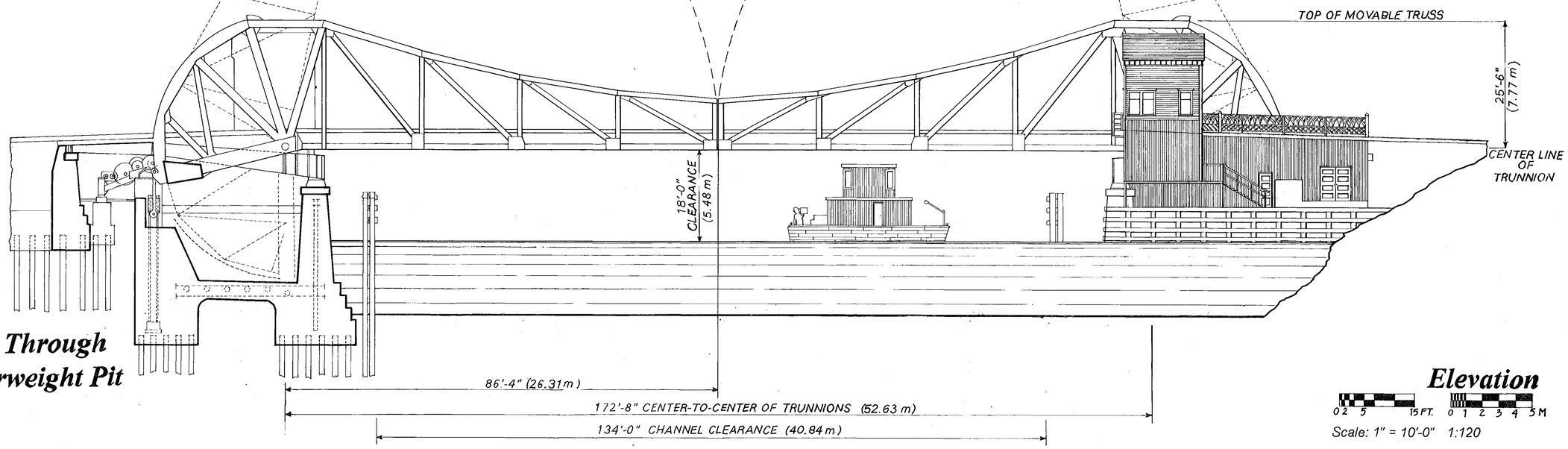
TRIM LINE

WEST DIVISION STREET BRIDGE

SPANNING NORTH BRANCH OF CHICAGO RIVER

1904 · CHICAGO, ILLINOIS



Elevation

0 2 5 15 FT. 0 1 2 3 4 5 M

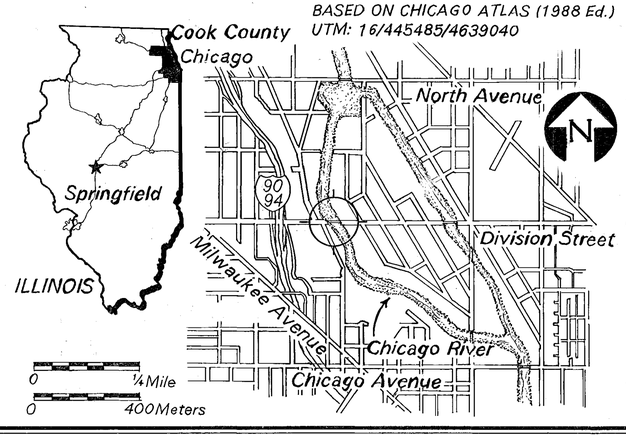
Scale: 1" = 10'-0" 1:120

Section Through Counterweight Pit

Source: Chicago Bureau of Engineering, "Division St. Bridge, over North Branch Chicago River," drawings, 1902. Structure No. 6016, Chicago Department of Transportation plan files.

Movable bridges, or drawbridges, are built over waterways when it is impractical to construct fixed bridges of sufficient height for the passage of vessels. By 1870, the most common American drawbridge was the swing bridge, horizontally rotating on a center pier to open two channels. The center pier, however, was a hazard for the ever-larger craft of the late nineteenth century, especially on crowded, narrow waterways such as the Chicago River. By the 1890s, Chicago swing spans could no longer handle the largest vessels, and the city's river commerce began to decline.

In 1900, the Chicago Department of Public Works developed a new movable bridge design based on London's 1894 Tower Bridge. The type was known as a double-leaf "bascule" – French for seesaw. Each movable leaf rotated vertically on a steel axle, or trunnion, leaving the entire river channel open for shipping. With the front of each leaf counter-balanced by weights at the rear, relatively small motors could open and close the span. The 1904 West Division Street Bridge was the third of about fifty bascules built in the city. It included all the basic features of the "Chicago Type Bascule": two truss-supported leaves pivoting on trunnions, rigidly attached below-deck counterweights, and electric-powered operating machinery with a pinion-activated rack on the rear of each truss.



The Chicago Bridges Recording Project is part of the Historic American Engineering Record (HAER), a long-range program to document historically significant engineering and industrial works in the United States. The HAER program is administered by the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) Division of the National Park Service, U.S. Department of the Interior, E. Blaine Cliver, Chief. The project was sponsored during the summer of 1999 by the City of Chicago, Richard M. Daley, Mayor; and the Chicago Department of Transportation, Thomas R. Walker, Commissioner, and S. L. Kaderbek, Chief Engineer, Bureau of Bridges and Transit.

The field work, measured drawings, historical reports, and photographs were prepared under the direction of Eric N. DeLony, Chief of HAER. The recording team consisted of Architectural Field Supervisor James P. Hanley (Peoria, IL); Engineering Field Supervisor Justin M. Spivey (HAER); Architects Susan H. Gordon (University of Virginia), Karen L. Hassey (University of Virginia), Julia M. Koslow (University of Notre Dame), and Domagoj Kranjcevic (ICOMOS, University of Zagreb, Croatia); and Historians Jeffrey A. Hess (Minneapolis, MN) and Matthew T. Sneddon (University of Washington). Large-format photographs were taken by Jet Lowe (HAER). Bureau of Bridges and Transit Assistant Chief Engineer Christopher Holt served as department liaison.

DELINEATED BY: Julia Koslow, 1999

CHICAGO BRIDGES RECORDING PROJECT
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

WEST DIVISION STREET BRIDGE
SPANNING NORTH BRANCH OF CHICAGO RIVER AT WEST DIVISION STREET
COOK COUNTY
CHICAGO ILLINOIS

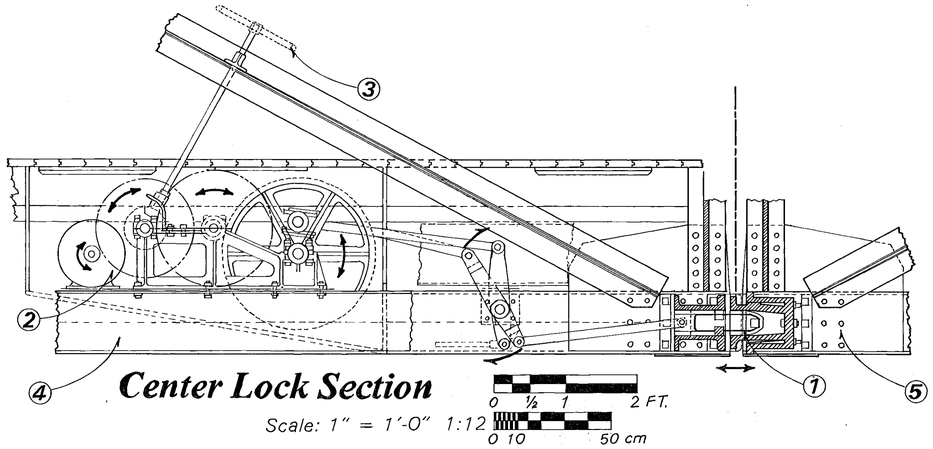
SHEET 1 OF 4

HISTORIC AMERICAN ENGINEERING RECORD
IL-148

609423

TRIM LINE

Center Lock and Deck

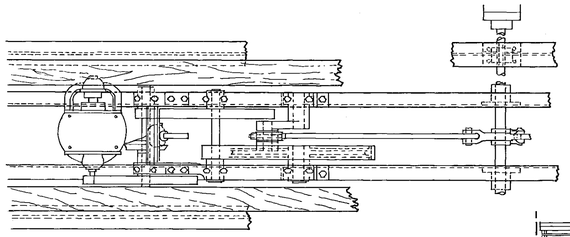


Center Lock Section

Scale: 1" = 1'-0" 1:12

0 ½ 1 2 FT.

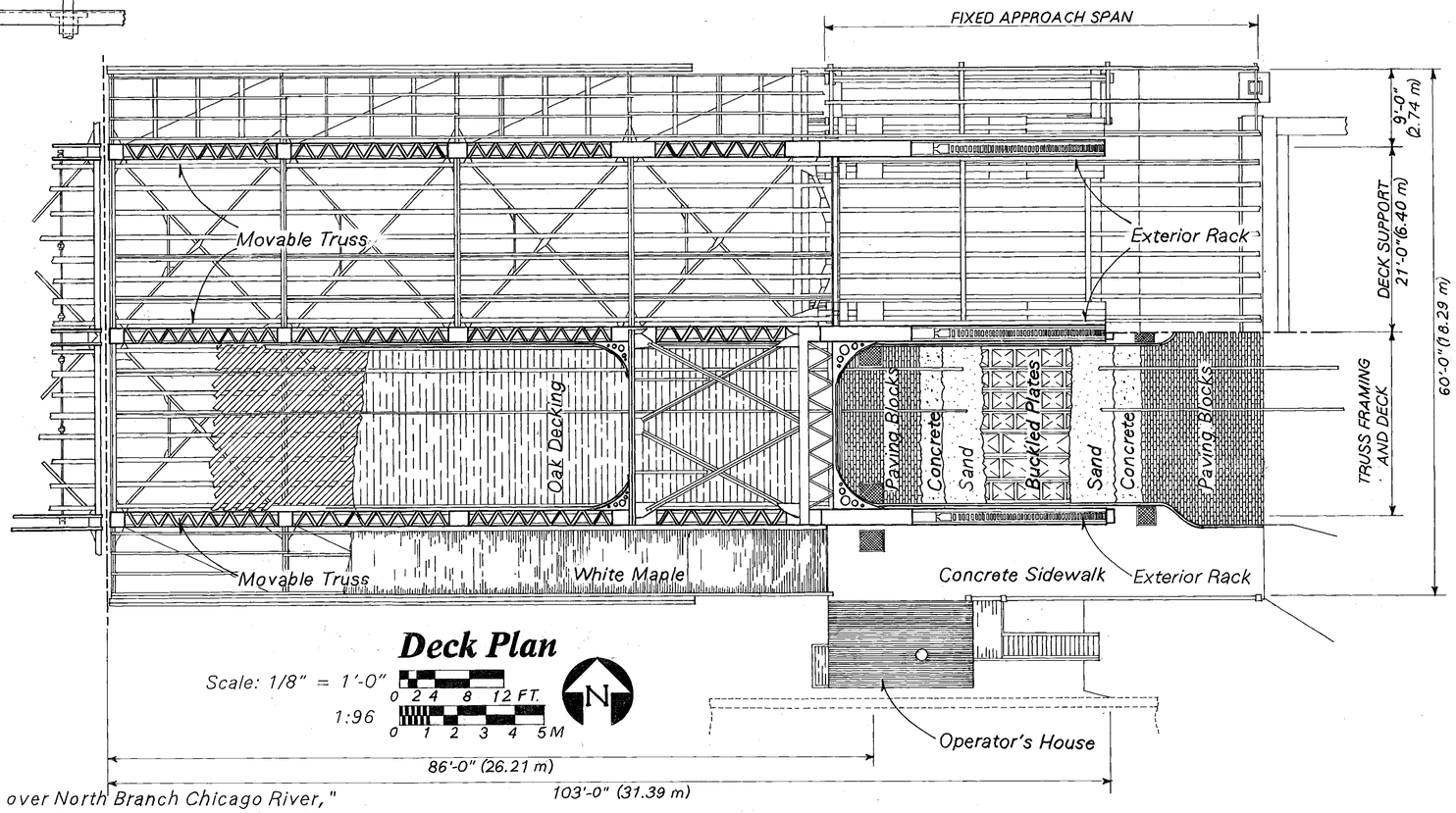
0 10 50 cm



Center Lock Plan

Key

1. Locking Bolt
2. Motor
3. Detachable Hand Wheel
4. Lower Chord of West Movable Truss
5. Lower Chord of East Movable Truss



Deck Plan

Scale: 1/8" = 1'-0"

1:96

0 2 4 8 12 FT.

0 1 2 3 4 5 M

N

Source: Chicago Bureau of Engineering, "Division St. Bridge, over North Branch Chicago River," drawings, 1902. Structure No. 6016, Chicago Department of Transportation plan files.

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CHICAGO BRIDGES RECORDING PROJECT

UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE

CHICAGO

WEST DIVISION STREET BRIDGE

SPANNING NORTH BRANCH OF CHICAGO RIVER AT WEST DIVISION STREET

COOK COUNTY ILLINOIS

SHEET 2 OF 4

HISTORIC AMERICAN ENGINEERING RECORD IL-148

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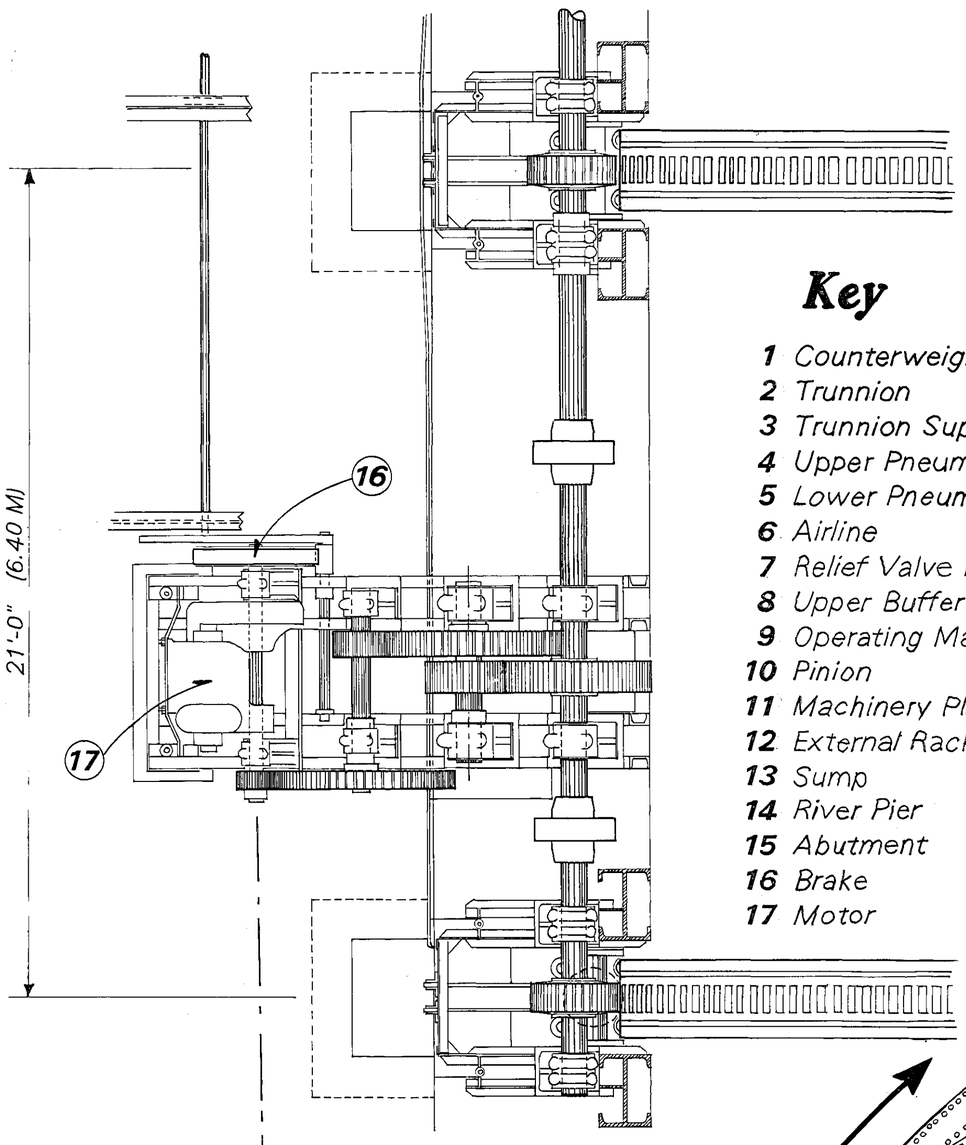
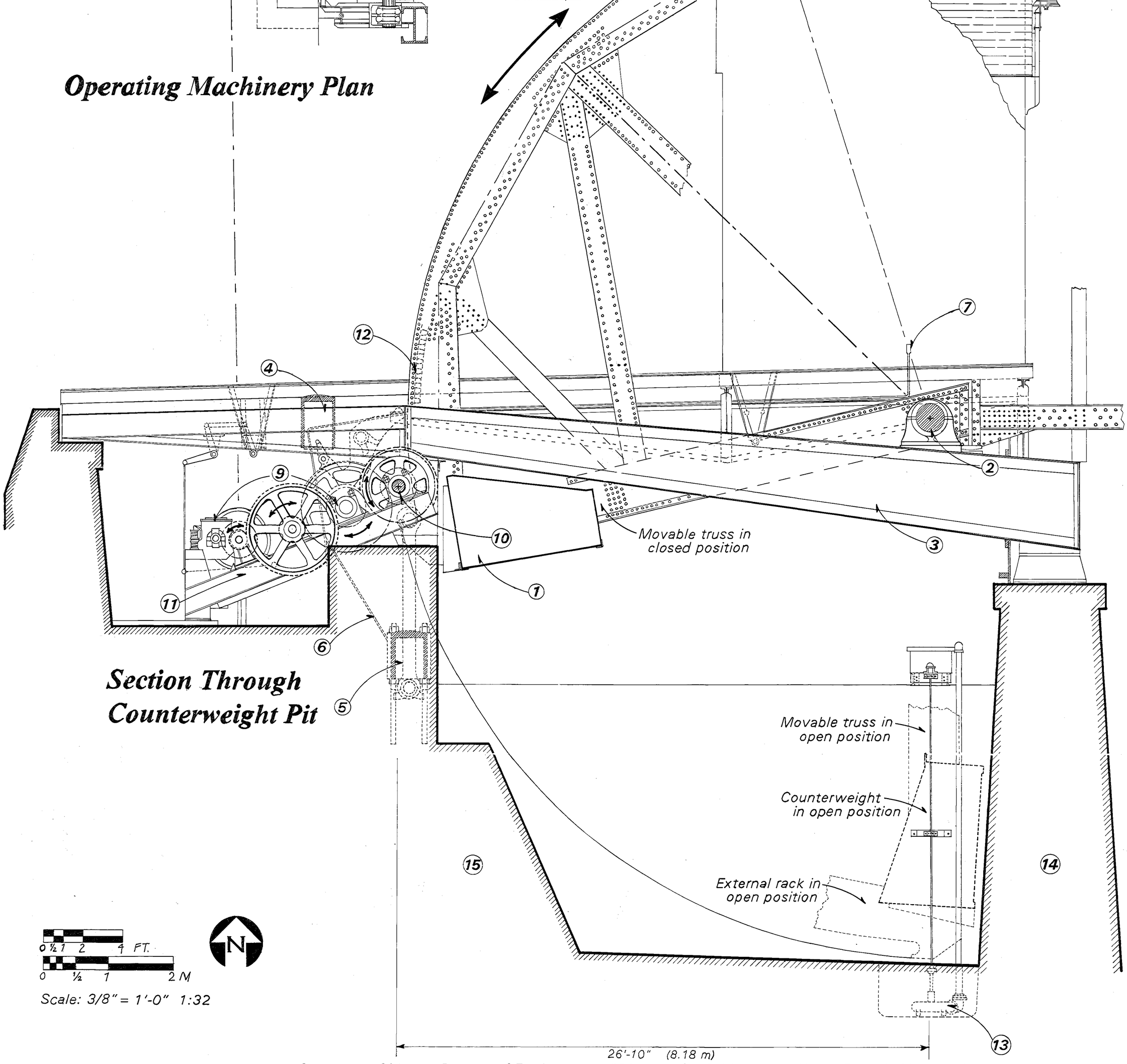
Operating Machinery Layout



Key

1 Counterweight
2 Trunnion
3 Trunnion Support Girder
4 Upper Pneumatic Buffer
5 Lower Pneumatic Buffer
6 Airline
7 Relief Valve Pedal (inside operator's booth)
8 Upper Buffer Compressing Cam
9 Operating Machinery
10 Pinion
11 Machinery Platform
12 External Rack
13 Sump
14 River Pier
15 Abutment
16 Brake
17 Motor

Operating Machinery Plan



Section Through Counterweight Pit

0 ½ 1 2 4 FT.
0 ½ 1 2 M

N

Scale: 3/8" = 1'-0" 1:32

Source: Chicago Bureau of Engineering, "Division St. Bridge, over North Branch Chicago River," drawings, 1902. Structure No. 6016, Chicago Department of Transportation plan files.

DELINEATED BY: Julia Koslow, 1999 Lisa Gardner, 2000

CHICAGO BRIDGES RECORDING PROJECT NATIONAL PARK SERVICE UNITED STATES DEPARTMENT OF THE INTERIOR	WEST DIVISION STREET BRIDGE SPANNING NORTH BRANCH OF CHICAGO RIVER AT WEST DIVISION STREET CHICAGO COOK COUNTY ILLINOIS	SHEET 3 OF 4	HISTORIC AMERICAN ENGINEERING RECORD IL-148	LIBRARY OF CONGRESS INDEX NUMBER

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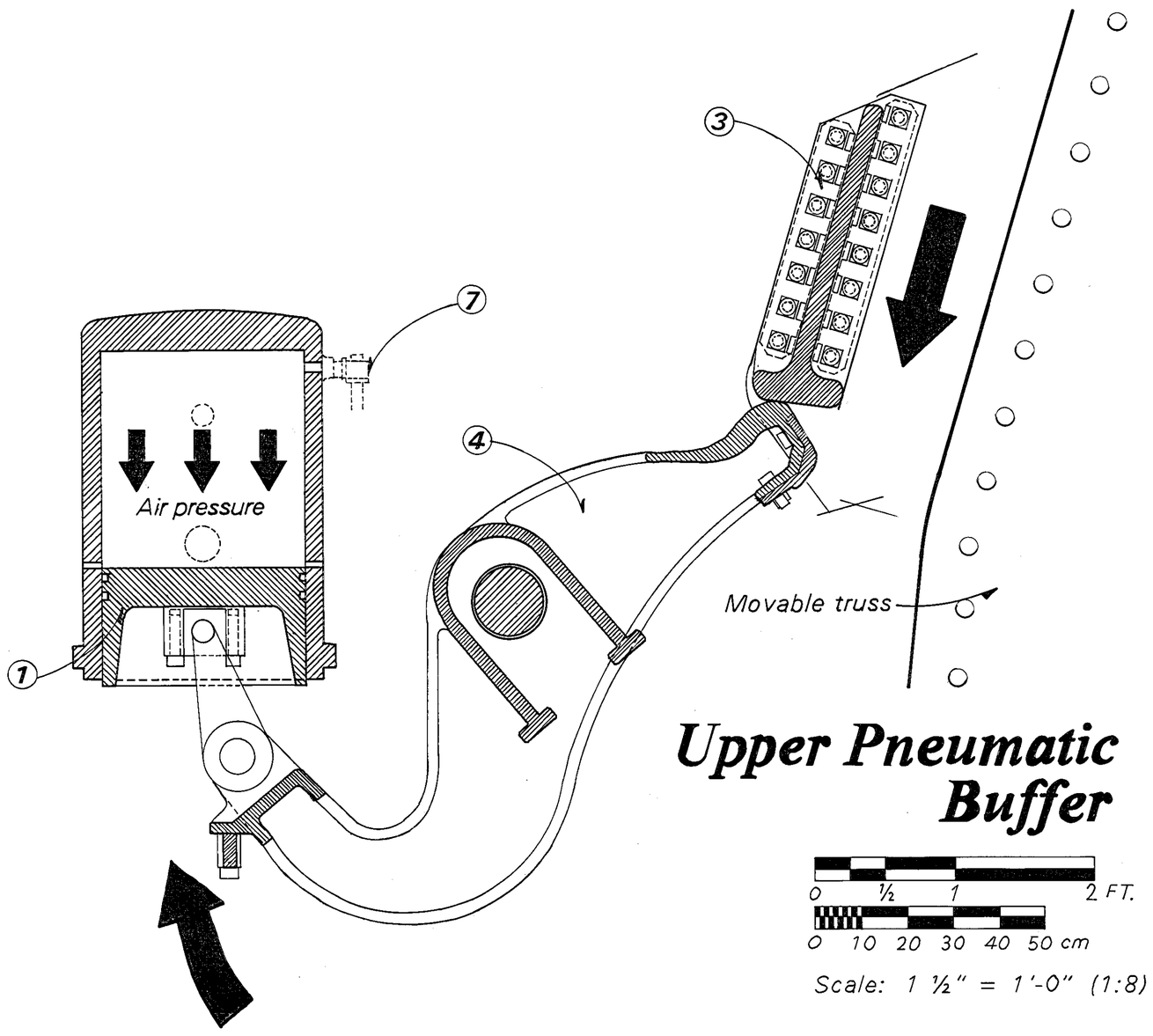


Upper Pneumatic Buffer

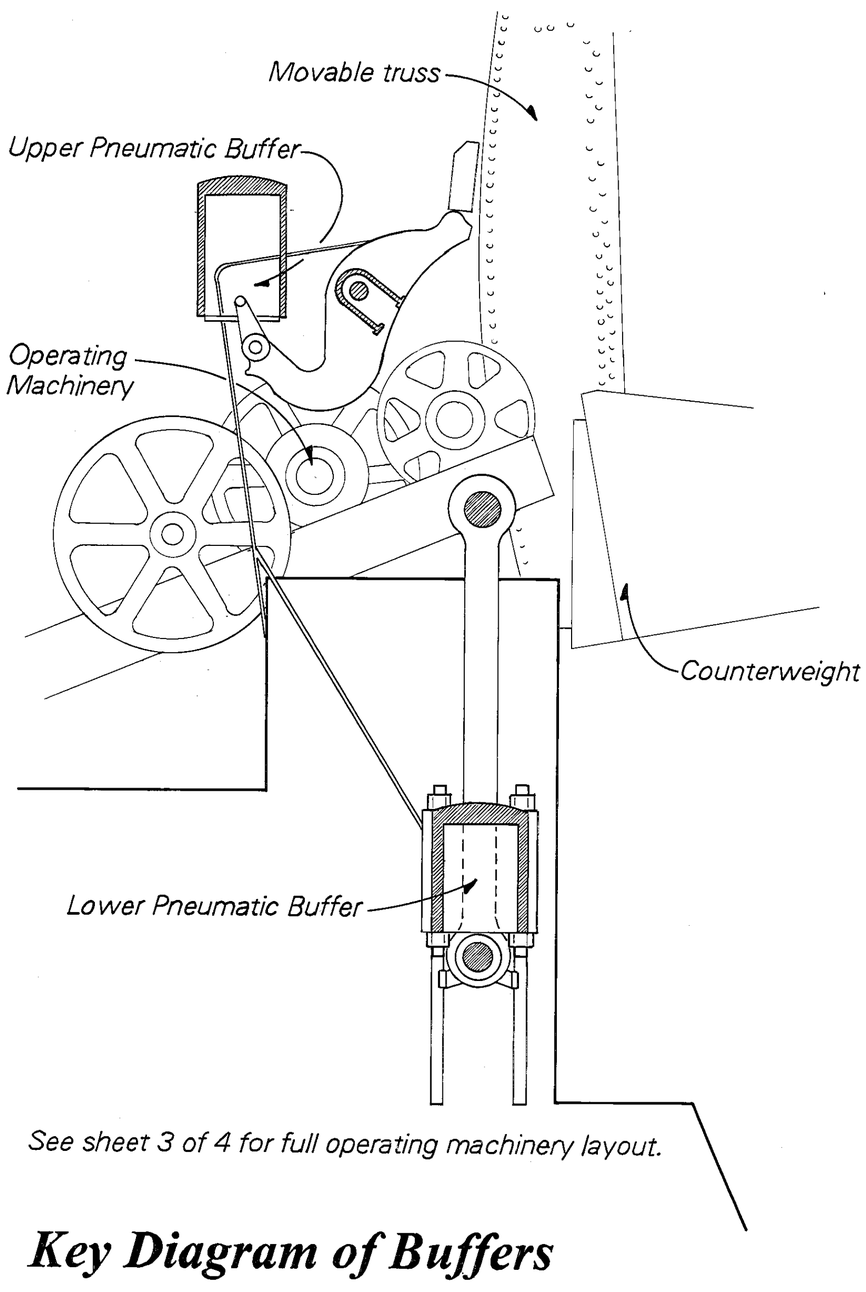
0 ½ 1 2 FT.

0 10 20 30 40 50 cm

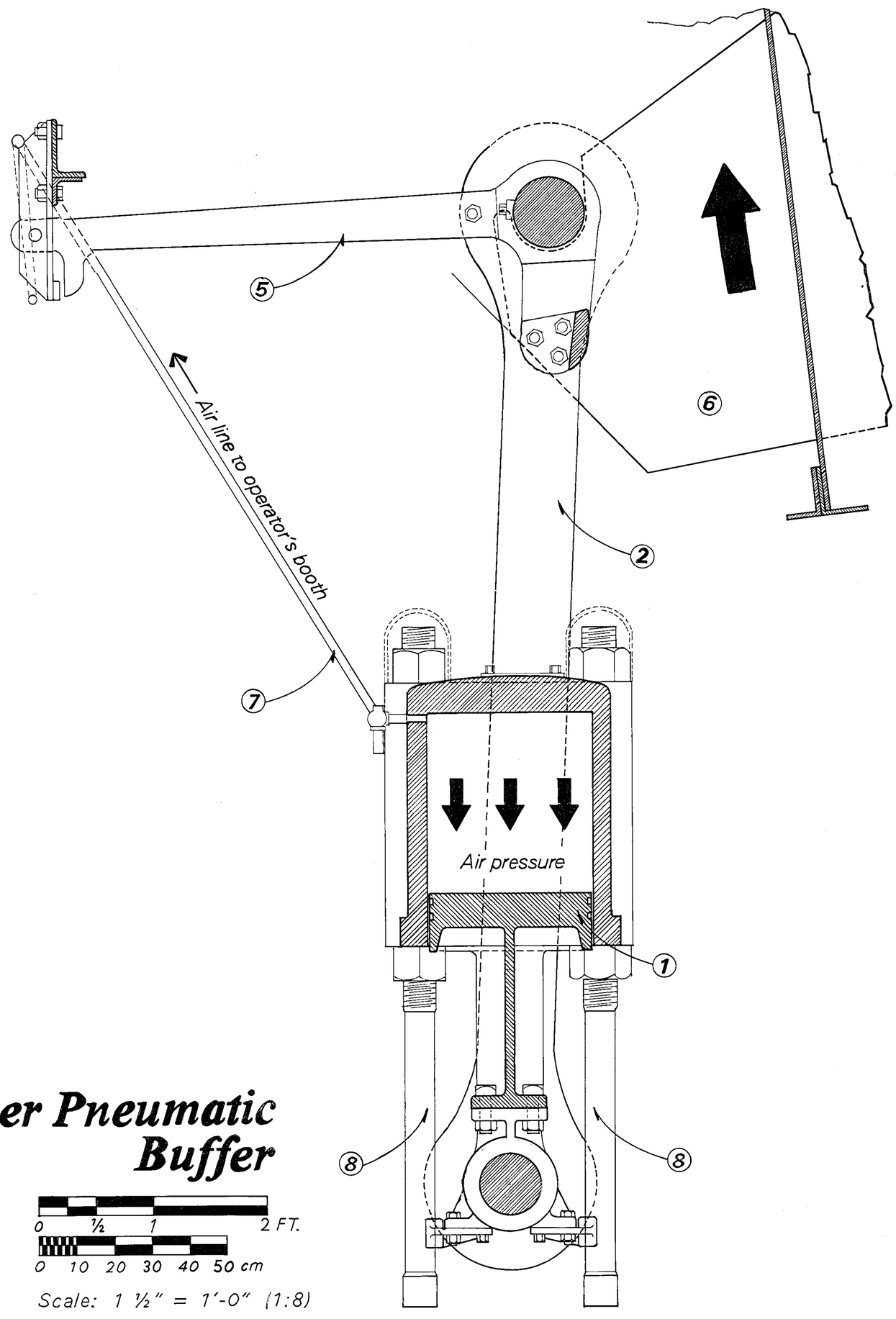
Scale: 1 ½" = 1'-0" (1:8)

Key

1 Piston
2 Eye Bar
3 Upper Buffer Compressing Cam
4 Hooked Lug
5 Anchor Bar
6 Counterweight
7 Air Line
8 Anchor Rods



See sheet 3 of 4 for full operating machinery layout.



Key Diagram of Buffers

0 1 5 FT.

0 25 150 cm

Scale: 1/2" = 1'-0" (1:24)

Lower Pneumatic Buffer

0 ½ 1 2 FT.

0 10 20 30 40 50 cm

Scale: 1 ½" = 1'-0" (1:8)

Source: Chicago Bureau of Engineering, "Division St. Bridge, over North Branch Chicago River," drawings, 1902. Structure No. 6016, Chicago Department of Transportation plan files.

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