 2  | Catalogue, Warner and Swasey, Cleveland, Ohio, screw machine turret, undated  |
| Box 51, Item 3  | Catalogue, Jones and Lamsom Machine Company, flat turret lathe, undated   |
| Box 51, Item 4  | Catalogue, Warner and Swasey, Cleveland, Ohio, forming monitor, undated   |
| Box 51, Item 5  | Engineering Magazine, two views of sellers locomotive driving box surfacing machine, Baldwin Locomotive Works, Philadelphia, Pennsylvania, 1896-07        |
| Box 51, Item 6  | Machinery, 1902-02  |
| Box 51, Item 7  | Catalogue, Jones and Lamsom Machine Company, Springfield, Vermont, undated  |
| Box 51, Item 8  | Catalogue, Jones and Lamsom Machine Company, Springfield, Vermont, undated  |
| Box 51, Item 9  | Catalogue, Jones and Lamsom Machine Company, Springfield, Vermont, automatic die and 1 1/4 inch chasers, undated  |
| Box 51, Item 10 | Catalogue, Cleveland Machine Screw Company, Cleveland, Ohio, undated  |
| Box 51, Item 11 | Catalogue, Jones and Lamsom Machine Company, automatic chuck, undated   |
| Box 51, Item 12 | Bath universal grinder, from photograph, undated  |
| Box 51, Item 13 | Catalogue, Tabor Manufacturing Company, Elizabeth, New Jersey, undated  |
| Box 51, Item 14 | Bath universal grinder, from photograph, undated  |
| Box 51, Item 15 | Engineering Magazine, Niles Tools Works Heavy Turret Machine; Newton Special Double Milling Machine, for Finishing Ends of Pipe Stands to Length, 1896-07 |
| Box 51, Item 16 | Engineering Magazine, Special Breech Cover Hinge Milling Machine, Watervliet Arsenal, 1896-07   |
| Box 51, Item 17 | Catalogue Jones and Lamson Machine Company, Springfield, Vermont; The Flat Turret Lathe, undated  |
| Box 51, Item 18 | Catalogue Cleveland Machine Screw Company, Cleveland, Ohio, undated   |
| Box 51, Item 19 | The Engineering Magazine, 1899-11   |
| Box 51, Item 20 | Catalogue Warner and Swasey, Cleveland, Ohio: Specimens of Work Done on Forming Monitor, undated  |
| Box 51, Item 21 | Photograph of a manufacturing warehouse, undated  |
| Box 51, Item 22 | Fast chipping with pneumatic tool, undated  |

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| Box 51, Item 23 | Photocopy of American Machinist, undated  |
| Box 51, Item 24 | Drilling Machine and Planing Machine by James Nasmyth, undated                                  |
| Box 51, Item 25 | Old bench lathe built by Henry Maudslay, undated  |
| Box 51, Item 26 | Phoenix Iron Works, George S. Lincoln and Company, Hartford, Connecticut, engine lathe, undated |
| Box 51, Item 27 | Phoenix Iron Works, George S. Lincoln and Company, Hartford, Connecticut, engine lathe, undated |
| Box 51, Item 28 | Photocopy of Thinking in Blows, undated   |
| Box 51, Item 29 | Photocopy of Sir Mark Isambard Brunel, undated  |
| Box 51, Item 30 | Photocopy of American Machinist, undated  |
| Box 51, Item 31 | Christopher Miner Spencer and early screw machine, undated                                      |
| Box 51, Item 32 | Apparatus for Enablint the machine to execute segmented work, undated                           |
| Box 51, Item 33 | Photograph a portrait of a man, undated   |
| Box 51, Item 34 | Photograph of a workspace, undated  |
| Box 51, Item 35 | Portrait of a man and a large double turret automatic screw machine, undated                    |

### Subseries 1.12: Materials Handling, 1826-1930, undated

Scope and Contents: Materials arranged in subjects created by the division and include: subseries 1.12.1, Baltimore & Ohio (B & O) Coal Unloading Machinery from Baltimore & Ohio (B & O) Railroad; subseries 1.12.2, construction machinery; subseries 1.12.3, digging and excavation; and subseries 1.12.4, dockside freight handling equipment; subseries 1.12.5: dredging, subseries 1.12.6, miscellaneous materials Handling; subseries 1.12.7, piling; subseries 1.12.8, air compressors, blowers, and blowing engines; subseries 1.12.9, gas producers; subseries 1.12.10, internal combustion; subseries 1.12.11, marine engines; subseries 1.12.12, power plants; and subseries 1.12.13, refrigeration.

#### Subseries 1.12.1: Baltimore & Ohio (B & O) Coal Unloading Machinery from Baltimore & Ohio (B & O) Railroad, undated

|                 |   |
|-----------------|---|
| Box 51, Item 36 | Photograph of unloading equipment, undated              |
| Box 51, Item 37 | Photograph of unloading equipment, undated              |
| Box 51, Item 38 | Photograph of boat next to unloading equipment, undated |

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| Box 51, Item 39 | Photograph of conveyor belt of unloading equipment, undated   |
| Box 51, Item 40 | 2 Stuart system of ground storage general explanatory drawing showing automatic stacking, reclaiming and loading devices, undated   |
| Box 51, Item 41 | 4 Stuart system of ground storage showing automatic stacking, reclaiming and loading devices at mine, undated   |
| Box 51, Item 42 | 5 Stuart system of ground storage showing automatic stacking, reclaiming and loading devices from boats at docks, undated   |
| Box 51, Item 43 | 6 Stuart System of ground storage arrangement for receiving coal by water and rail, and provision for reloading to vessels, barge or cars and to bins for truck or wagon loading, undated |
| Box 51, Item 44 | 9 Stuart system of ground storage showing automatic stacking, reclaiming and loading devices at terminals, undated  |
| Box 51, Item 45 | 12 International Conveyor Corporation, undated  |
| Box 51, Item 46 | 15 McLean Contracting Company, Baltimore, Maryland, undated   |
| Box 51, Item 47 | 16 Photograph of construction over water, undated   |
| Box 51, Item 48 | 17 Photograph of construction, undated  |
| Box 51, Item 49 | 18 Photograph of construction, undated  |
| Box 51, Item 50 | 19 Photograph of construction, undated  |
| Box 51, Item 51 | 20 Photograph of construction, undated  |
| Box 51, Item 52 | 21 Photograph of construction, undated  |
| Box 51, Item 53 | 22 Photograph of construction, undated  |
| Box 51, Item 54 | 23 Photograph of conveyor belt, undated   |
| Box 51, Item 55 | 24 Photograph of a train yard, undated  |
| Box 51, Item 56 | 25 Photograph of an unloading site, undated   |
| Box 51, Item 57 | 26 Photograph of train car filled with aggregate, undated   |
| Box 51, Item 58 | 27 Photograph of unloading site equipment, undated  |
| Box 51, Item 59 | 28 Photograph of unloading site conveyor belt, undated  |

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| Box 51, Item 60 | 29 Photograph of unloading site conveyor belt, undated          |
| Box 51, Item 61 | 30 Photograph of boat next to unloading equipment, undated      |
| Box 51, Item 62 | 31 Photograph of unloading equipment, undated                   |
| Box 51, Item 63 | 32 Photograph of unloading equipment pouring aggregate, undated |

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### Subseries 1.12.2: Construction Machinery, undated

|                 |  |
|-----------------|--|
| Box 52, Item 1  | 5 Photograph of men standing next to crane and machinery, undated  |
| Box 52, Item 2  | 6 Photograph of the construction of bleachers, undated   |
| Box 52, Item 3  | 10 Photograph of train cars, undated   |
| Box 52, Item 4  | C171 Hydraulic nozzle removing each at San Paulo, Brazil, undated  |
| Box 52, Item 5  | C172 Open cut five weeks after operations began removing each with hydraulic Giants, San Paulo, Brazil, undated  |
| Box 52, Item 6  | C172 Pipe line at the completion of the work showing the filling brought up to the level of the pipe C172 Pipe line at the completion of the work showing the filling b, San Paulo, Brazil, undated<br>ipe, San Paulo, Brazil, undated |
| Box 52, Item 7  | C175 Four inch hydraulic giant fed by a ten inch branch from the sixteen inch spiral riveted trunk line, all equipped with forged steel flanges. Salt lick reservoir, Johnstown Water Company, Johnstown, Pennsylvania, undated        |
| Box 52, Item 8  | C272 Photograph of Avery tractor towing plow, undated  |
| Box 52, Item 9  | C273 Photograph of Avery tractor towing plow, undated  |
| Box 52, Item 10 | C275 Photograph of the Adams Road maintainer smoothing out the road, undated   |
| Box 52, Item 11 | C276 Standard winner, showing side view and back of blade, undated   |
| Box 52, Item 12 | C277 Photograph of road machinery, undated   |
| Box 52, Item 13 | C280 Diagrams showing the use of the road machine, undated   |
| Box 52, Item 14 | C283 Photograph of man using road machinery to smooth the road, undated  |
| Box 52, Item 15 | C286 Photograph of train car with excavation crane attached, undated   |



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| Box 52, Item 16 | C287 Photograph of train car with excavation crane attachment releasing aggregate, undated                        |
| Box 52, Item 17 | C289 Photograph of boat with crane attached, undated  |
| Box 52, Item 18 | C293 Photograph of men digging, undated   |
| Box 52, Item 19 | C294 Image of Jaeger 4-H from Jaeger Machine Company, Columbus, Ohio, undated                                     |
| Box 52, Item 20 | C295 Images of multi foot pavers, 21 E Stea, multi foot with Boom and 14E gasoline multi foot with chute, undated |
| Box 52, Item 21 | C296 Photograph of construction site from above, undated  |
| Box 52, Item 22 | C297 Photograph of train cars hauling timber, undated   |
| Box 52, Item 23 | C298 Photograph of construction site from above, undated  |
| Box 52, Item 24 | C299 Photograph of construction cranes, undated   |
| Box 52, Item 25 | C300 Photograph of crane with wires attached, undated   |
| Box 52, Item 26 | C301 Photograph of construction site with cranes, undated   |
| Box 52, Item 27 | C302 Photograph of construction site with cranes, undated   |
| Box 52, Item 28 | C303 Photograph of construction site, undated   |
| Box 52, Item 29 | C304 Ferro Concrete Construction Company, Cincinnati, Ohio, undated   |
| Box 52, Item 30 | 308 Austin Manufacturing Company, Chicago, Illinois, undated  |
| Box 52, Item 31 | C312 Western Wheeled Scraper Company, Aurora, Illinois, revolving screen, undated                                 |
| Box 52, Item 32 | C313 Photograph of revolving screen affixed to a machine, undated   |
| Box 52, Item 33 | Dumping stone in a layer from a moving truck, undated, undated  |
| Box 52, Item 34 | C315 Levelling off the road by use of hand and template, undated  |
| Box 52, Item 35 | C318 Rolling the wearing course, undated  |
| Box 52, Item 36 | C320 Rolling the three-quarter inch stone into the first coat of Tarvia, undated                                  |
| Box 52, Item 37 | C321 Rolling the road to finish, undated  |

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| Box 52, Item 38 | C339 Photograph of smoothing the road, undated  |
| Box 52, Item 39 | C340 Lakewood: Built to Last, bulletin number 29-D, undated   |
| Box 52, Item 40 | C468 Photograph of machinery, undated   |
| Box 52, Item 41 | C470 Photograph of machinery, undated   |
| Box 52, Item 42 | C471 Type "N," Cement Cun Company, undated  |
| Box 52, Item 43 | C472 Diagram of machine components, undated   |
| Box 52, Item 44 | C549 Central Mixing Inundation Plant, undated   |
| Box 52, Item 45 | C586 Central Mixing Inundation Plant, Louisville Hydro Electric Company, supervision Byllesby Engineering and Management Corporation, undated |
| Box 52, Item 46 | C587 "Weigh as you Load", undated   |
| Box 52, Item 47 | C588 Blaw Knox Duplex Weighing Batcher, 6,000 pound capacity, undated   |
| Box 52, Item 48 | C589 Blaw-Knox Weighing Batcher, 4,000 pound capacity, undated  |
| Box 52, Item 49 | C714 Photograph of excavation on a hillside, undated  |
| Box 52, Item 50 | C743 Dragging gravel surface to keep it in good condition, undated  |
| Box 52, Item 51 | C758 Photograph of an unloading site, undated   |
| Box 52, Item 52 | C765 Photograph of smoothing the road, undated  |
| Box 52, Item 53 | C766 Photograph of unloading aggregate into truck, undated  |
| Box 52, Item 54 | C767 Photograph of smoothing the road, undated  |
| Box 52, Item 55 | C768 Photograph of smoothing the road and vehicles behind, undated  |
| Box 52, Item 56 | C769 Photograph of smoothing the road, undated  |
| Box 52, Item 57 | C790 Photograph of machinery, undated   |
| Box 52, Item 58 | C793 Photograph of men standing by to break large rocks into gravel for the road, undated   |
| Box 52, Item 59 | T159 Photograph of smoothing the road, undated  |
| Box 53, Item 1  | Photograph of machinery used for road maintenance, undated  |

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| Box 53, Item 2  | C310 Western Wheeled Scrapper Company, Aurora, Illinois, undated                              |
| Box 53, Item 3  | C311 Austin Manufacturing Company, Chicago, Illinois, number 10, undated                      |
| Box 53, Item 4  | C727 Photograph of smoothing the road, undated  |
| Box 53, Item 5  | C728 Photograph of multiple vehicles smoothing the road, undated                              |
| Box 53, Item 6  | C729 Photograph of smoothing the road, undated  |
| Box 53, Item 7  | C732 Photograph of smoothing the road, undated  |
| Box 53, Item 8  | C734 Photograph of a man kneeling at the back of a truck, undated                             |
| Box 53, Item 9  | C736 Plowing sand clay in the pit, undated  |
| Box 53, Item 10 | C738 Loading chert gravel from partially submerged pit in a river valley, undated             |
| Box 53, Item 11 | C739 Loading gravel from a dry bank with a steam shovel, undated                              |
| Box 53, Item 12 | C745 Truck supply should be sufficient to avoid delay in loading topsoil, undated             |
| Box 53, Item 13 | C746 Topsoil is dumped on one side of subgrade so as not to interfere with traffic, undated   |
| Box 53, Item 14 | C747 Scarifying through the topsoil to bond it with the subgrade, undated                     |
| Box 53, Item 15 | C750 Photograph of smoothing the road, undated  |
| Box 53, Item 16 | C752 Photograph of smoothing the road, undated  |
| Box 53, Item 17 | C754 Photograph of loading a truck onto a platform, undated                                   |
| Box 53, Item 18 | C757 Photograph of two men moving aggregate around in the vehicle smoothing the road, undated |
| Box 53, Item 19 | C772 Photograph of men unloading aggregate to smooth the road, undated                        |
| Box 53, Item 20 | C773 Distributing the seal coat, undated  |
| Box 53, Item 21 | C774 Rolling the Crushed Slag into the Seal Coat, undated                                     |
| Box 53, Item 22 | C775 Blading the crushed slag uniformly over the seal coat, undated                           |
| Box 53, Item 23 | C809 Photograph of smoothing the road, undated  |
| Box 53, Item 24 | C812 Biehl creepe dump wagon, Reading, Pennsylvania, undated                                  |

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| Box 53, Item 25 | C814 Municipal Construction Company, undated                            |
| Box 53, Item 26 | C815 Photograph of vehicle moving aggregate, undated                    |
| Box 53, Item 27 | C817 Erie Steam Shovel Company, loading aggregate into a truck, undated |
| Box 53, Item 28 | T98 Photograph of a structure on an embankment, undated                 |

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### Subseries 1.12.3: Digging and Excavation, undated

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| Box 53, Item 29 | [French?], undated   |
| Box 53, Item 30 | Photograph of loading aggregate into train cars, undated                                       |
| Box 53, Item 31 | Photograph of large machinery unloading aggregate into a pile, undated                         |
| Box 53, Item 32 | Photograph, close up view of aggregate processing machinery conveyor belt, undated             |
| Box 53, Item 33 | Loading ore with ninety five ton steam shovel, undated   |
| Box 53, Item 34 | Steam shovel in Hull Rust Mine, Hibbing, Minnesota, undated                                    |
| Box 53, Item 35 | Loading ore with three hundred ton steam shovel at Hull Rust Mine, Hibbing, Minnesota, undated |

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### Subseries 1.12.4: Dockside Freight Handling Equipment, undated

|                 |   |
|-----------------|---|
| Box 53, Item 36 | Saint-Nazaire, Chantiers de l'Atlantique, Le Nouvelie Gru de 150 Tonnes, [Saint-Nazaire, Chantiers de l'Atlantique, Le Nouvelie Gru de 150 Tons], the Atlantic docks yard, the new crane of 150 tons, undated |
| Box 53, Item 37 | Cleveland and Pittsburg ore docks, Cleveland, undated   |
| Box 53, Item 38 | Erie, Pennsylvania, Hanna's Ore Plant, undated  |
| Box 53, Item 39 | Lowering a five ton electric clam into hold of Lake Steamer, Cleveland, Ohio, undated   |
| Box 53, Item 40 | Electric unloader lifting five tons to docks, Cleveland, Ohio, undated  |
| Box 53, Item 41 | Lowering clam of hydraulic ore unloader into ship's hold for a ten ton load, Cleveland, Ohio, undated   |
| Box 53, Item 42 | 5804 Photograph of ship in port, undated  |

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| Box 53, Item 43 | 5808 Photograph of cranes next to platform, undated                  |
| Box 53, Item 44 | 5812 Photograph of cranes, undated                                   |
| Box 53, Item 45 | 5813 Photograph of cranes and ship in dock, undated                  |
| Box 53, Item 46 | 5817 Photograph of cranes, undated                                   |
| Box 53, Item 47 | 5818 Photograph of Ship Evviva, undated                              |
| Box 53, Item 48 | 5819 Photograph of crane over ship in port, undated                  |
| Box 53, Item 49 | 5822 Photograph of crane over ship in port, undated                  |
| Box 53, Item 50 | 5823 Photograph of crane on platform in port, undated                |
| Box 53, Item 51 | 5827 Photograph of crane over ship in port, undated                  |
| Box 53, Item 52 | 5828 Photograph of portside cranes, undated                          |
| Box 53, Item 53 | 5831 Photograph of men with palettes of goods, undated               |
| Box 53, Item 54 | 5832 Photograph of crane over ship in port, undated                  |
| Box 53, Item 55 | 7251 Photograph from above of port platform, undated                 |
| Box 53, Item 56 | 7252 Photograph from above of ships in port and city behind, undated |
| Box 53, Item 57 | 7257 Photograph of port, undated                                     |
| Box 53, Item 58 | 7260 Photograph of port and freight doors and crane, undated         |
| Box 53, Item 59 | 7262 Photograph from above of ships in port and city behind, undated |
| Box 53, Item 60 | 7263 Photograph of port and cranes, undated                          |
| Box 53, Item 61 | 7267 Photograph of ship William A. McGonagle, undated                |
| Box 53, Item 62 | 7305 Photograph of cranes, undated                                   |
| Box 53, Item 63 | 7306 Photograph of crane carrying goods, undated                     |

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#### Subseries 1.12.5: Dredging, 1920, undated

Box 54, Item 1            H90 Photograph of excavated materials from dredging, undated

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|----------------|---|
| Box 54, Item 2 | Man power dredge from Belidor [Bernard Forest de] Architecture Hydraulique [Hydraulic], undated                 |
| Box 54, Item 3 | C133 Another twenty inch dredge, undated  |
| Box 54, Item 4 | C135 Pipe line Dredge "Pontchartrain" built for the Jahncke Navigation Company, New Orleans, Louisiana, undated |
| Box 54, Item 5 | C136 Spoil bank, principally stones, delivered by twenty inch dredge, undated                                   |
| Box 54, Item 6 | C288 Photograph of dredge, 1920-09-01   |

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#### Subseries 1.12.6: Miscellaneous Materials Handling, 1900-1913, undated

|                 |  |
|-----------------|--|
| Box 54, Item 7  | Schacht mit Gebaude fur Zechezollverein Schacht IV [shaft with building for Zechezollverein shaft IV], undated |
| Box 54, Item 8  | Handling cement materials with a traveling crane and grab bucket, 1900-12                                      |
| Box 54, Item 9  | Wagnet sift, 1913  |
| Box 54, Item 10 | 28.13 Photograph of a man standing in front of an aggregate pile, undated                                      |
| Box 54, Item 11 | 28.15 Photograph of two Men working in front of an aggregate pile, undated                                     |
| Box 54, Item 12 | 28.16 Photograph of aggregate being added to aggregate pile, undated   |
| Box 54, Item 13 | 59.395 Cula Ore Dock, undated  |
| Box 54, Item 14 | 59.396 Cula Ore Dock, undated  |

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#### Subseries 1.12.7: Piling, 1911-1920, undated

|                 |   |
|-----------------|---|
| Box 54, Item 15 | Union Iron Works, pile hammer driving 65 feet steel sheeting, LaS'alle Street Tunnel, Chicago, Illinois, 1911-04-26 |
| Box 54, Item 16 | Ford bulkhead, 1917-04  |
| Box 54, Item 17 | Photograph of pile driving equipment, undated   |
| Box 54, Item 18 | Photograph of men working, undated  |
| Box 54, Item 19 | Photograph of pile driving equipment over water, undated  |
| Box 54, Item 20 | Photograph of a man standing on equipment, undated  |

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| Box 54, Item 21 | Union Iron Works, pile hammer driving 65 feet, steel sheeting, LaS'alle Street tunnel, Chicago, Illinois, 1911-04-26                                       |
| Box 54, Item 22 | Ford bulkhead, 1917-04   |
| Box 54, Item 23 | Photograph of men standing with pile driving equipment, undated  |
| Box 54, Item 24 | Photograph of men standing with pile driving equipment, undated  |
| Box 54, Item 25 | Photograph of pile driver driving timber into water, undated   |
| Box 54, Item 26 | Photograph of pile driven into ground with bags surrounding, undated   |
| Box 54, Item 27 | Photograph of pile driver driving timber into hillside, undated  |
| Box 54, Item 28 | Photograph of pile driving equipment, undated  |
| Box 54, Item 29 | Photograph of steel sheets, undated  |
| Box 54, Item 30 | Photograph of Wabash pile driver train car, undated  |
| Box 54, Item 31 | Photograph of pile driving equipment over water, undated   |
| Box 54, Item 32 | Union Iron Works, pile hammer driving 65 feet, steel sheeting, 1911-04-26  |
| Box 54, Item 33 | Photograph of pile driver train car, undated   |
| Box 54, Item 34 | Photograph of men working, undated   |
| Box 54, Item 35 | C427 A standard type of contractor's pile driver, undated  |
| Box 54, Item 36 | C428 Photograph of men working and pile driver, 1920-07-01   |
| Box 54, Item 37 | C429 Self propelling track pile driver (industrial works) with leads in traveling position, convertible crane pile driver, undated                         |
| Box 54, Item 38 | C430 Self propelling Track pile driver rotated on its turntable to drive a pile at its extreme reach from the track. The leads are being lowered , undated |
| Box 54, Item 39 | C431 Vulcan drop hammers, Vulcan Iron Works, Chicago, Illinois, undated  |
| Box 54, Item 40 | C432 Casgrain's patent, undated  |
| Box 54, Item 41 | C433 McKiernan-Terry double acting pile hammers, drivers and pullers, undated  |
| Box 54, Item 42 | C434 Drawing of model pile equipment components, undated   |

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| Box 54, Item 43 | C435 Photograph of pile driving equipment over water, undated                         |
| Box 54, Item 44 | C437 Photograph of men strapping material to crane over water, undated                |
| Box 54, Item 45 | C438 Sketch of a model, undated   |
| Box 54, Item 46 | C439 Pile saw arbor, undated  |
| Box 54, Item 47 | C440 Photograph from above of pile driving equipment and timber, undated              |
| Box 54, Item 48 | C461 Photograph of pile driver driving timber into water, undated                     |
| Box 54, Item 49 | C462 Photograph of pile driver driving timber into water, undated                     |
| Box 54, Item 50 | C463 Photograph of pile driver driving timber into water, undated                     |
| Box 54, Item 51 | C464 Photograph of pile driver driving timber into water, undated                     |
| Box 54, Item 52 | C581 Drawing of digging holes for pile driving, undated                               |
| Box 54, Item 53 | 46.3 Piles overdriven, Atlantic Avenue Bridge, undated                                |
| Box 54, Item 54 | 46.5 Piles overdriven, Atlantic Avenue Bridge, undated                                |
| Box 54, Item 55 | No2 Plastic, undated  |
| Box 54, Item 56 | No7 Dry Mix, undated  |
| Box 54, Item 57 | No8 Plastic, undated  |
| Box 54, Item 58 | No13 Allas High Alumina, undated  |
| Box 54, Item 59 | No15 Low Alumina, undated   |
| Box 54, Item 60 | No22 Cement 0.9, H. Lime 0.1, undated   |
| Box 55, Item 1  | Single wall of Lackawanna steel sheet piling, undated                                 |
| Box 55, Item 2  | Photograph of wall of steel sheet piling, undated                                     |
| Box 55, Item 3  | Photograph of men constructing corner of steel sheet piling wall, undated             |
| Box 55, Item 4  | Method of bracing cofferdam, undated  |
| Box 55, Item 5  | Method of cutting Lackawanna steel sheet piling by the oxy-acetylene process, undated |



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| Box 55, Item 6  | Looking south along the cast wall of cofferdam, undated  |
| Box 55, Item 7  | The first pocket in the west wall of the cofferdam, undated  |
| Box 55, Item 8  | Driving a wall of 7 inch Lackawanna steel sheet piling in 12 foot lengths, undated   |
| Box 55, Item 9  | West wall of cofferdam showing pump installed for holding water before the installation of permanent pumping plant at south end of cofferdam, undated  |
| Box 55, Item 10 | Typical combination of circular and straight walls and junctions practical with, undated   |
| Box 55, Item 11 | Photograph of a pile driver train car, undated   |
| Box 55, Item 12 | Lackawanna Steel Company, undated  |
| Box 55, Item 13 | Photograph of cofferdams under railroad track, undated   |
| Box 55, Item 14 | Photograph of cofferdam, undated   |
| Box 55, Item 15 | Inner south wall of cofferdam showing resistance of piling joints to tensional strain, undated   |
| Box 55, Item 16 | Photograph of pile driver over water, undated  |
| Box 55, Item 17 | Photograph of cofferdams and pile driver train car, undated  |
| Box 55, Item 18 | Lackawanna steel sheet piling pocket 56, undated   |
| Box 55, Item 19 | Method by which the Lackawanna steel sheet piling used in the Black Rock cofferdam was delivered to scows from cars on out docks, undated  |
| Box 55, Item 20 | Cofferdam work on the Delaware, Lackawanna, and Western Railroad where the Lackawanna steel sheet piling had to be driven in spliced lengths to permit installation of the cofferdam under the bridge, undated |
| Box 55, Item 21 | Photograph of a cofferdam, undated   |
| Box 55, Item 22 | Lackawanna steel sheet piling cut to length, punched for splicing, inspected, and in storage at out plant pending shipment, undated  |
| Box 55, Item 23 | Derrick Scow with clam shell bucket excavating first filling from bottom of harbor inside cofferdam, undated   |
| Box 55, Item 24 | View of batter pile in leads of halifax pile driver, undated   |
| Box 55, Item 25 | Photograph of pile driver, undated   |

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| Box 55, Item 26 | Raymond pile core and shell, undated  |
| Box 55, Item 27 | Comparison of five concrete piles with ten wooden piles, undated  |
| Box 55, Item 28 | Lackawanna arched web steel sheet piling, undated   |
| Box 55, Item 29 | Concrete piles in piers joined by concrete arches, contemplated wooden pile plan, undated                 |
| Box 55, Item 30 | Three figures of pile driving steps, undated  |
| Box 55, Item 31 | Two figures of pile driving steps, undated  |
| Box 55, Item 32 | Photograph of a man standing in front of a pile driver, undated   |
| Box 55, Item 33 | The Foot of the Pedestal Pile, undated  |
| Box 55, Item 34 | Aa16 Notre Dame, Paris, France, undated   |
| Box 55, Item 35 | Aa19 Pont Au Change, Paris, France, undated   |
| Box 55, Item 36 | Aa21 Pont Neuf Bridge, Paris, France, undated   |
| Box 55, Item 37 | Aa36 Pont de l'Alma Bridge, Paris, France, undated  |
| Box 55, Item 38 | Aa37 Pont d'Lena Bridge, Paris, France, undated   |
| Box 55, Item 39 | Aa38 Pont d'Lena Bridge, Paris, France, undated   |
| Box 55, Item 40 | Hamilton Bridge, Smele's Boulton and Watt, undated  |
| Box 55, Item 41 | Cartland Crags Bridge, undated  |
| Box 55, Item 42 | Chirk Aqueduct, undated   |
| Box 55, Item 43 | Pont Cysylltau Aqueduct, undated  |
| Box 55, Item 44 | C412 Simplex composite pile, Simplex Concrete Piling Company, undated                                     |
| Box 55, Item 45 | C413 Alligator Point closed in position for driving, Alligator Point position open while pulling, undated |
| Box 55, Item 46 | C414 The Pedestal Pile, MacArthur Concrete Pile and Foundation Company, undated                           |

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| Box 55, Item 47 | C415 Excavated pedestal piles after 50 ton test, Boston and Maine Railroad, North Billerica, Massachusetts. Excavated pile Patterson Parchment Paper Company, Passaic, New Jersey, undated |
| Box 55, Item 48 | C416 Photograph of two men standing next to cylinder shells, undated   |
| Box 55, Item 49 | C417 A live load of twenty-two full grown Men on one 30-foot shell, undated  |
| Box 55, Item 50 | C418 Photograph of pile driver driving shell into ground, undated  |
| Box 55, Item 51 | C419 Raymond Pile, undated   |
| Box 55, Item 52 | C420 Photograph of piles driven into ground, undated   |
| Box 55, Item 53 | C421 Figure of section of corrugated pile, figure of sections of Chenoweth pile, undated   |
| Box 55, Item 54 | C422 Section of Teredo-Eaten tight bark pile, undated  |
| Box 55, Item 55 | C424 Wakefield sheet piling, undated   |
| Box 55, Item 56 | C425 Jones and Laughlin, Lackawanna, United States, undated  |
| Box 55, Item 57 | C426 Union Marine pile driver, undated   |
| Box 55, Item 58 | C441 Photograph of men next to pile drivers, undated   |
| Box 55, Item 59 | C442 This number six hammer is working on the Michigan Avenue Bridge, Chicago, Illinois, undated   |
| Box 55, Item 60 | C443 Drawing of hammer components, undated   |
| Box 55, Item 61 | C444 220 Sixty-foot piles in nine hours, five minutes. This was the record made with a number one Warrington-Vulcan steam pile hammer., undated  |
| Box 55, Item 62 | C445 Examples of overdriven wood piles, undated  |
| Box 55, Item 63 | C446 Photograph of pile driver equipment and cofferdam, undated  |
| Box 55, Item 64 | C460 Photograph of pile driver driving timber into water, undated  |
| Box 55, Item 65 | T129 Primitive pile driving, and two early Ram drivers, undated  |
| Box 55, Item 66 | T130 Four medieval winch piledrivers with various winch and trip arrangements, undated   |
| Box 56, Item 1  | A pier of twenty inch Raymond concrete piles, undated  |

|                 |   |
|-----------------|---|
| Box 56, Item 2  | Drawing of piling, undated  |
| Box 56, Item 3  | Drawing of Warer jet system of piling concrete piles, undated   |
| Box 56, Item 4  | Comparison of concrete pile with wooden pile, undated   |
| Box 56, Item 5  | Sectional view of pile core collapsed and ready to withdraw from the shell, undated   |
| Box 56, Item 6  | A group of ordinary piles driven together, undated  |
| Box 56, Item 7  | Figures show Raymond concrete piles and reinforced Raymond concrete piles, undated  |
| Box 56, Item 8  | Raymond pile core and shell fully driven, undated   |
| Box 56, Item 9  | Forming the pedestal pile, undated  |
| Box 56, Item 10 | Spiral hooping reinforced concrete pile burst by overdriven, 1914-05-28   |
| Box 56, Item 11 | Raymond concrete pile 22 feet 6 inches long, driven in sand and clay fill, undated  |
| Box 56, Item 12 | A group of pedestal piles, undated  |
| Box 56, Item 13 | Figure of how an ordinary pile supports its load. Figure of how a pedestal pile supports its load., undated                 |
| Box 56, Item 14 | Pile core collapsed and partly withdrawn from the shell. A completed Raymond concrete pile, without reinforcement., undated |
| Box 56, Item 15 | Sectional view of Raymond pile core showing collapsing and expanding device, undated  |
| Box 56, Item 16 | Raymond pile core encased in shell ready to be driven, undated  |

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#### Subseries 1.12.8: Air Compressors, Blowers, and Blowing Engines, 1881-1916, undated

|                 |  |
|-----------------|--|
| Box 56, Item 17 | 29 Brown Boveri Rateau rotary compressor, undated  |
| Box 56, Item 18 | 31 Multi stage compressor driven by horizontal Curtis turbine, undated   |
| Box 56, Item 19 | 34 Schnitt durch ein Stahlwerksgeblase fur 460 bis 920 cbm/min 1,5 bis 2,5 at. [34 Section through a steelworks blower for 460 to 920 cbm/min 1.5 to 2.5 at.], undated |
| Box 56, Item 20 | 35 Brown Boveri Rateau Rotary compressor, undated  |

|                 |   |
|-----------------|---|
| Box 56, Item 21 | 37 Rateau Armengaud rotary compressor for gas turbine for Societe des Turbo-Moteurs. [Rateau Armengaud rotary compressor for gas turbine for Societe des Turbo-Moteurs.], undated |
| Box 56, Item 22 | 39 Photograph of machinery in a warehouse, undated  |
| Box 56, Item 23 | ? New Bedford, 1898-09  |
| Box 56, Item 24 | Plan and elevation, diesel engine, undated  |
| Box 56, Item 25 | G35 Unidentified drawing, 1916  |
| Box 56, Item 26 | Intercooler, air and gas compressor, Rand and Drill Company, undated  |
| Box 56, Item 27 | Air reheater, Rand and Drill Company, undated   |
| Box 56, Item 28 | Mechanical poppet valve air and gas compressor, Rand and Drill Company, undated   |
| Box 56, Item 29 | Ingersoll sergeant compressor, details of inlet air cylinder, undated   |
| Box 56, Item 30 | Air cylinder with vertical lift valves, undated   |
| Box 56, Item 31 | Centrifugal pump, 1897  |
| Box 56, Item 32 | Compound air compressor, undated  |
| Box 56, Item 33 | Compound air compressor, undated  |
| Box 56, Item 34 | Vertical compound blowing engine, undated   |
| Box 56, Item 35 | Original steeple blowing engine designed by Edwin Reynolds, 1881  |
| Box 56, Item 36 | Sergeant vertical receiver inter cooler, undated  |
| Box 56, Item 37 | Corliss air valve, air and gas compressor, undated  |
| Box 56, Item 38 | Outlet valve, air and gas compressors, Rand and Drill Company, undated  |
| Box 56, Item 39 | Photograph of machinery on display, undated   |
| Box 56, Item 40 | Riedler Stumpf rotary compressor, undated   |
| Box 56, Item 41 | Common fan, undated   |
| Box 56, Item 42 | Kolben geblase und turbo geblase [Piston blower and turbo blower], undated  |

|                 |  |
|-----------------|--|
| Box 56, Item 43 | Constructed by the Liverpool Refrigeration Company, undated  |
| Box 56, Item 44 | Electrically driven fans for boiler draught, undated   |
| Box 56, Item 45 | Koerting blower, undated   |
| Box 56, Item 46 | Hydraulic air compressor, Ainsworth, British Columbia, undated   |
| Box 56, Item 47 | Rateau rotary compressor for Bethune Mines built by Souter Horle Company, undated                                      |
| Box 56, Item 48 | Air compressor, undated  |
| Box 56, Item 49 | Public Service Commission, contractors power plant, air compressor in foreground, undated                              |
| Box 56, Item 50 | Koerting blower, undated   |
| Box 56, Item 51 | Unlabeled drawing, undated   |
| Box 56, Item 52 | Unlabeled drawing, undated   |
| Box 56, Item 53 | Unlabeled drawing, undated   |
| Box 56, Item 54 | Rateau air compressor, driven by a steam turbine, built by Fraser and Chalmers (Erith) for Nerva Copper Mines, undated |

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#### Subseries 1.12.9: Gas Producers, undated

|                 |   |
|-----------------|---|
| Box 56, Item 55 | Centrifugal type gas scrubbers at MacLaurin Plant, undated  |
| Box 56, Item 56 | Unterdruck-Gaserzeuger von Julius Pintisch in Berlin. [Negative pressure gas generator from Julius Pintisch in Berlin.] , undated |
| Box 56, Item 57 | Warren suction producer for Anthracite coal, undated  |
| Box 56, Item 58 | Sectional view of Loomis Pettibone, type "a" gas generating system for Bituminous coal, Wood and Lignite, undated                 |
| Box 56, Item 59 | Überdruck-gaserzeuger der Gasmotoren Fabrik Deutz [Overpressure gas generator from the Deutz gas engine factory], undated         |
| Box 56, Item 60 | Überdruck-gaserzeuger von Gebrüder Korting. [Positive pressure gas generator from Gebrüder Korting], undated                      |
| Box 56, Item 61 | Section of Westinghouse double zone producer for Bituminous coal or other tarry fuels, undated                                    |

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| Box 56, Item 62 | Cross section producer, undated   |
| Box 56, Item 63 | Section of Loomis Pettibone up draft gas producer and auxiliaries, undated  |
| Box 57, Item 1  | Staub suction gas producer, undated   |
| Box 57, Item 2  | Überdruck-gaserzeuger der Societe des Monteurs Gazogene Benier in Paris.<br>[Overpressure gas generator from the Societe des Monteurs Gazogene Benier in Paris.], undated |
| Box 57, Item 3  | Producer with revolving bottom, undated   |
| Box 57, Item 4  | Morgan continuous gas producer with George automatic feed, undated  |

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#### Subseries 1.12.10: Internal Combustion, 1826-1930, undated

|                 |  |
|-----------------|--|
| Box 58, Item 1  | Photograph of machinery, undated   |
| Box 58, Item 2  | The Complete Expansion Gas Engine built by the Wisconsin Engine Company, Corliss, Wisconsin, undated |
| Box 58, Item 3  | G14 Photograph of machinery, undated   |
| Box 58, Item 4  | G15 Engine, 1885, undated  |
| Box 58, Item 5  | G20 Unidentified drawing, undated  |
| Box 58, Item 6  | G21 Unidentified drawing, undated  |
| Box 58, Item 7  | G26 De La Vergne oil engine, type FH, undated  |
| Box 58, Item 8  | G27 Water space, undated   |
| Box 58, Item 9  | G39 Photograph of machinery, undated   |
| Box 58, Item 10 | Admission valve, diesel engine, undated  |
| Box 58, Item 11 | Section of scavenging pumps, section at the control station, undated                                 |
| Box 58, Item 12 | Westinghouse, undated  |
| Box 58, Item 13 | Motor von Oechelhauser und Junkers, 1893   |
| Box 58, Item 14 | Produce gas engine, undated  |
| Box 58, Item 15 | Koirting, undated  |

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| Box 58, Item 16 | Blast furnace Gas engine, undated   |
| Box 58, Item 17 | Triple cylinder diesel engine, undated  |
| Box 58, Item 18 | Produces gas engine, undated  |
| Box 58, Item 19 | The Complete Expansion Gas Engine built by the Wisconsin Engine Company, Corliss, Wisconsin, undated                                    |
| Box 58, Item 20 | Koirting, undated   |
| Box 58, Item 21 | Nurnberg, undated   |
| Box 58, Item 22 | Accompanying cut shows a plan in section of the Fairbanks-Morse gas engine, undated   |
| Box 58, Item 23 | Construction and adjustment of main bearing, Westinghouse [Electric Corporation], undated   |
| Box 58, Item 24 | Hornsby - Akroyd air inlet valve and oil pump, undated  |
| Box 58, Item 25 | Cylinder details showing valve mechanism and air starting valve in head, undated  |
| Box 58, Item 26 | 5 Horse power Detroit engine, undated   |
| Box 58, Item 27 | Produces gas engine, undated  |
| Box 58, Item 28 | Stuart Perry's gas engine, 1846   |
| Box 58, Item 29 | Atkinson cycle gas engine, 1889-1890  |
| Box 58, Item 30 | Alfred drake's gas engine, 1855   |
| Box 58, Item 31 | Brayton oil engine, 1874  |
| Box 58, Item 32 | Otto silent gas engine, 1882  |
| Box 58, Item 33 | Otto engine, sectional plan of slide valve, 1876  |
| Box 58, Item 34 | Langen and Otto air engine, 1867-08-13  |
| Box 58, Item 35 | Otto and Langen vertical engine, transverse section, 1866   |
| Box 58, Item 36 | Atkinson cycle gas engine, 1889-1890  |
| Box 58, Item 37 | Atkinson's patent cycle gas engine, sole maker for United States Henry Warden, Germantown Junction, Philadelphia, Pennsylvania, undated |



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| Box 58, Item 38 | Carburetor, replica of S. Moroey's liquid fuel engine, patented 1826, 1826  |
| Box 58, Item 39 | Brayton gas engine, indicator diagram, undated  |
| Box 58, Item 40 | Stuart Perry's gas engine, 1844-05-23   |
| Box 58, Item 41 | George B. Brayton, gas engine, 1872   |
| Box 58, Item 42 | Otto and Langen engine indicator, diagram (clerk), 1866   |
| Box 58, Item 43 | Nicolas A. Otto's gas engine, 1877  |
| Box 58, Item 44 | W. Wittig and W. Noees gas engines, 1880-03-23  |
| Box 58, Item 45 | Lenoir engine, indicator diagram, (slade), 1860   |
| Box 58, Item 46 | Lenoir horizontal gas engine, 1860  |
| Box 58, Item 47 | Gottlieb Daimler's compound gas engine, 1879  |
| Box 57, Item 5  | 2 Detailed secontino of thirty hp cylinder cooled type photograph B-3254, undated   |
| Box 57, Item 6  | 3 Section 75 hp per C41 oil cooled engine, photo B 3281 and 3296, undated   |
| Box 57, Item 7  | 14 Snow Worthington, undated  |
| Box 57, Item 8  | 19 3 Stg. air compressors and DC general DC to 100 hp engine, Motorship Challenger Sun Ship Building Company, undated         |
| Box 57, Item 9  | 20 Snow Worthington, undated  |
| Box 57, Item 10 | 68A Set two, undated  |
| Box 57, Item 11 | 94-S Snow machinery, undated  |
| Box 57, Item 12 | 98-S Photograph of machinery, undated   |
| Box 57, Item 13 | Snow crude oil engine, undated  |
| Box 57, Item 14 | 63-S Drawing of unknown machinery, undated  |
| Box 57, Item 15 | H-4 Snow diesel, undated  |
| Box 57, Item 16 | Photograph of machinery, undated  |
| Box 57, Item 17 | H-11 Brake horse power, full load 100%, fuel consumption curve, four cycle "Snow" oil engine from actual brake tests, undated |

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| Box 57, Item 18 | Photograph of machinery, undated                        |
| Box 57, Item 19 | Unlabeled drawing of machinery, undated                 |
| Box 57, Item 20 | Franco Tosi, undated                                    |
| Box 57, Item 21 | Photograph of a man standing next to machinery, undated |
| Box 57, Item 22 | Photograph of machinery in a warehouse, undated         |
| Box 57, Item 23 | Snow Worthington, undated                               |
| Box 57, Item 24 | Snow Worthington, undated                               |
| Box 57, Item 25 | 24V Unlabeled drawing of machinery, undated             |
| Box 57, Item 26 | 30V Unlabeled drawing of machinery, undated             |
| Box 57, Item 27 | D7 Unlabeled drawing of machinery, undated              |
| Box 57, Item 28 | D19 Unlabeled drawing of machinery, undated             |
| Box 57, Item 29 | D21 Unlabeled drawing of machinery, undated             |
| Box 57, Item 30 | Franco Tosi, undated                                    |
| Box 57, Item 31 | Photograph of machinery, undated                        |
| Box 57, Item 32 | Unlabeled drawing of machinery, undated                 |
| Box 57, Item 33 | Snow Worthington, undated                               |
| Box 57, Item 34 | 402 Black and white photograph, undated                 |
| Box 57, Item 35 | 407 Photograph of machinery, undated                    |
| Box 57, Item 36 | Photograph of machinery, undated                        |
| Box 57, Item 37 | Photograph of machinery, undated                        |
| Box 57, Item 38 | Double cylinder engine: 200 actual horse power, undated |
| Box 57, Item 39 | Unlabeled drawing of machinery, undated                 |
| Box 57, Item 40 | Photograph of machinery in a warehouse, 1930-09-04      |
| Box 57, Item 41 | Photograph of machinery, undated                        |

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| Box 57, Item 42 | Figure 2, photograph of man standing next to machinery, undated   |
| Box 57, Item 43 | Figure 5, photograph of machinery, undated  |
| Box 57, Item 44 | Figure 6, model image of machinery, undated   |
| Box 57, Item 45 | Figure 7, model image of machinery, undated   |
| Box 57, Item 46 | Figure 10, McIntosh and Seymour Corporation, Auburn, New York, United States of America, undated  |
| Box 57, Item 47 | Figure 18, Photograph of machinery, undated   |
| Box 57, Item 48 | Figure 19, Photograph of machinery, undated   |
| Box 57, Item 49 | Figure 22, Photograph of machinery, undated   |
| Box 57, Item 50 | "Do not order parts from this catalog", undated   |
| Box 57, Item 51 | Governor, undated   |
| Box 57, Item 52 | F. [Franz] X. [Xaver] Matolony Wien, undated  |
| Box 57, Item 53 | Photograph of machinery in a warehouse, undated   |
| Box 57, Item 54 | Photograph of machinery, undated  |
| Box 57, Item 55 | Photograph of machinery, undated  |
| Box 57, Item 56 | Doppeltwirkende Ausspul und Ladepumpe in Reihenordnung hintere Pumpenseite fordert Auswaschluff, vordere Seite das Gemisch. [Double-acting exhaust and charging pump in a row arrangement, the rear pump side requires washout air, the front side the mixture.], undated |
| Box 57, Item 57 | ? Engine, undated   |
| Box 57, Item 58 | Blast furnace gas engine, undated   |

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### Subseries 1.12.11: Marine Engines, undated

|                 |   |
|-----------------|---|
| Box 58, Item 48 | Triple cylinder engines for the double screw, undated |
| Box 58, Item 49 | Arrangement of cruising engine, undated               |
| Box 58, Item 50 | Triple cylinder engines for the saloon boat, undated  |

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**Subseries 1.12.12: Power Plants, 1900, undated**

|                 |  |
|-----------------|--|
| Box 58, Item 51 | Central Power Station, West End Street Railway Company, Boston, Massachusetts, undated |
| Box 58, Item 52 | Corliss horizontal cross compound engine with generator, undated                       |
| Box 58, Item 53 | Typical power plant, undated   |
| Box 58, Item 54 | H480 heat Units in pound of coal, undated  |
| Box 58, Item 55 | H640 solar motor, undated  |
| Box 58, Item 56 | American Electrician, 1900-08  |

**Subseries 1.12.13: Refrigeration, undated**

|                 |  |
|-----------------|--|
| Box 58, Item 57 | Poelsch Freezing Company, undated  |
| Box 58, Item 58 | Unlabeled drawing, undated   |
| Box 58, Item 59 | 464-9216 Ice dealers of Quito collecting snow, Pichincha, Ecuador, undated             |
| Box 58, Item 60 | 12911 Artificial ice after forty eight hours freezing in a New Jersey factory, undated |
| Box 58, Item 61 | 12912 Filling tanks and removing blocks of artificial ice, New Jersey, undated         |
| Box 58, Item 62 | 12913 Artificial ice ready for shipment, undated                                       |
| Box 58, Item 63 | 13739 General view of ice plant, Tulsa, Oklahoma, undated                              |

**Subseries 1.13: Power, undated**

|                     |  |
|---------------------|--|
| Scope and Contents: | Materials arranged in subjects by the division and include: subseries 1.13.1, University of Wisconsin lab views; subseries 1.13.2, windmills; subseries 1.13.3, stationery steam engines; subseries 1.13.4, steam engines - governors; subseries 1.13.5, power plants; subseries 1.13.6, steam engines - early history; subseries 1.13.7, steam engines with generators; subseries 1.13.8, steam engines -parts and details; subseries 1.13.9, air compressors, blowers, blowing engines; subseries 1.13.10, marine engines; subseries 1.13.11, refrigeration; subseries 1.13.12, internal combustion; and subseries 1.13.13, gas producers. |
|---------------------|--|

**Subseries 1.14: Railroad Mileage Maps, undated**

|                     |   |
|---------------------|---|
| Scope and Contents: | Materials arranged in subjects by the division and include: subseries 1.14.1, transportation arteries; subseries 1.14.2, railway mileage; subseries 1.14.3, railroad engineering; subseries 1.14.4, railroad relocation - St. Louis; subseries 1.14.5, subways; subseries 1.14.6, all testing |
|---------------------|---|

including tests for Professor J. T. Thompson; subseries 1.14.7, people and portraits; subseries 1.14.8, engineering profession and surveying; and subseries 1.14.9, concrete – general.

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### Subseries 1.15: Steam Boilers, undated

Scope and Contents: Materials arranged in subjects by the division and include subseries 1.15.1, furnaces, grates, stokers, etc.; subseries 1.15.2, miscellaneous parts groups; subseries 1.15.3, condensers; subseries 1.15.4, auxiliaries; subseries 1.15.5, parts and details; subseries 1.15.6, superheaters; subseries 1.15.7, photographs of erections; subseries 1.15.8, photographs of installations; and subseries 1.15.9, complete units.

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### Subseries 1.16: Steam Turbines, undated

Scope and Contents: Materials arranged in subjects by the division and include subseries 1.16.1, turbines; subseries 1.16.2, hydraulic power - machinery; subseries 1.16.3, ancient muscle power - devices; and subseries 1.16.4, hydraulic - dams and power houses.

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### Subseries 1.17: Tunneling, undated

Scope and Contents: Materials arranged in subjects by the division and include subseries 1.17.1, tunneling; and subseries 1.17.2, roads.

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