

CAMBRIA IRON COMPANY, FOUNDRY
(Bethlehem Steel Company, Foundry)
Cambria Iron Works
Lower Works
Johnstown
Cambria County
Pennsylvania

HAER No. PA-109-E

HAER
PA
11-5070
135E-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
P.O. Box 37127
Washington, D.C. 20013-7127

HISTORIC AMERICAN ENGINEERING RECORD

CAMBRIA IRON COMPANY, FOUNDRY
(Bethlehem Steel Company, Foundry)
Cambria Iron Works

HAER
PA
11-JOTO
135E-

HAER No. PA-109-E

Location: Lower Works, Johnstown, Cambria
County, Pennsylvania

Quad: Johnstown, Pennsylvania

UTM: 17 E.676370 N.4467000

Date of Construction: ca. 1865

Fabricator: unknown

Present Owner: Bethlehem Steel Corporation

Present Use: Foundry

Significance: The iron foundry consists of a large two-story structure with ornate brick walls and a mansard slate-covered roof. Cambria Iron Company operated the foundry not as a commercial enterprise, but rather to service the iron works. Iron castings for the company's machine parts as well as ornamental ironwork for buildings were made in the foundry.

Historian: Gray Fitzsimons, ed.

Project Information:

The results of the study of Cambria County were published in 1990: Fitzsimons, Gray, editor, Blair County and Cambria County, Pennsylvania: An Inventory of Historic Engineering and Industrial Sites (Washington, D.C.: America's Industrial Heritage Project (AIHP) and HABS/HAER, National Park Service). The contents of the publication were transmitted to the Library of Congress as individual reports. Research notes, field photos and copies of historic photos collected during the project were transmitted to the AIHP Collection, Special Collections, Stapleton Library, Indiana University of Pennsylvania, Indiana, PA 15705.

HISTORY

Soon after the formation of the Cambria Iron Works, ironmasters George S. King and Dr. Peter Shoenberger oversaw the construction of four, coke-fired blast furnaces, a rolling mill, a machine shop, and a foundry. Financial difficulties hampered the completion of the rolling mill until 1854, when Wood, Morrell & Co. of Philadelphia provided additional capital to carry forward the enterprise. Between 1855 and 1862, Wood, Morrell & Co. leased the iron works and inaugurated the Conemaugh Valley's first large-scale production of iron rail. Over the next three years a number of new buildings were erected including an octagonally-shaped blacksmith shop (1864) and an iron foundry (1865). Cambria Iron Company operated the foundry not as a commercial enterprise, but rather to service the iron works. Iron castings for the company's machine parts as well as ornamental ironwork for buildings were made in the foundry.

Located behind the blacksmith shop and the machine shop, the two-story iron foundry measured 148' x 73' with a mansard slate-covered roof. Common-bond red-brick walls, round-arched window openings with decorative brick corbeling, and a stone foundation contributed aesthetically to the building. The original mansard roof has been replaced by a sloping corrugated metal roof resting on steel bar joists. A small, one-story brick addition was erected about 1890 along the west facade.

The 1870s witnessed considerable expansion at Cambria Iron, and the existing iron foundry was soon in need of enlargement. In 1880 Cambria Iron designed a large, two-and-one-half-story addition to the north. The wing measured 160' x 66', and incorporated a stone foundation, brick pilasters, common-bond brick walls, and wrought-iron, pin-connected Pratt roof trusses. The addition also included gable-roof monitors, wrought-iron columns, and flat-arched door and window openings, most of which have been covered with translucent fiberglass. A three-story sand conveyor, covered with corrugated metal and located along the northwestern facade of the wing was built in the 1960s. The interior of the Iron Foundry and Foundry Wing has been gutted, and only an electrically powered overhead crane in the 1881 addition remains in place. No other historic equipment remains in the foundry.

Along with this addition, a new cupola was installed in the 1865 foundry. As late as the 1930s much of the 1870s equipment was still in use. The Bethlehem Steel Company, after acquiring Cambria Iron in 1923, continued to use the foundry until about 1983. Since then, Bethlehem Steel has contracted with outside foundries for all of its iron castings for the Johnstown plants.

SOURCES

Cambria Iron Company. "Stone Base Course of Wall, New Foundry Building; June 15, 1880," original drawing in possession of Bethlehem Steel Corporation, Engineering Division, Johnstown.

_____. "Rafter for Wing to Foundry Building, Cambria Iron Works; June 2 1880," original drawing in possession of Bethlehem Steel Corporation, Engineering Division, Johnstown.

_____. "Wing to Foundry Building, Cambria Iron Works; May 18, 1880," original drawing in possession of Bethlehem Steel Corporation, Engineering Division, Johnstown.

_____. "Oval Cupola for Addition to Foundry Building, Cambria Iron Works; May 18, 1880," original drawing in possession of Bethlehem Steel Corporation, Engineering Division, Johnstown.

"Cambria Foundry, Historical Data," unpublished notes on the Foundry, no author, n.d., available in the Library of the Johnstown Flood Museum, Box: Steel Industry Scrapbook.

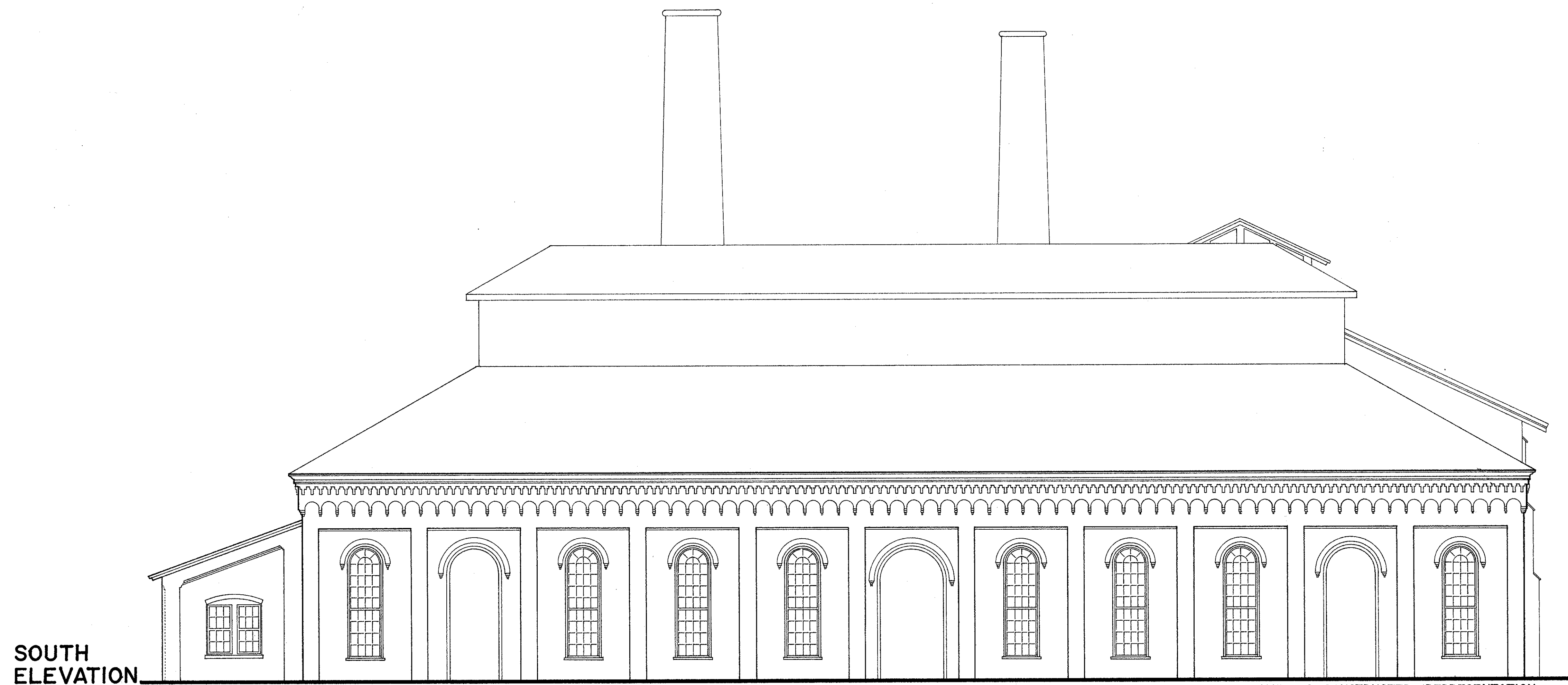
Galasso, Ralph. Pattern-Maker, Bethlehem Steel Corp.: Johnstown Plant Lower Works Division. Interviewed February 1987.

M'Cormick, S.B. "A Sketch of Johnstown and Suburbs; and the Cambria Iron Works." (Pittsburgh: Barr and Myers, n.d. [ca. 1867]) pp 11-15.

Sanborn Map Company. Johnstown, Pennsylvania. New York: Sanborn Map Company, 1891 and 1911.

CAMBRIA IRON COMPANY

FOUNDRY AND FOUNDRY WING • CA. 1865, 1880



SOUTH
ELEVATION

NOTE: RECONSTRUCTED REPRESENTATION

About 1865 the Cambria Iron Company erected a new Iron Foundry on the site of the original (1852) foundry. Measuring 147'-10" X 74'-1", the new one-story building was constructed with brick load-bearing walls, a large slate-covered hipped roof supported by timber and iron Howe trusses, and contained a full-length monitor. The foundry building featured highly ornate brickwork, including arched door and window surrounds and a corbelled cornice. The major structures and equipment inside the foundry included the coke-fired cupola furnace (used for heating the pig-iron), jib cranes (used for lifting and manipulating such heavy objects as ingots, ladles, and moulds), and the ladles which held the molten iron. Foundry workers, namely the skilled iron moulders and their helpers, produced a wide range of iron castings, including tools, gears for machinery, metal parts for the rolling stands, crane hooks, and special ladles and moulds. These and many other iron products were produced in the foundry solely for use in the mills and buildings of the Cambria Iron Company. Patterns for all of the castings came from the nearby Pattern Shop.

As Cambria Iron greatly expanded its works in the 1870's, a larger foundry operation became imperative. In 1879 the company undertook a major addition to the Iron Foundry, designing and erecting a large 3½-story brick building that adjoined the north facade of the existing foundry. Completed in 1880, the foundry addition measured 161'-6" X 67'-6" and contained pin-connected, wrought-iron roof trusses, a central overhead crane, and a series of jib cranes. Similar to the earlier foundry, the addition featured ornamental brickwork and multi-light windows. The Iron Foundry continued in operation throughout the 19th and early 20th century. The Bethlehem Steel Company acquired the Cambria works in 1923 and, over the next half century, carried out a number of changes to the foundry buildings. Most notably, these changes included the installation of a new cupola furnace and the reconstruction of the hipped roof. Steel bar joists and a large, sloping shed roof replaced the original hipped roof. (These drawings document the original hipped roof). Nearly 130 years of foundry work came to an end in 1983 when Bethlehem Steel closed the Cambria Foundry.

DELINEATED BY: J. Noel O'Dwyer, 1988

SOUTHWESTERN PENNSYLVANIA RECORDING PROJECT
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

JOHNSTOWN

CAMBRIA IRON COMPANY FOUNDRY
EAST BANK OF CONEMAUGH RIVER .5 MILES NORTH OF STONYCREEK
CAMBRIA COUNTY

PENNSYLVANIA

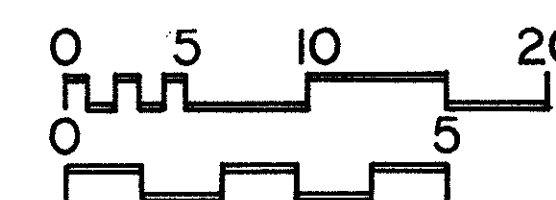
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WEST ELEVATION



FT. 1/8" = 1'-0"
M. 1:98

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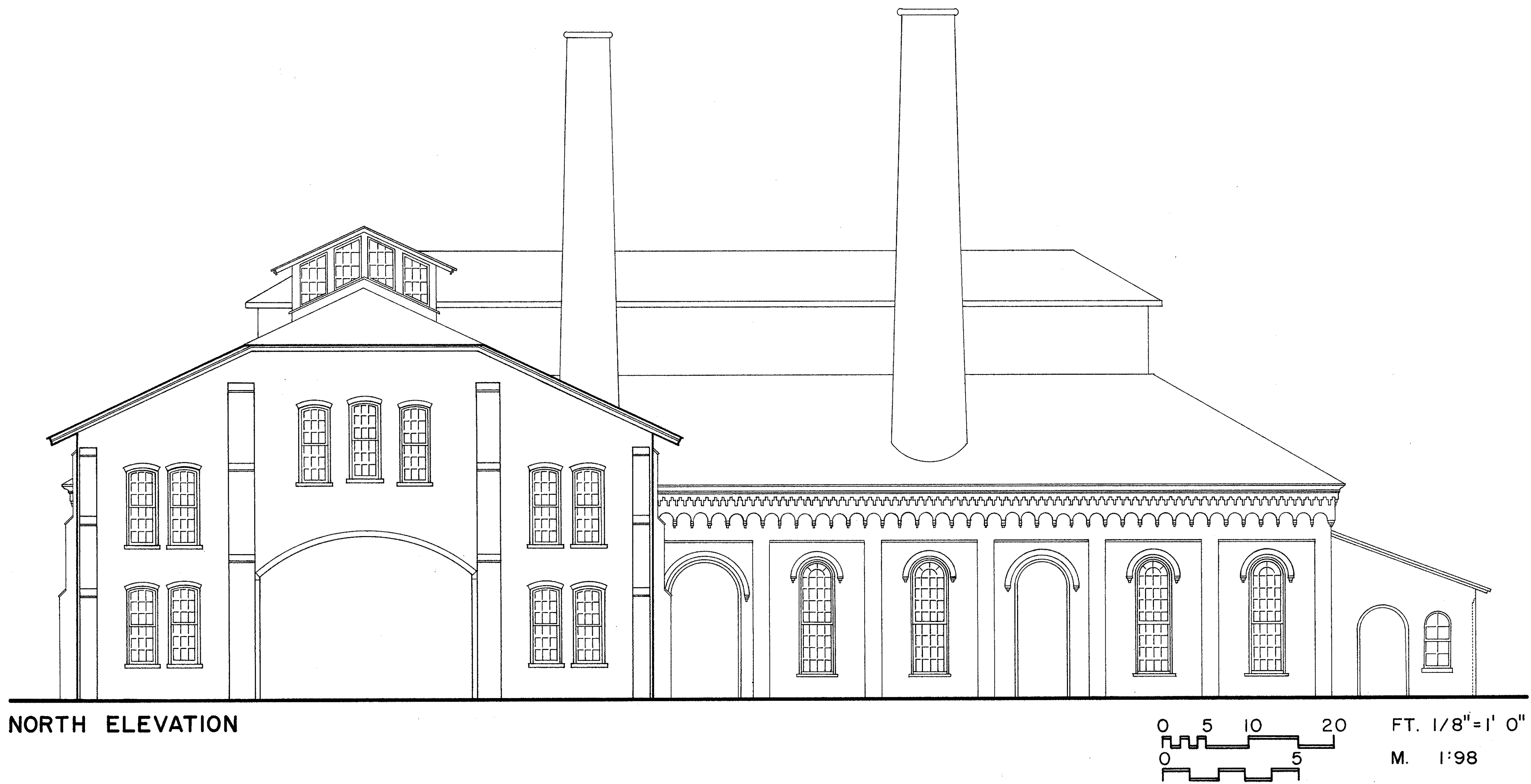
JOHNSTOWN

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EAST BANK OF CONEMAUGH RIVER, 5 MILES NORTH OF STONICREEK
CAMBRIA COUNTY

PENNSYLVANIA

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EAST BANK OF CONEMAUGH RIVER, 5 MILES NORTH OF STONYCREEK
CAMBERIA COUNTY

PENNSYLVANIA

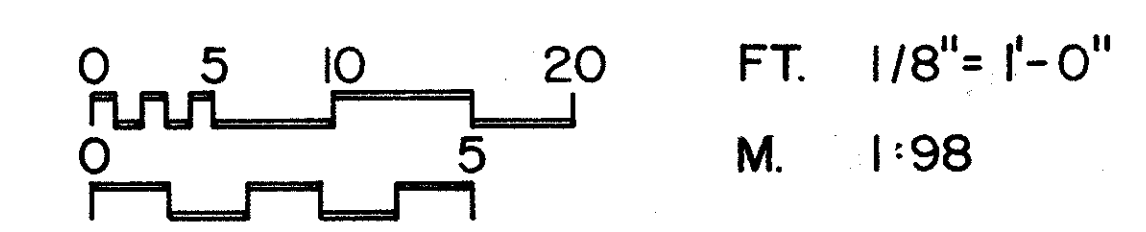
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EAST ELEVATION



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JOHNSTOWN

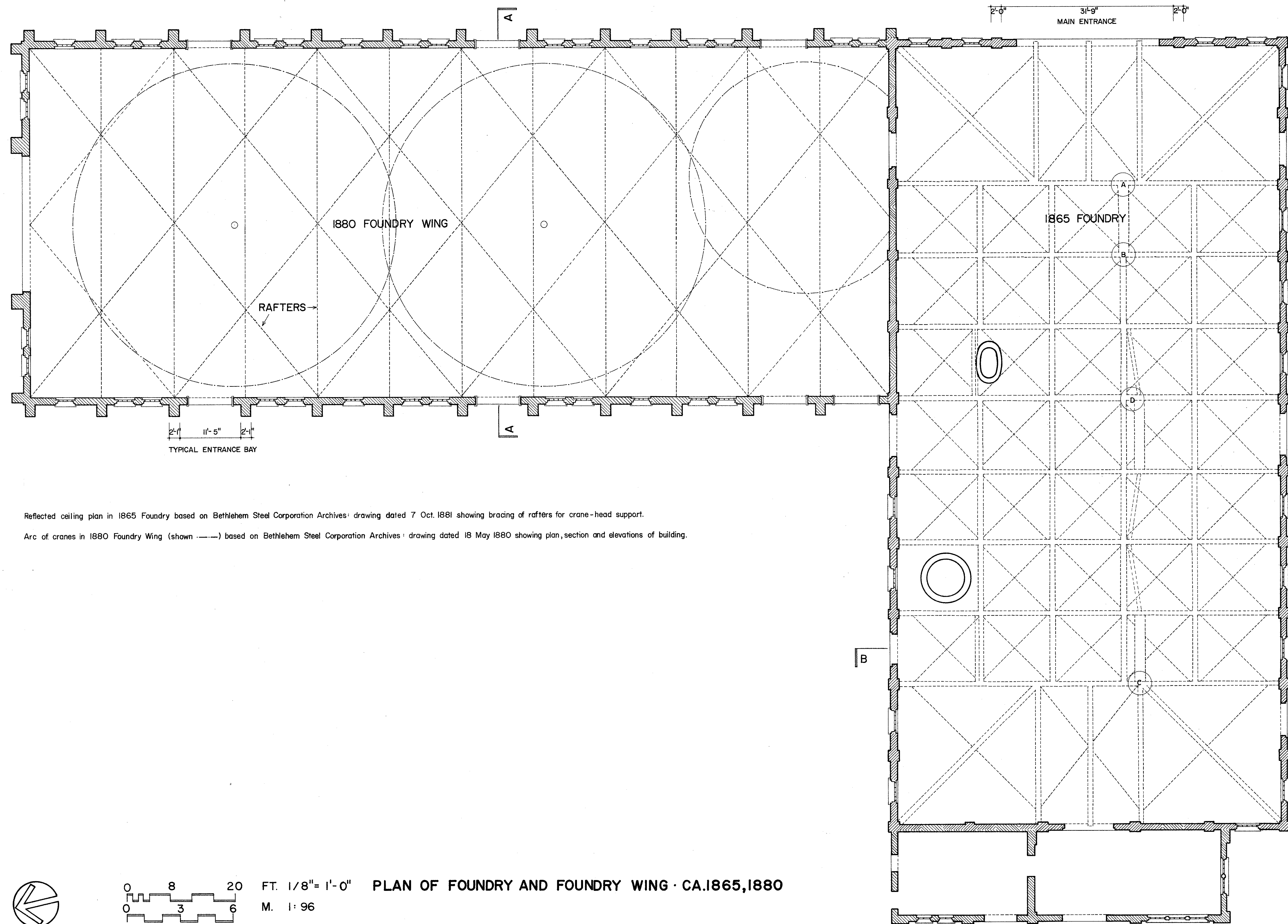
CAMBRIA IRON COMPANY, FOUNDRY
EAST BANK OF CONEMAUGH RIVER, 5 MILES NORTH OF STONECREEK
CAMBRIA COUNTY

PENNSYLVANIA

SHEET
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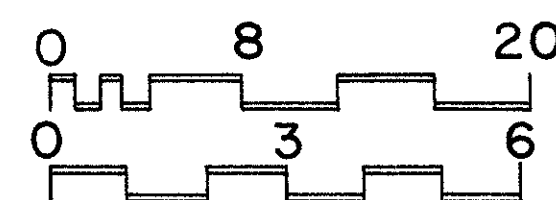
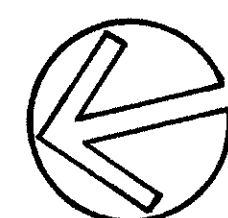
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Reflected ceiling plan in 1865 Foundry based on Bethlehem Steel Corporation Archives: drawing dated 7 Oct. 1881 showing bracing of rafters for crane-head support.

Arc of cranes in 1880 Foundry Wing (shown ———) based on Bethlehem Steel Corporation Archives: drawing dated 18 May 1880 showing plan, section and elevations of building.



FT. 1/8" = 1'-0"
M. 1:96

PLAN OF FOUNDRY AND FOUNDRY WING - CA.1865,1880

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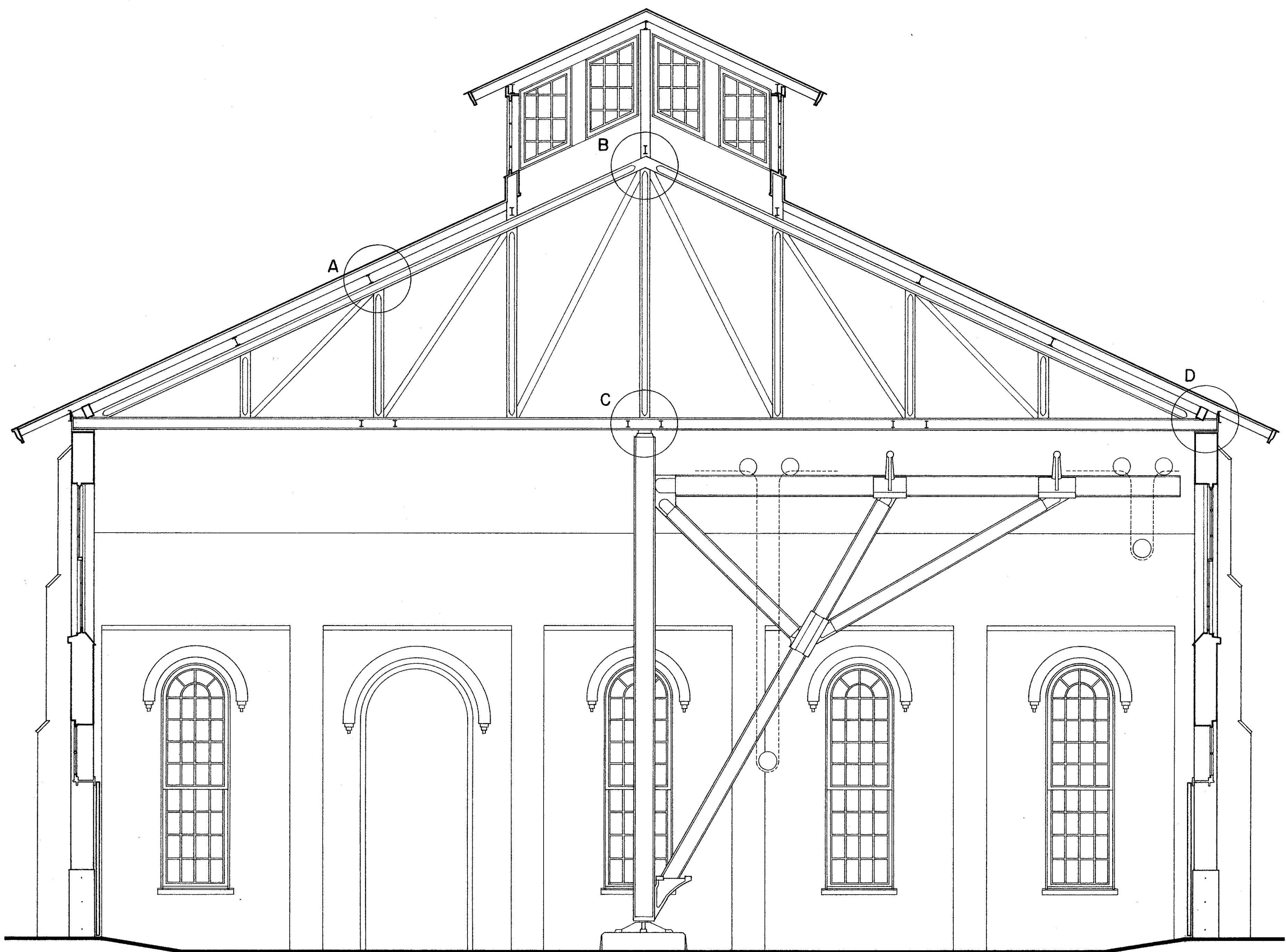
JOHNSTOWN

EAST BANK OF CONEMAUGH RIVER .5 MILES NORTH OF STONYCREEK
CAMBRIA COUNTY
CAMBRIA IRON COMPANY, FOUNDRY CONFLUENCE

PENNSYLVANIA

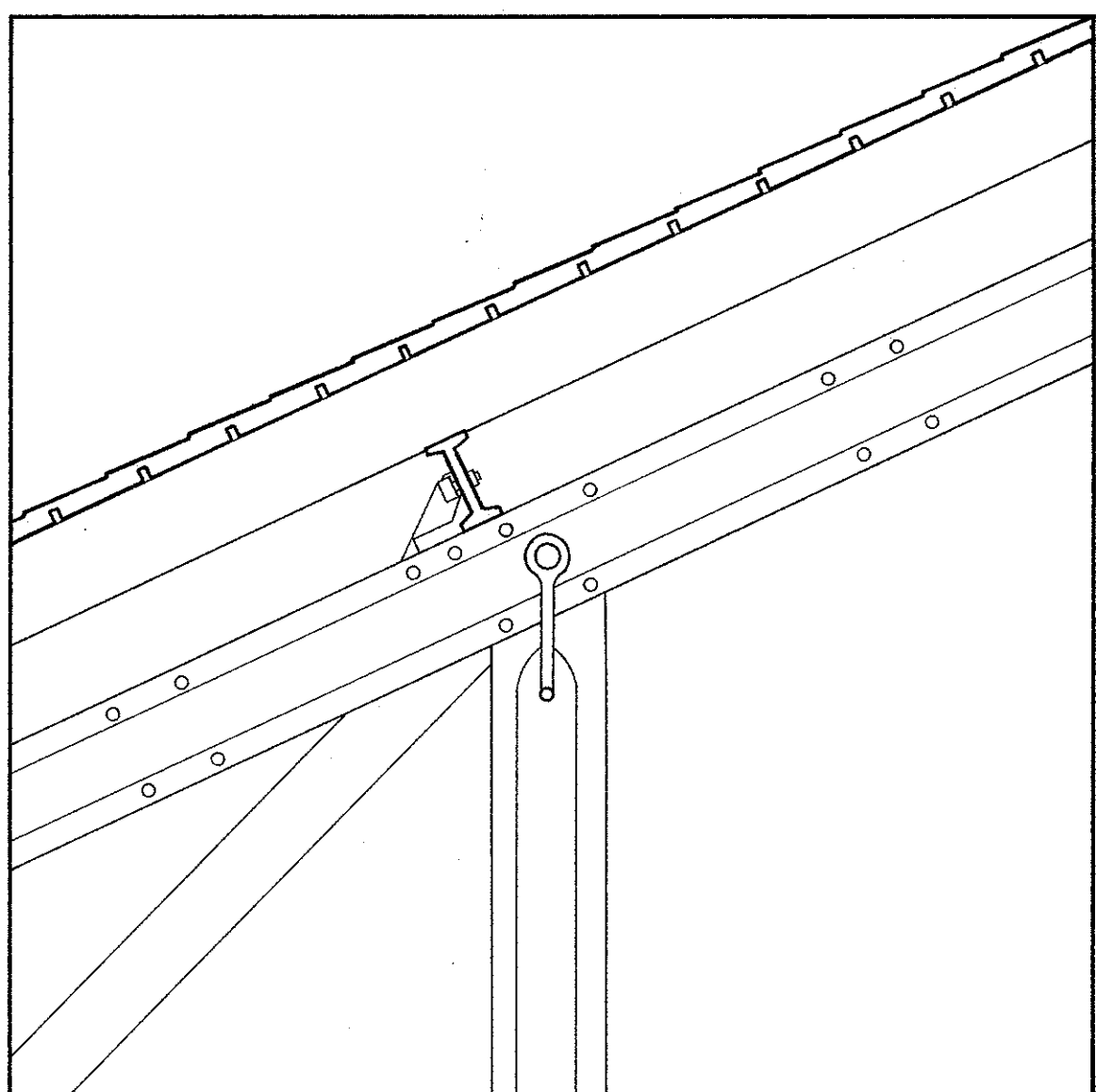
SHEET 5 OF 10

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SECTION AA THROUGH 1880 FOUNDRY WING

0 5 10 FT. 1/4" = 1' 0"
0 1 2 3 M. 1:48



DETAIL A

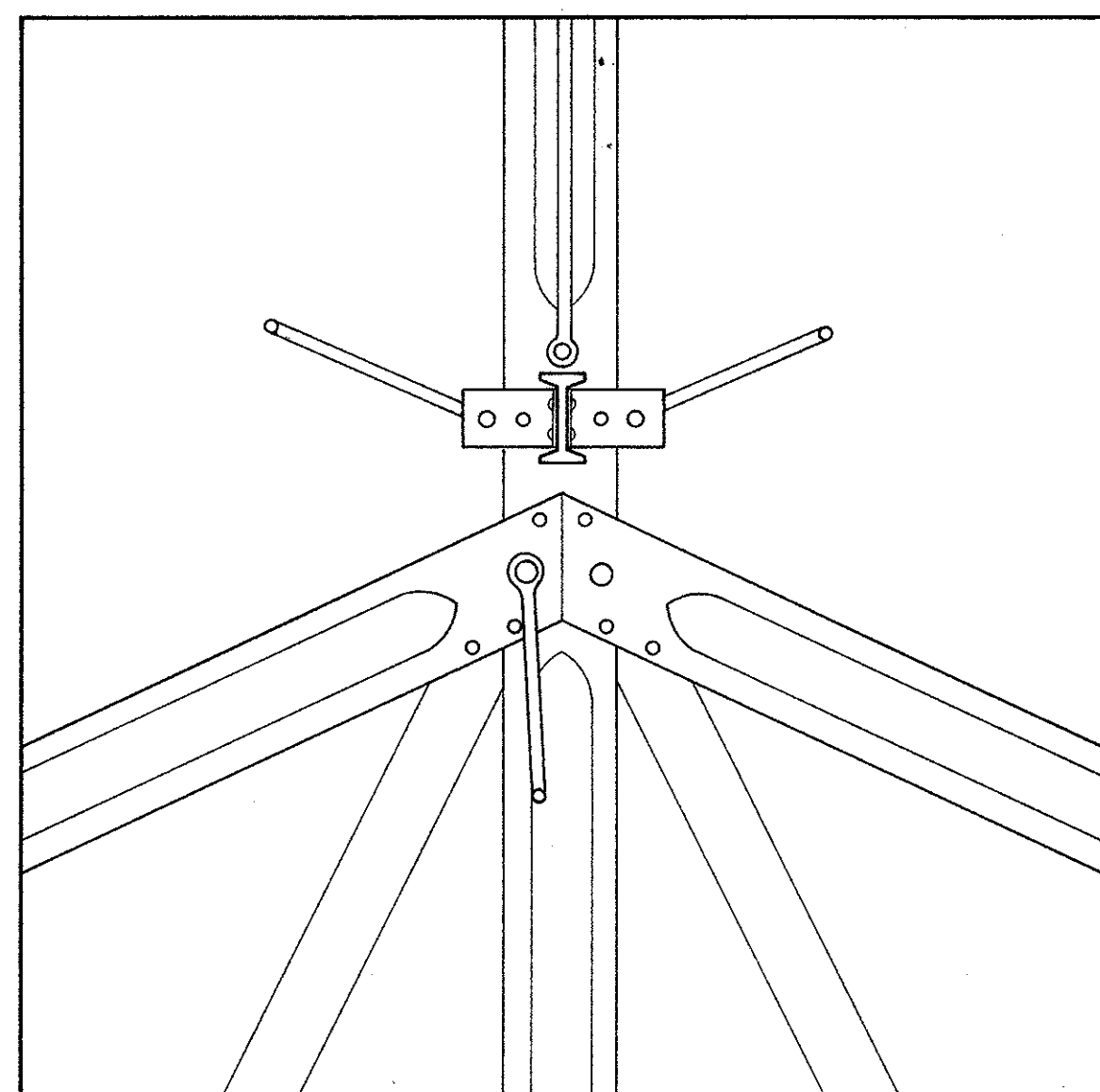
Section based on Bethlehem Steel Corporation Archives: sheet no. 1 dated 18 May 1880 showing Foundry Wing.

Crane shown based on Bethlehem Steel Corporation Archives: sheet no. 1 dated 30 Nov. 1880 showing 25,000 lb. crane for Foundry Wing.

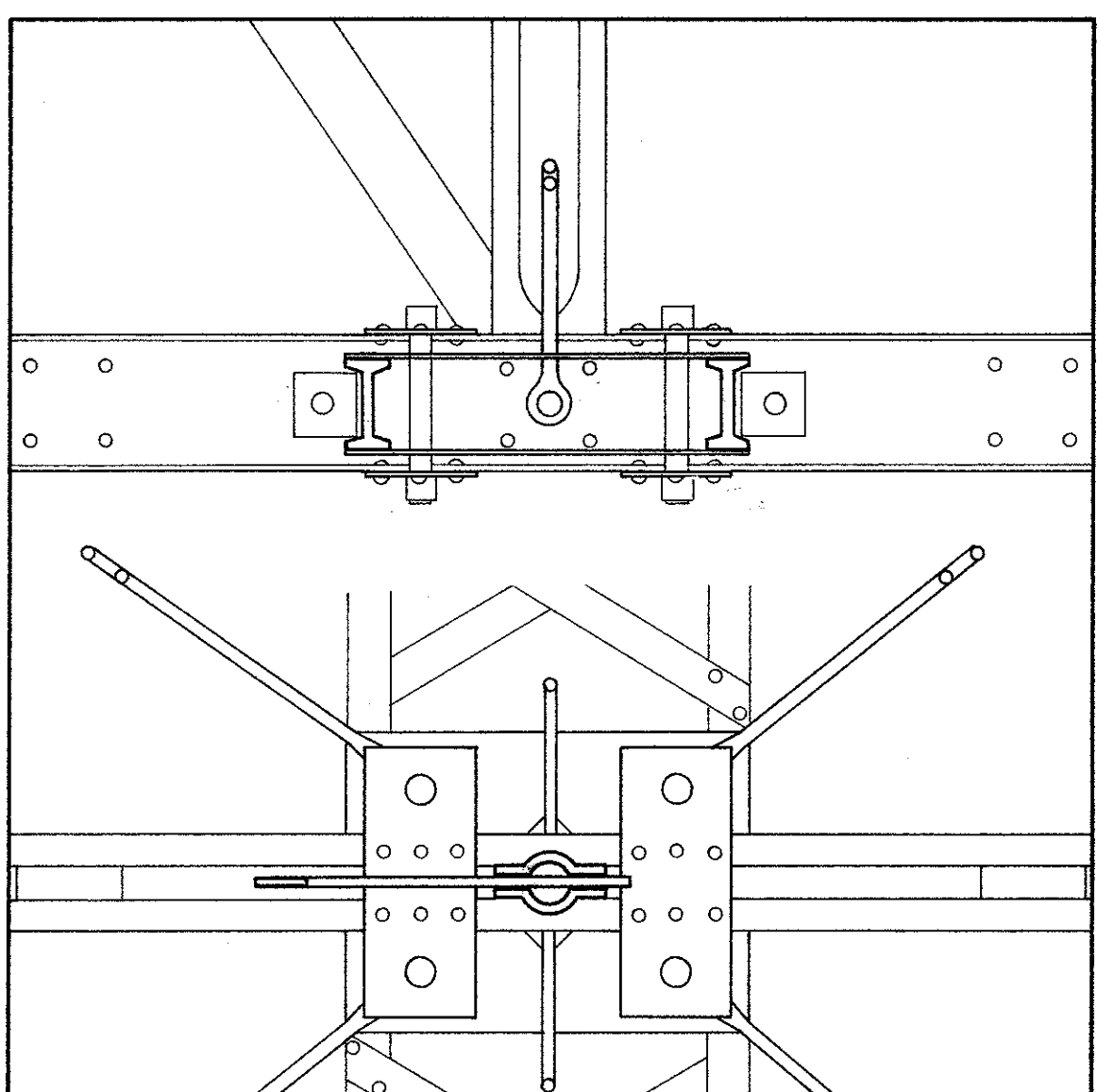
Truss details based on Bethlehem Steel Corporation Archives: sheet no. 2 dated 2 June 1880 showing rafter for Foundry Wing.

Door and transom details based on Bethlehem Steel Corporation Archives: sheet no. 4 dated 11 June 1880 showing details of castings for Foundry Wing. Original door elevation not available.

① Unknown closure.

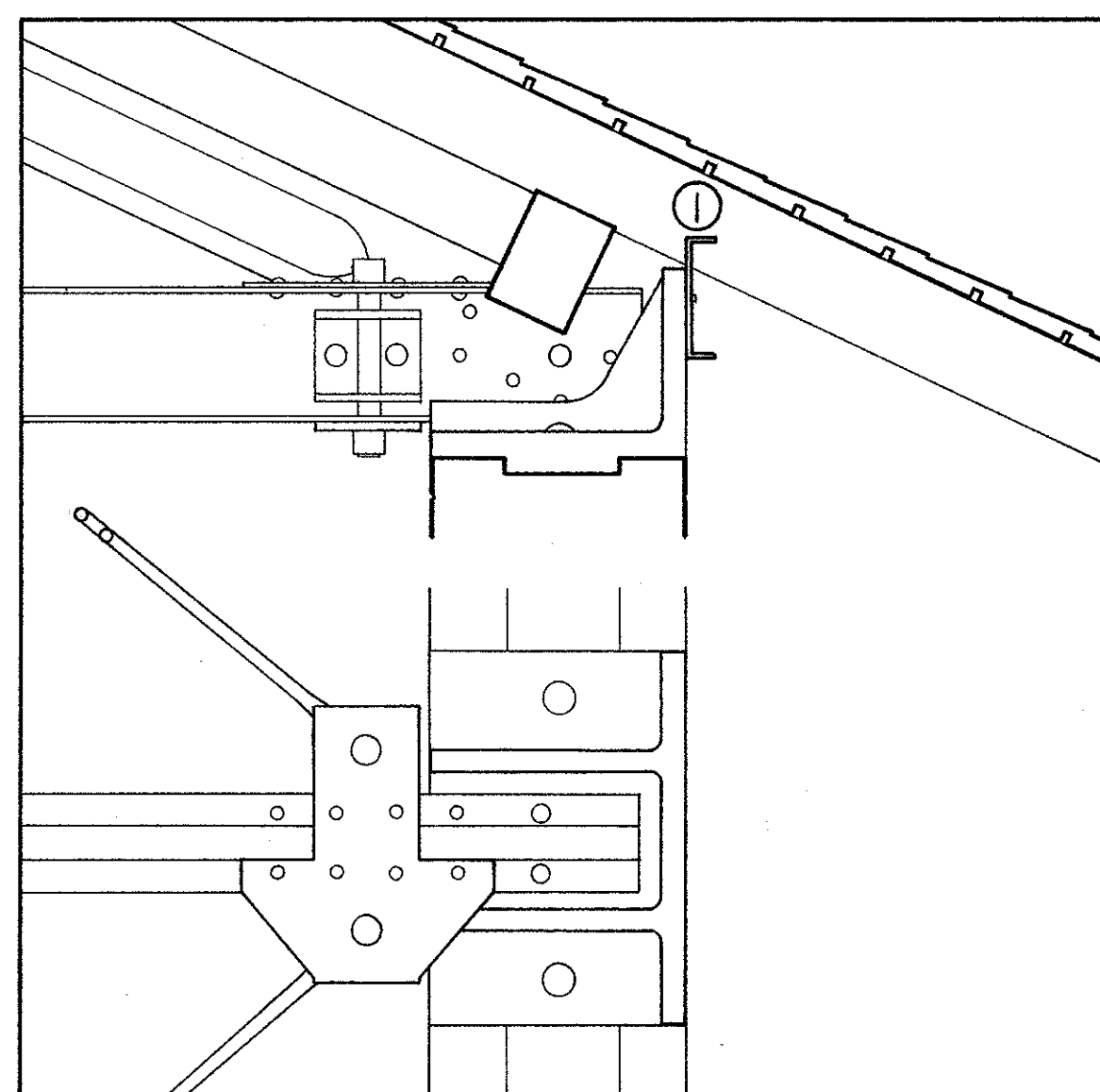


DETAIL B



DETAIL C

0 1 2 FT. 1" = 1'-0"
0 .5 M. 1:12



DETAIL D

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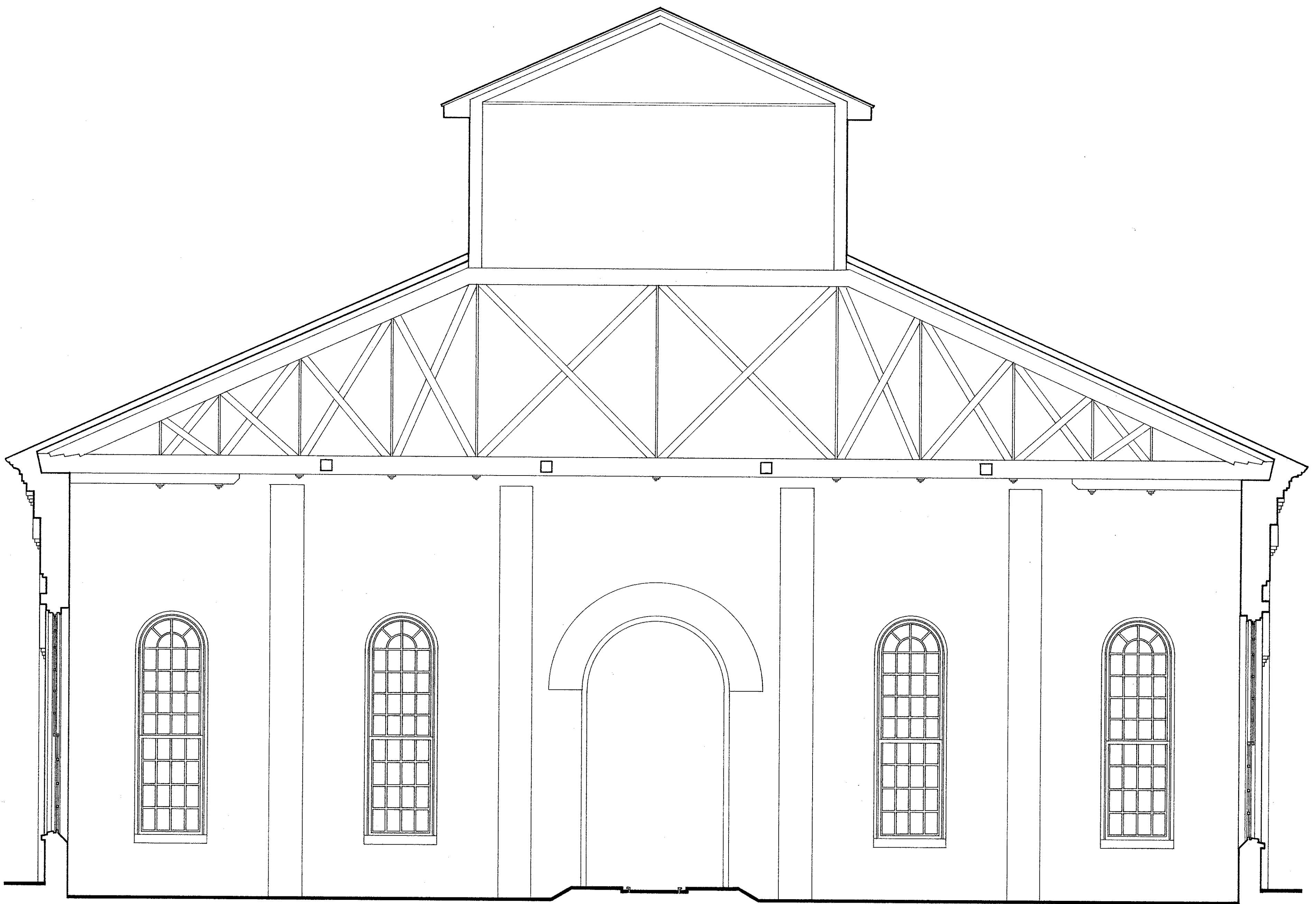
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EAST BANK OF CONEMAUGH RIVER .5 MILES NORTH OF STONYCREEK CONFLUENCE
CAMBRIA COUNTY

PENNSYLVANIA

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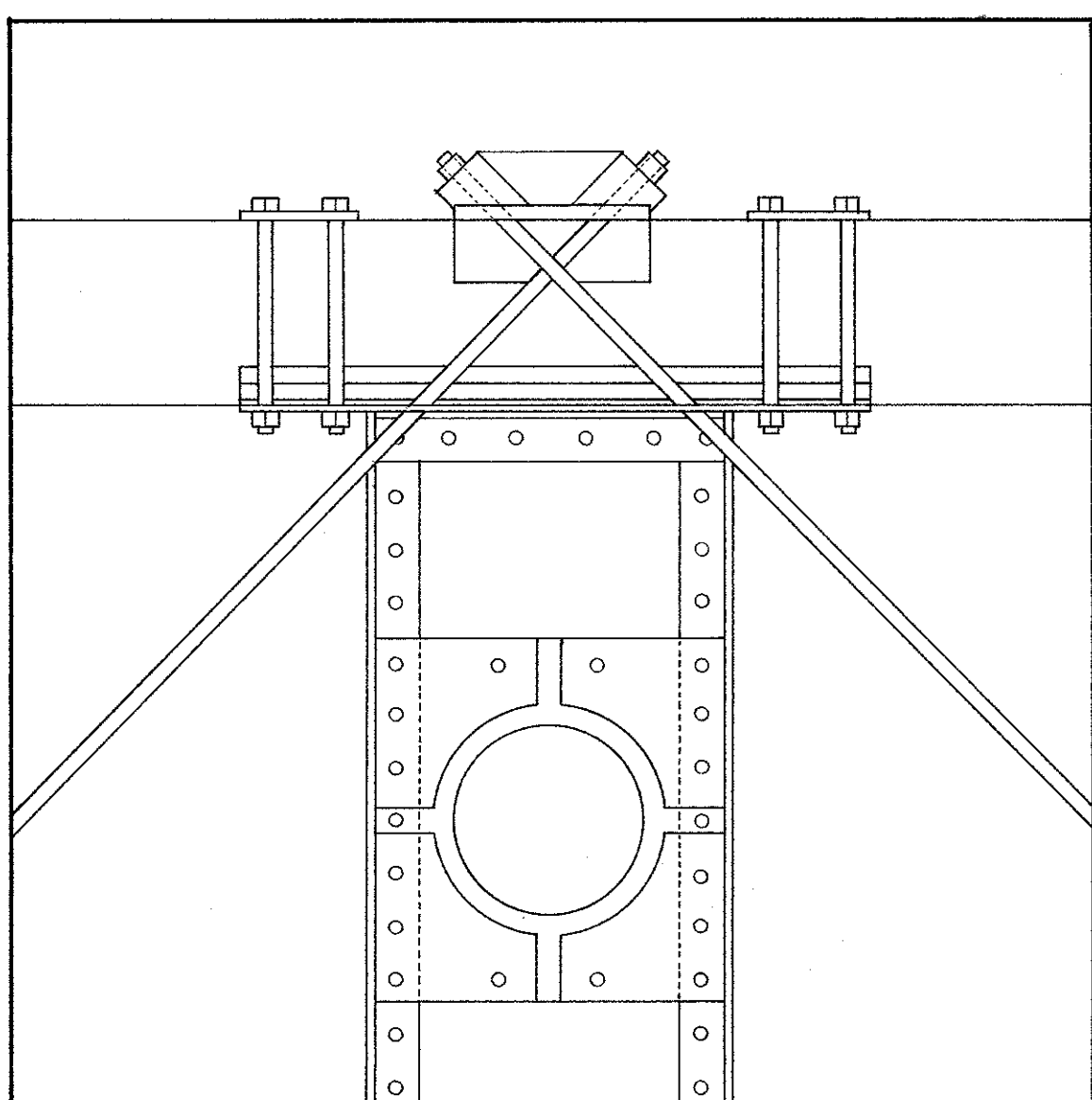
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SECTION BB THROUGH 1865 FOUNDRY

0 5 10 FT. 1/4" = 1'-0"
0 1 2 3 M. 1:48

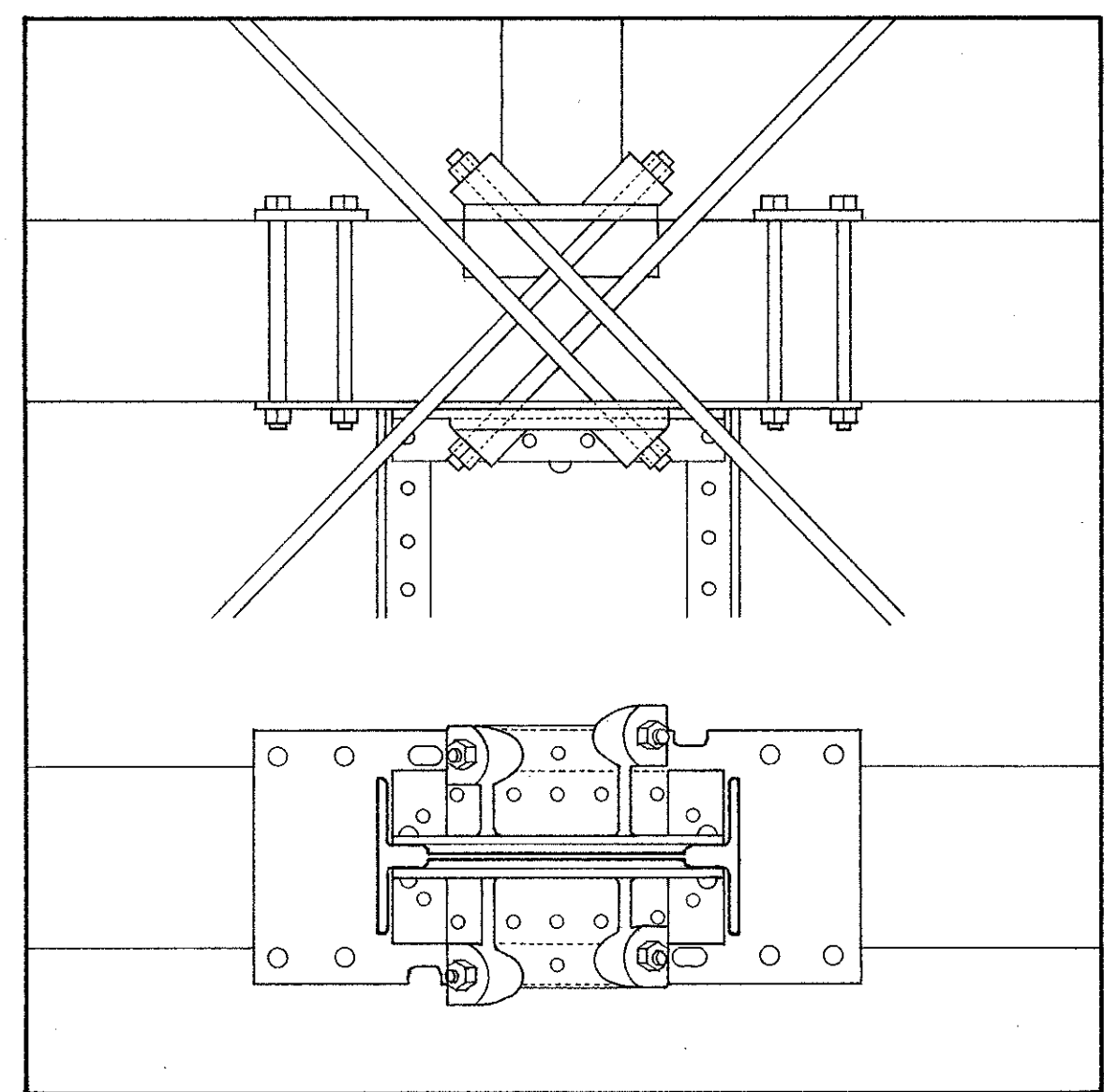


DETAIL A

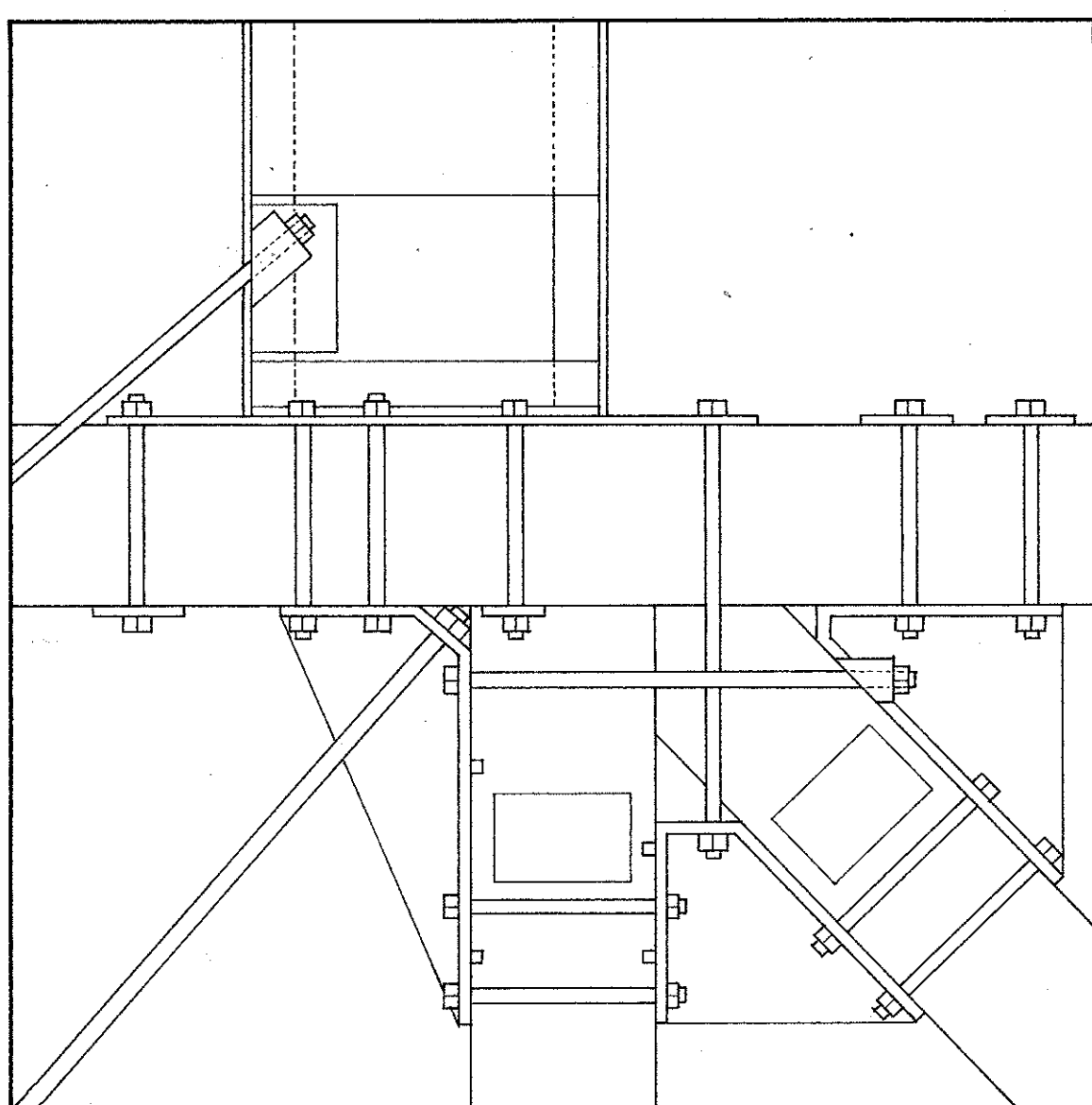
Roof monitor reconstructed from photographs of Lower Works. Positioning of monitor on truss system based on Bethlehem Steel Corporation Archives: drawing no. 1 dated 13 June 1883 showing cross section of shops for fire extinguisher estimate.

Roof truss reconstructed as original based on Bethlehem Steel Corporation Archives: drawing dated 7 Oct. 1881 showing bracing of rafters for crane head support and also on Bethlehem Steel Corporation Archives: sheet no. 1 dated 18 May 1880 - wall of foundry wing showing partial truss of 1865 foundry.

All details reproduced from Bethlehem Steel Corporation Archives: drawing dated 4 Oct. 1881 showing details of bracing roof of 1865 foundry and on Bethlehem Steel Corporation Archives: drawing dated 7 Oct. 1881 showing bracing of rafters for crane head support.

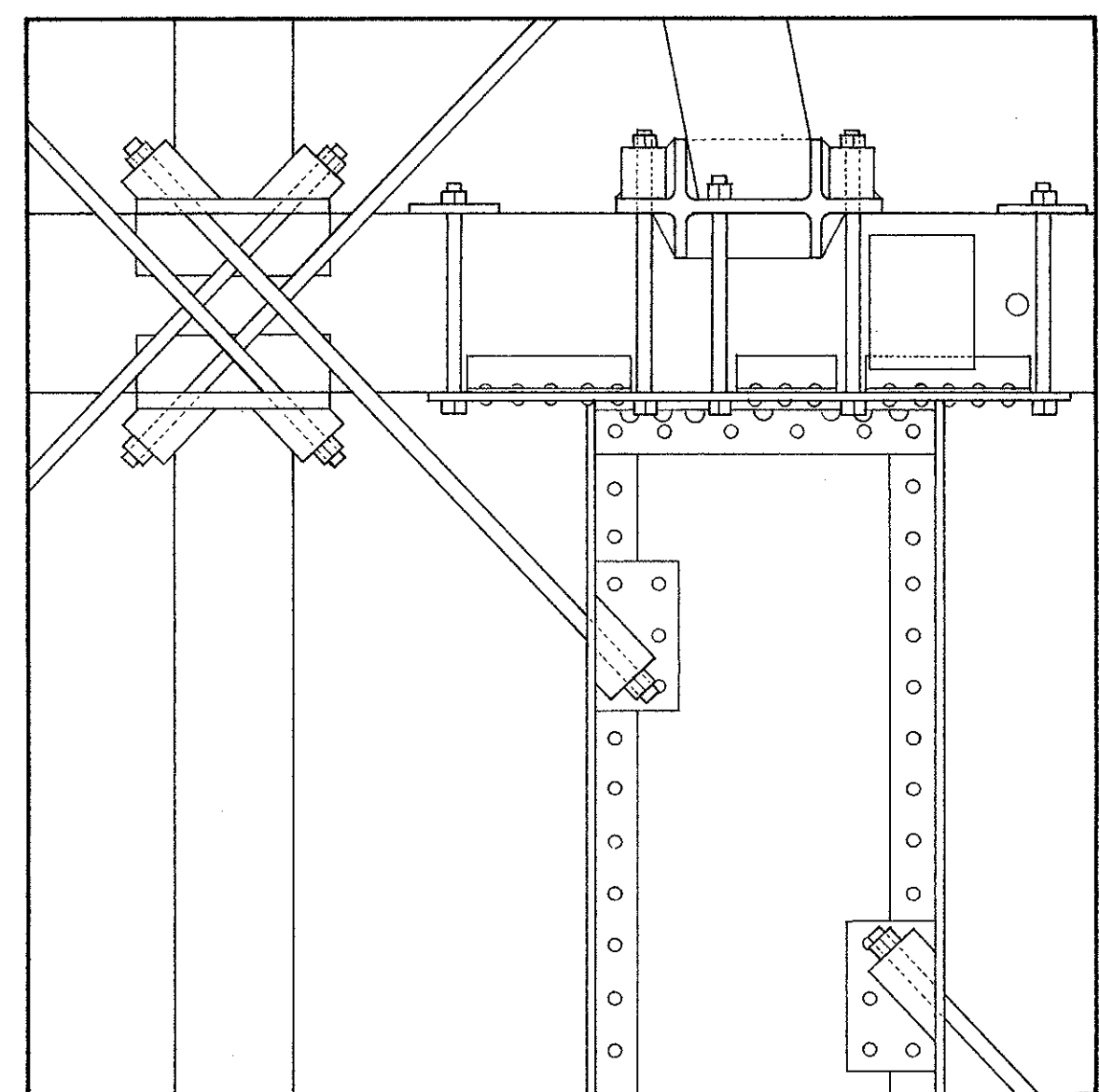


DETAIL B



DETAIL C

0 1 2 FT. 1" = 1'-0"
0 1 5 M. 1:12



DETAIL D

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CAMBRIA IRON COMPANY, FOUNDRY
EAST BANK OF CONEMAUGH RIVER .5 MILES NORTH OF STONYCREEK CONFLUENCE
CAMBRIA COUNTY

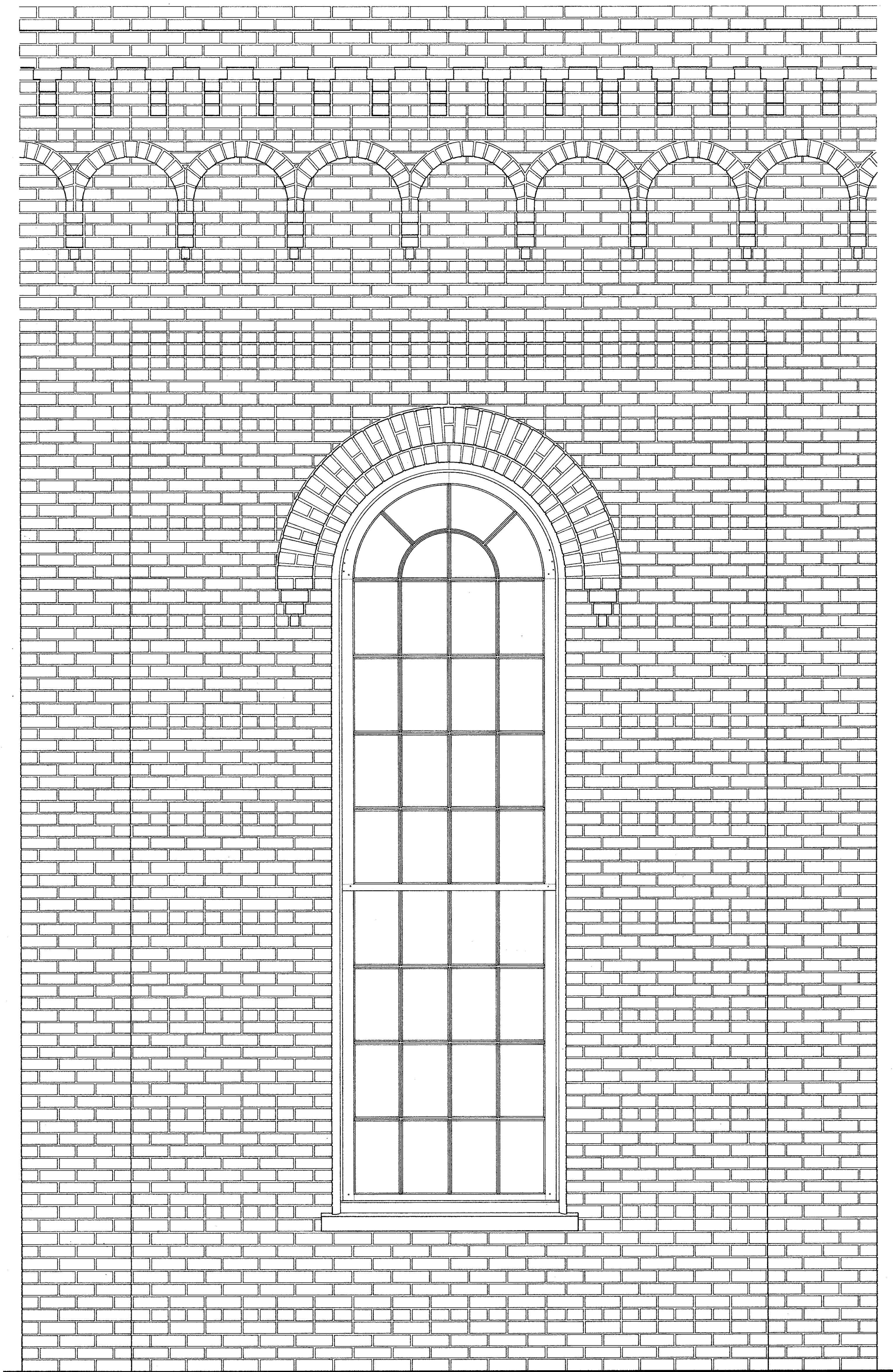
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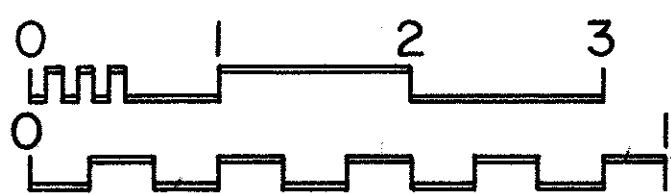
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SECTION



PLAN



FT. 1" = 1' 0"
M. 1:12

TYPICAL WINDOW BAY DETAIL

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EAST BANK OF CONEMAUGH RIVER .5 MILES NORTH OF STONYCREEK CONFLUENCE
CAMBRIA COUNTY

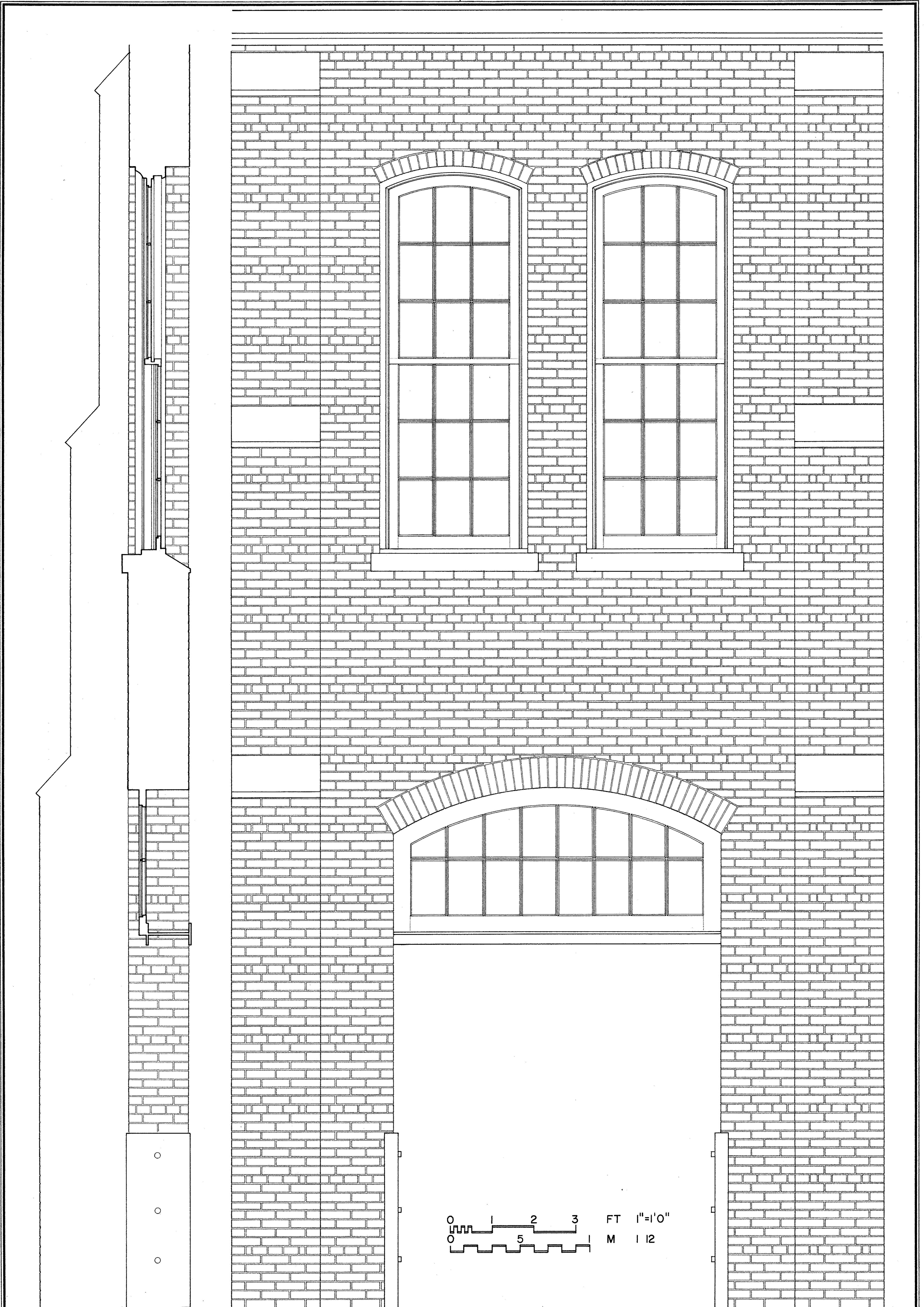
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SECTION

TYPICAL ENTRANCE BAY DETAIL

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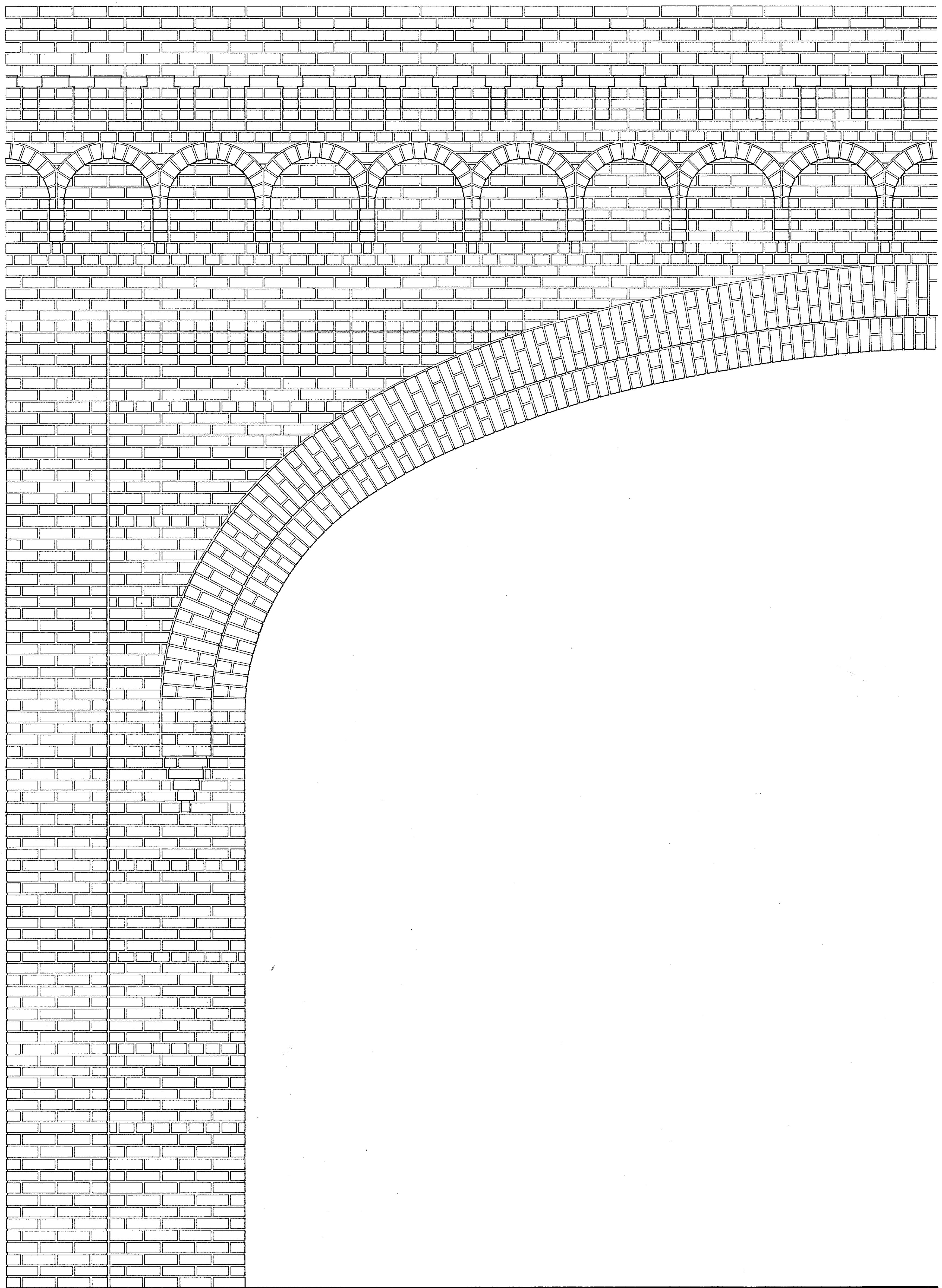
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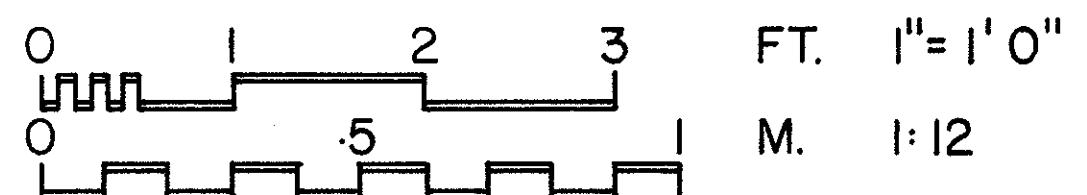
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DETAIL OF MAIN ENTRANCE - EAST ELEVATION



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