

CAMBRIA IRON COMPANY, BLACKSMITH SHOP
(Bethlehem Steel Company, Blacksmith Shop)
Cambria Iron Works
Lower Works
Johnstown
Cambria County
Pennsylvania

HAER No. PA-109-A

HAER
PA
11-JOTO,
135A-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

REDUCED COPIES OF MEASURED DRAWINGS

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, BLACKSMITH SHOP
(Bethlehem Steel Company, Blacksmith Shop)
Cambria Iron Works

HAER
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Location: Lower Works, Johnstown, Cambria
County, Pennsylvania
USGS Quad: Johnstown, Pennsylvania
(1:24000)
UTM: 17 E.676380 N.4466610

Date of Construction: ca. 1864

Fabricator: unknown

Present Owner: Bethlehem Steel Company

Present Use: Blacksmith Shop

Significance: The blacksmith shop is the earliest
surviving building of the Cambria
Iron Company. The shop produced a
wide range of metal products
throughout the nineteenth and early
twentieth centuries, and contains a
steam-powered Chambersburg forging
hammer, now converted to electric
power.

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

The earliest surviving building of the Cambria Iron Company is the Blacksmith Shop, erected about 1864. (The date of construction of the Blacksmith Shop is generally given as 1854, however, based on site maps, an early birdseye view of the iron works, and the Cambria County Tax Assessment Records, it appears that the date is actually about 1864.) The Blacksmith Shop produced a wide range of metal products throughout the nineteenth and early twentieth centuries. It contained a variety of grinders and tools, as well as steam-powered hammers and coal-fired furnaces.

Two additions to the Blacksmith Shop were made between about 1870 and 1885. The first consisted of a one-and-a-half-story, brick building, adjoining the west side of the octagon. The second addition, a large, two-story, brick wing erected to the east was built to provide room for an additional steam hammer. Constructed about 1885, this addition, with matching arched windows, now contains an overhead crane and a steam-powered, five-ton W. H. Sellers hammer, manufactured in Philadelphia, and dating to about 1900. Another addition was made about 1900 when a one-story brick building with a sloping roof was erected along the southwest facade. This addition contained more forges and an overhead crane. Finally, in the 1920s, Bethlehem Steel built a two-story, brick structure off the south elevation to serve as a locker room and lavatory. At its peak in the late nineteenth and early twentieth century, the Blacksmith Shop employed nearly 100 men and ran two and three shifts.

The Blacksmith Shop continues to function in its original role; however, much of the metalwork is carried out in conjunction with materials testing. The most frequently used forging hammer in the shop, a Chambersburg hammer that was originally steam-powered, now operates with compressed air. There is also an electrically powered Chambersburg hammer. It is seldom used, however. All of the furnaces are fired with natural gas. Only a handful of men currently work in the shop.

The original (ca. 1864) building is an octagonally shaped one-story structure, with an octagonal cupola, containing heavy timbered roof trusses with iron tension rods, common-bond, red brick walls and pilasters, and measuring approximately 70' x 70'. An 1870s brick addition extends to the west, a ca. 1900 shop building extends to the south (connecting a two-story lavatory built of brick in the 1920s), and a one-story brick annex, built between 1884 and 1885 extends to the east. The Blacksmith Shop contains several forging hammers and furnaces.

SOURCES

Beer, D.G., Goodhue, J.H., and Roe, F.B. "Cambria County, Pennsylvania," (Philadelphia: A. Pomeroy, 1867).

Birdseye View of Cambria Ironworks, (labeled ca. 1860; probably dating from ca. 1867), on display at the Johnstown Flood Museum).

Cambria Iron Company. "Smith Shop Annex," original drawing (ca. 1884) in the possession of the Bethlehem Steel Corporation, Engineering Division, Johnstown.

Doran, T. "Plan of the Boroughs Johnstown and Conemaugh Together with Cambria Iron Works, Cambria, and Prospect, Cambria County, Pennsylvania," surveyed, drawn, and published by T. Doran, 1854.

Fritz, John. Autobiography of John Fritz. (New York: ASME, 1912).

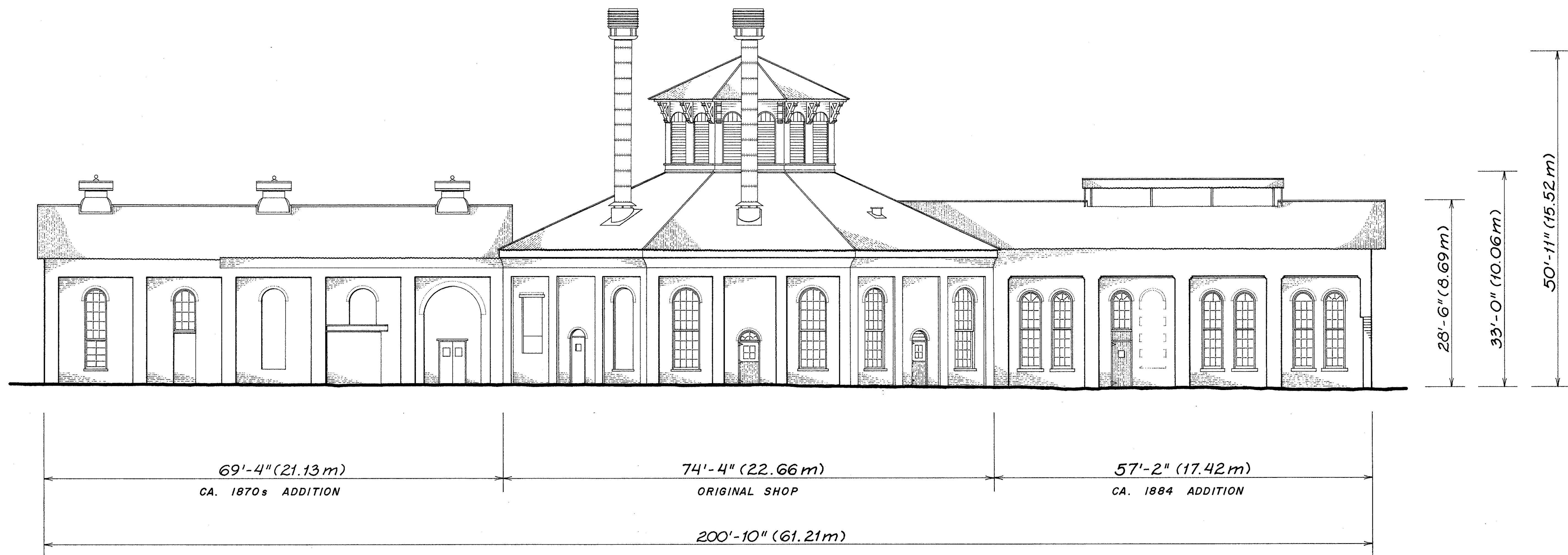
Holley, A.L. and Smith, Lenox. "American Iron and Steel Works: Works of the Cambria Iron Company," Engineering: An Illustrated Weekly Journal, Vol. 26, (12 July 1878), 21-24.

"Key Plan, Johnstown Plants: February 16, 1923; revised January 26, 1927, March 29, 1930, and February 13, 1939," (copy available at the Canal Museum, Center for Canal History and Technology, Easton, Pennsylvania).

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 Co., 1891 and 1911.

CAMBRIA IRON COMPANY: BLACKSMITH SHOP • CIRCA 1864



South Elevation

MATERIALS OF CONSTRUCTION:

CORRUGATED METAL ROOF
(ORIGINALLY SLATE)
TALL METAL STACK ADDED CA. 1938
RED BRICK COMMON BOND EXTERIOR
Note: TESTING SHED, LOCKER ROOM,
CHAIN SHOPS AND OFFICE ARE
DELETED FOR CLARITY (REFER TO
FIRST FLOOR PLAN)

One of the oldest extant structures of the Cambria Ironworks, the Blacksmith Shop, was erected by the Cambria Iron Company about 1864. It appears to have contained originally the impressive octagonal brick structure topped by a wooden cupola. Following its completion, the Blacksmith Shop served the ironworks

producing a wide range of metal works. Throughout the nineteenth and early twentieth centuries, it contained steam-powered hammers, coal-fired forges and a variety of grinders, anvils, vises, hammers, and many other tools. During this period the shop employed as many as 100 men.

Scale: $\frac{1}{8}" = 1'-0"$
0 5 10 15 20 feet
0 1 2 3 4 5 meters

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JOHNSTOWN

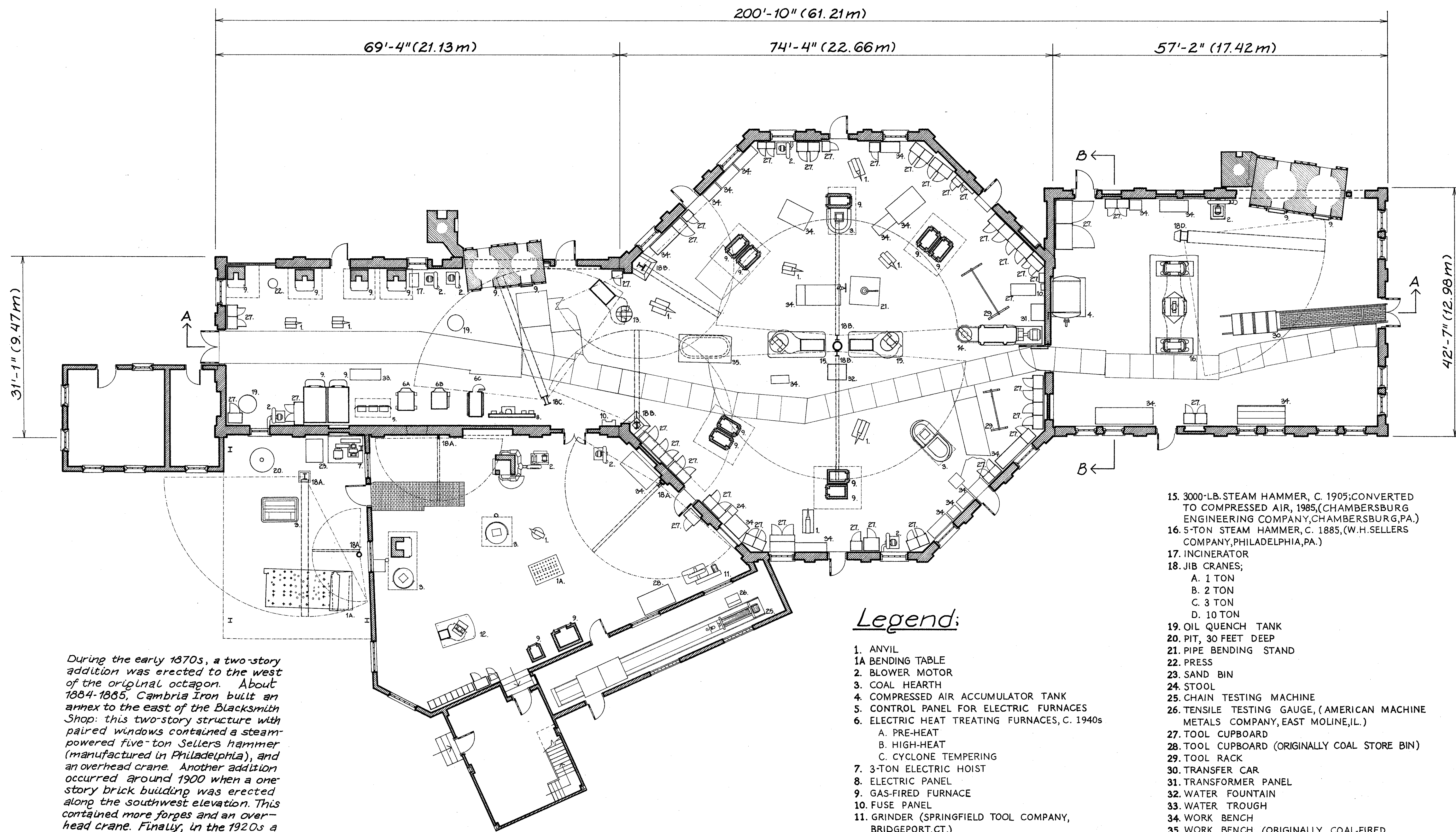
CAMBRIA IRON COMPANY, BLACKSMITH SHOP - CIRCA 1864
EAST BANK OF CONEWAUGH RIVER, 5 MILES NORTH OF STONYCREEK CONFLUENCE
CAMBRIA COUNTY

PENNSYLVANIA

SHEET
1 of 5

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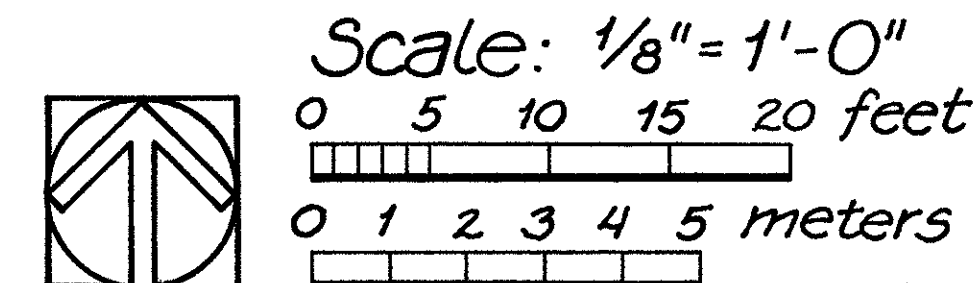
During the early 1870s, a two-story addition was erected to the west of the original octagon. About 1884-1885, Cambria Iron built an annex to the east of the Blacksmith Shop: this two-story structure with paired windows contained a steam-powered five-ton Sellers hammer (manufactured in Philadelphia), and an overhead crane. Another addition occurred around 1900 when a one-story brick building was erected along the southwest elevation. This contained more forges and an overhead crane. Finally, in the 1920s a two-story brick structure was built to serve as a locker room and lavatory. The Blacksmith Shop continues to function in its original role, however much of the metalwork is carried out in conjunction with materials testing. The main hammer is now operated with compressed air and the forges are gas-fired. Only a handful of men currently work in the shop.

Plan

Legend:

1. ANVIL
- 1A. BENDING TABLE
2. BLOWER MOTOR
3. COAL HEARTH
4. COMPRESSED AIR ACCUMULATOR TANK
5. CONTROL PANEL FOR ELECTRIC FURNACES
6. ELECTRIC HEAT TREATING FURNACES, C. 1940s
 - A. PRE-HEAT
 - B. HIGH-HEAT
 - C. CYCLONE TEMPERING
7. 3-TON ELECTRIC HOIST
8. ELECTRIC PANEL
9. GAS-FIRED FURNACE
10. FUSE PANEL
11. GRINDER (SPRINGFIELD TOOL COMPANY, BRIDGEPORT, CT.)
12. 1000-LB. STEAM HAMMER (BEMENT MILES COMPANY, PHILADELPHIA, PA.)
13. 4000-LB. STEAM HAMMER, 1888; CONVERTED TO COMPRESSED AIR, 1989, (BEMENT MILES COMPANY, PHILADELPHIA, PA.)
14. 2000-LB. MOTOR-DRIVEN HAMMER, 1940, (CHAMBERSBURG ENGINEERING COMPANY, CHAMBERSBURG, PA.)

15. 3000-LB. STEAM HAMMER, C. 1905; CONVERTED TO COMPRESSED AIR, 1985, (CHAMBERSBURG ENGINEERING COMPANY, CHAMBERSBURG, PA.)
16. 5-TON STEAM HAMMER, C. 1885, (W.H. SELLERS COMPANY, PHILADELPHIA, PA.)
17. INCINERATOR
18. JIB CRANES;
 - A. 1 TON
 - B. 2 TON
 - C. 3 TON
 - D. 10 TON
19. OIL QUENCH TANK
20. PIT, 30 FEET DEEP
21. PIPE BENDING STAND
22. PRESS
23. SAND BIN
24. STOOL
25. CHAIN TESTING MACHINE
26. TENSILE TESTING GAUGE, (AMERICAN MACHINE METALS COMPANY, EAST MOLINE, IL.)
27. TOOL CUPBOARD
28. TOOL CUPBOARD (ORIGINALLY COAL STORE BIN)
29. TOOL RACK
30. TRANSFER CAR
31. TRANSFORMER PANEL
32. WATER FOUNTAIN
33. WATER TROUGH
34. WORK BENCH
35. WORK BENCH (ORIGINALLY COAL-FIRED HEARTH CONVERTED C. 1985)



DELINEATED BY: Michael Drasnin, 1987; Darius Vrubluskas, 1989; Robert G. Colosimo, 1990; Chris Madrid, 1994

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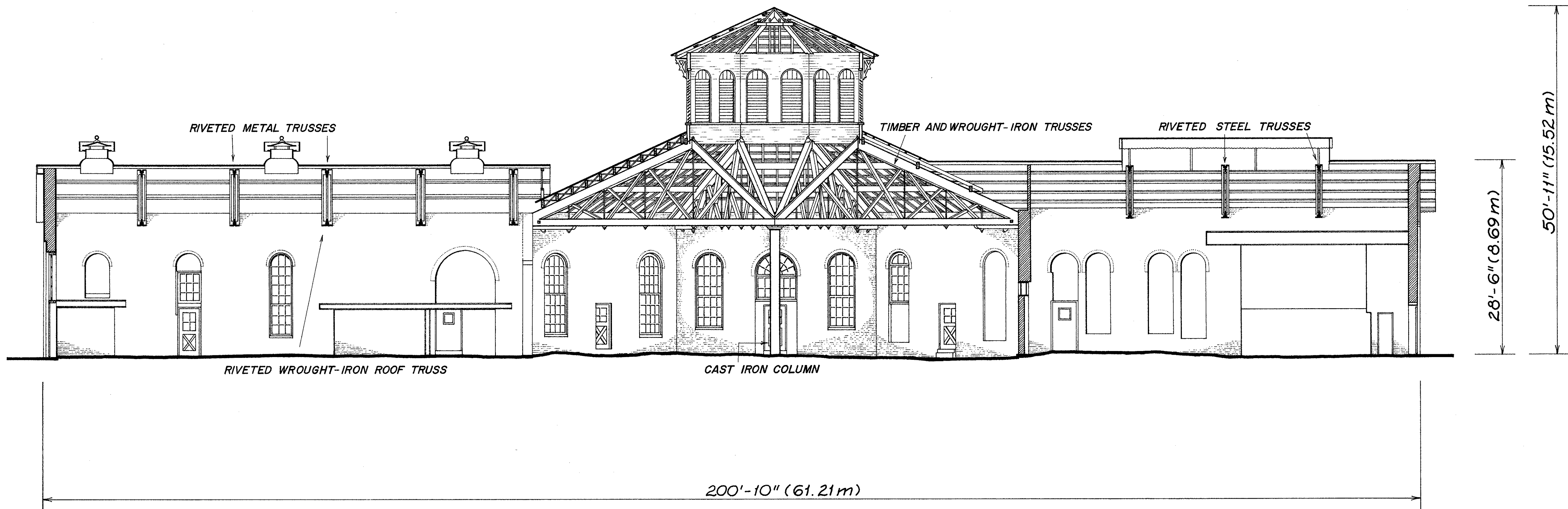
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CAMBRIA COUNTY

PENNSYLVANIA

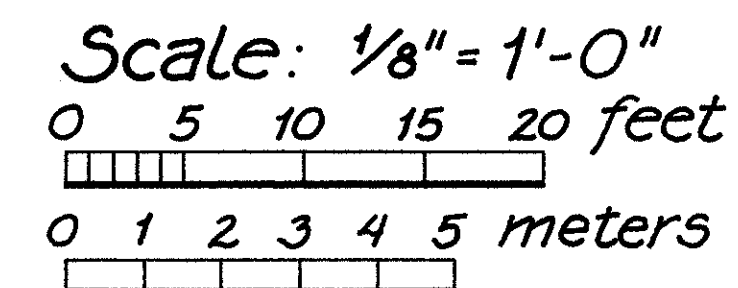
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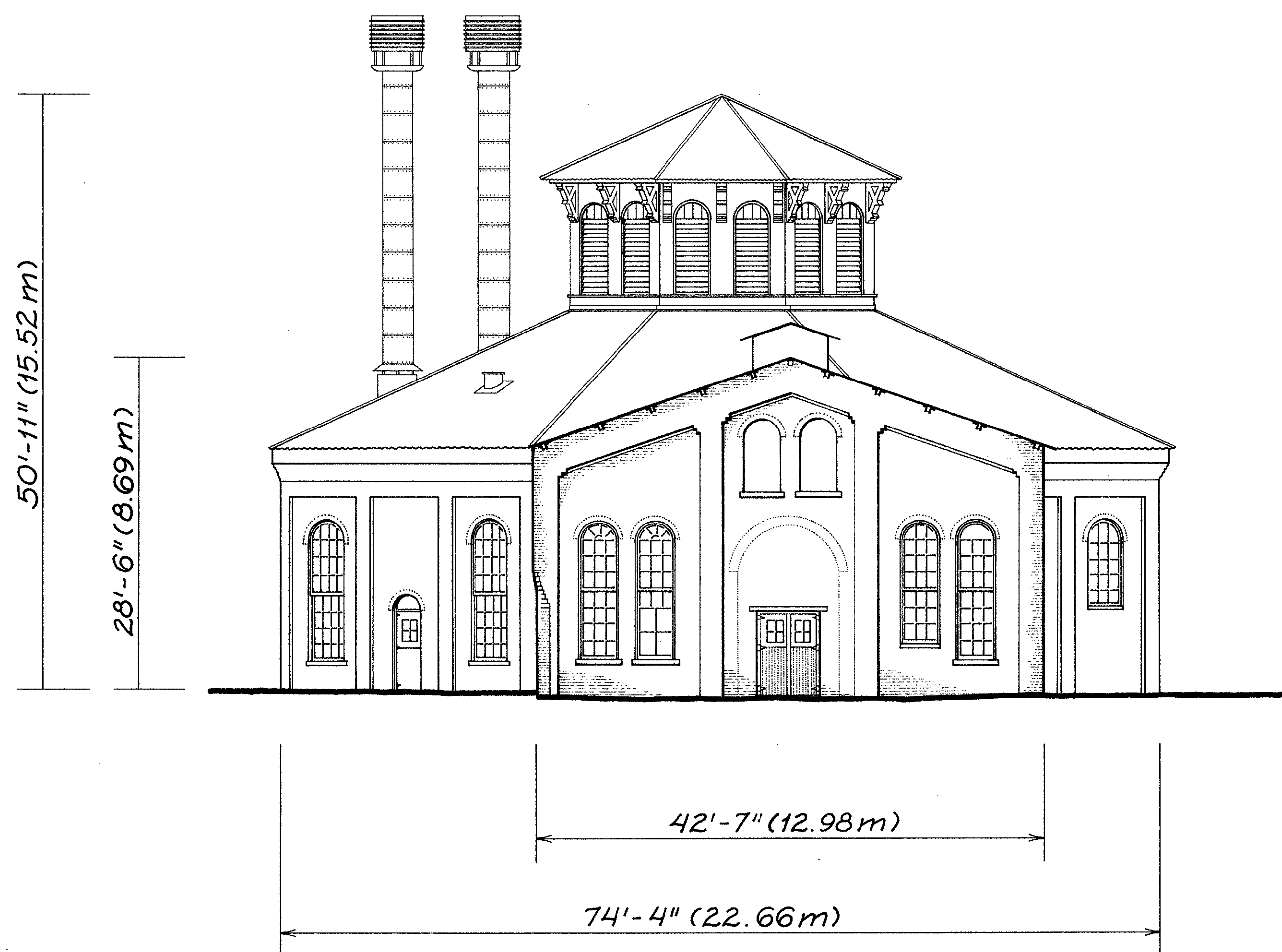
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CAMBRIA COUNTY

PENNSYLVANIA

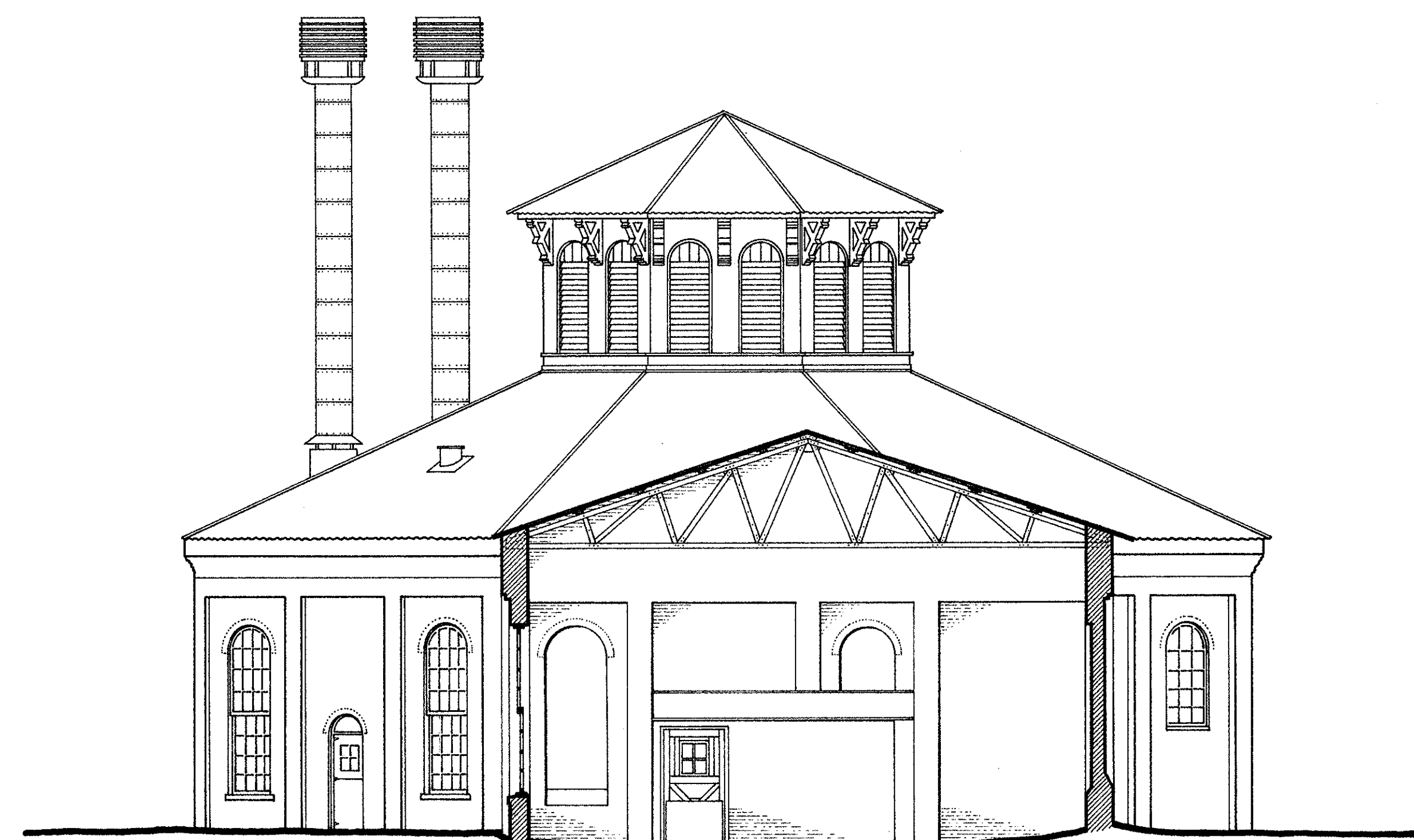
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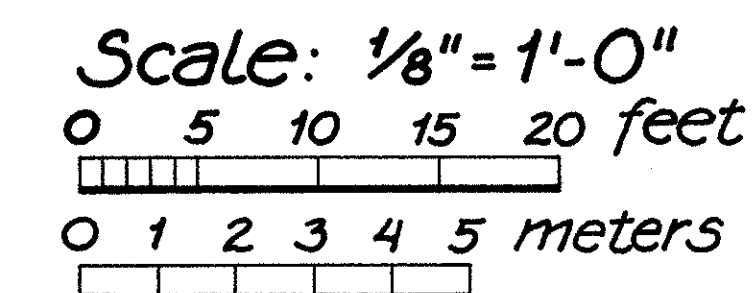
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East Elevation



Section B-B



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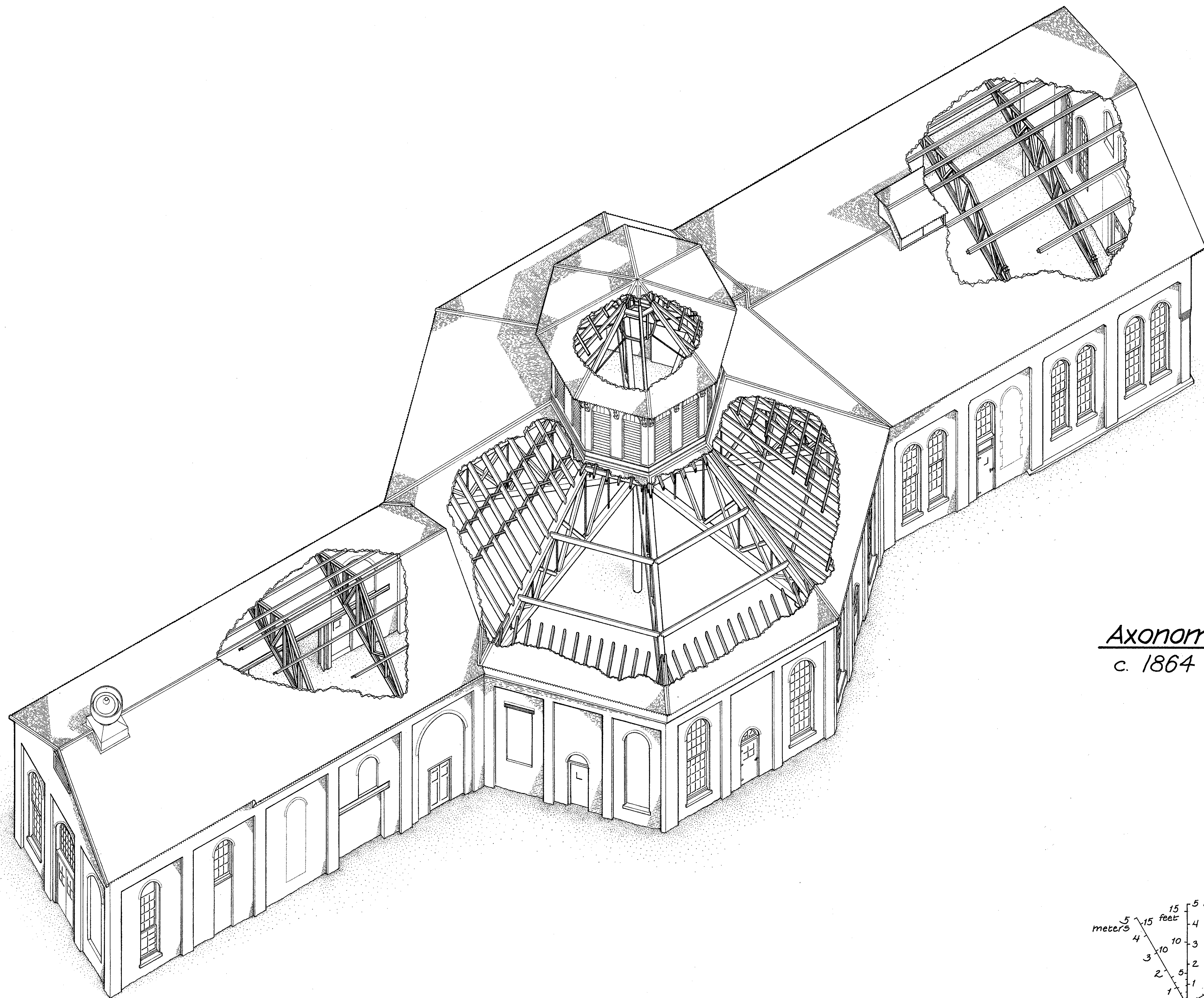
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EAST BANK OF CONEMAUGH RIVER, 5 MILES NORTH OF STONYCREEK CONFLUENCE
CAMBRIA COUNTY

PENNSYLVANIA

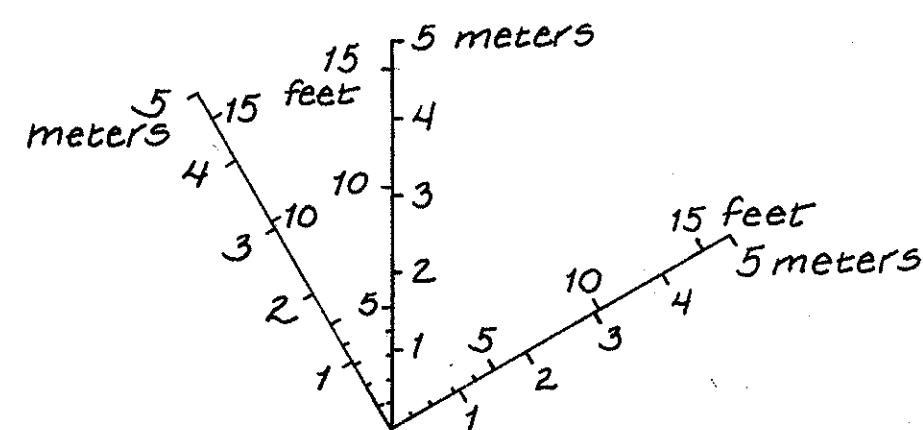
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Axonometric
c. 1864



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JOHNSTOWN

CAMBRIA IRON COMPANY BLACKSMITH SHOP - CIRCA 1864
EAST BANK OF CONEMAUGH RIVER .5 MILES NORTH OF STONYCREEK CONFLUENCE
CAMBRIA COUNTY

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HISTORIC AMERICAN
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