WASHBURN & MOEN MANUFACTURING COMPANY,
QUINSIGAMOND IRON & WIRE WORKS, BARBED WIRE BUILDING
(Washburn & Moen Manufacturing Company, South Works, Barbed Wire Building)
10 Ballard Street
Worcester
Worcester County
Massachusetts

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
NORTHEAST REGIONAL OFFICE
National Park Service
U.S. Department of the Interior
U.S. Custom House, 3rd Floor
200 Chestnut Street
Philadelphia, PA 19106

HISTORIC AMERICAN ENGINEERING RECORD

WASHBURN & MOEN MANUFACTURING COMPANY, QUINSIGAMOND IRON & WIRE WORKS, BARBED WIRE BUILDING
(Washburn & Moen Manufacturing Company, South Works, Barbed Wire Building)

HAER No. MA-134-C

Location: 10 Ballard Street
Worcester
Worcester County, Massachusetts

UTM Coordinates: 19.269264.4679681
USGS Quadrangle: Worcester South, Massachusetts

Date of Construction: 1886-1892

Engineer: Unknown
Architect: Unknown

Present Owner: Metals Recycling LLC

Present Use: Vacant and scheduled for demolition, 2001

Significance: The remaining portion of the Barbed Wire building is significant as the location, from 1890 to the mid 1930's, of the manufacture of barbed wire, a principal product of the Washburn & Moen Manufacturing Company. It is also significant as one of only three extant buildings of the company's once-extensive Qunisigamond Iron & Wire Works, or South Works, complex. The building's exterior, with its brick pier construction and segmental arch windows, and its heavy timber internal structural system are typical of late nineteenth century mill construction.

Project Information: This documentation was undertaken as a mitigation measure in compliance with the 1994 Memorandum of Agreement between the Massachusetts State Historic Preservation Officer and the Federal Highway Administration in connection with the construction of the Route 146/ Massachusetts Turnpike Interchange Project. This documentation was prepared between 1995 and 2000 by:

Stanley F. Moss; Michael J. DeLacey; Pauline Chase Harrell;
Sally P. Hild; Jeffrey C. Howry; John K. Nanian
Boston Affiliates, Inc.
156 Milk Street
Boston, Massachusetts 02109

Barbed Wire Building

Between 1886 and 1892 the Barbed Wire Building was constructed as a two story brick and wood framed structure located at the northern end of the Quinsigamond Iron & Wire Works complex. The building housed the manufacture of barbed wire, once a principal product of the Washburn & Moen Manufacturing Company. The east elevation of the building fronts on Ballard Street just south of the intersection of Millbury and Ballard Streets at Hurley Square. To the west there is an active spur line of the Providence and Worcester Railroad, with a rail siding to service the Barbed Wire Building. The Barbed Wire Building was originally connected to the core of Washburn & Moen's Quinsigamond, or South Works, manufacturing area immediately across the Blackstone River to the west by a vehicular bridge, by a separate covered pedestrian bridge/passageway, and the railroad spur line. Under the ownership of the American Steel & Wire Co, barbed wire manufacturing had been moved elsewhere by 1936 and the building was being used as a wire rope and copper wire mill and for rail bond manufacturing, At present, the building is vacant and is owned by Metals Recycling LLC.

In the mid-1980s, a fire destroyed the entire frame second story of the five-section building, damaging the brick first floor and basement of the three southernmost sections to such an extent that they had to be demolished. All that remains of the Barbed Wire Building are the brick sections of two northernmost first floor sections of the building. These remaining sections are constructed of brick in a pier and panel motif with twelve panels per section. In each section there was one loading door set in a panel flush with the piers. All the other panels were recessed and had a tall window opening at the first floor level and a short window for the basement both windows had a segmental brick arch head and a granite sill. The south end wall of the existing structure was once the internal fire wall dividing the second and third sections of the building. While one of the large internal openings in this firewall has been filled in with concrete block, the other to the west remains open to the elements. At the north end of the building, six at-grade loading bays with modern overhead sectional garage doors have been cut into the original building fabric.

As originally built, the Barbed Wire Building (Building No. 19 in the Quinsigamond complex) was a five-section, two-story brick and frame structure with a basement under sections 2 – 5 (from northwest to southeast). Section 5 also had a sub-basement. Basement walls were brick above a heavy granite ashlar foundation that extended to grade. The first story of the building was of brick pier and panel that was corbelled out to receive the wood framed second story. This corbelling now has the appearance of a brick cornice. On the interior, a brick firewall separated each section from the next. There were two openings with

double-leaved, tin-clad fire doors set into brick-arched openings that provided access through each wall. A wood post and beam framing system supported the first and second floors.

Historic fire insurance plans show the second story of the building was entirely frame construction with a wood truss roof. Two elevators, one in the 1st section and another in the 3rd section originally provided access between floors for wire and workers. All traces of these lifts are gone. Barbed wire fabrication took place on the second floor while the basement and first floor were used for wire storage and shipping areas. Also on the first floor were a machine shop, two offices, and a staple room. In the basement of the 4th section was a furnace room. The building's operations were powered by a dynamo engine that was located together with an adjacent underground coal bin on the west side of the building between sections 4 and 5. (Sanborn: 1892; 1910).

The Barbed Wire Building was built on land that sloped in a southwesterly direction toward the Blackstone River. As a result, the northernmost of the five building sections was constructed above a four foot crawl space while the other four sections had full basements lighted by segmental arch windows on the east and west sides. In the west wall of the first floor of the northernmost section are three arched loading doors, still with the numbers *1, 2,* and *3* in decorative script painted above them on the exterior. These doors provided access to the adjacent railroad siding.

This remaining fragment of the Barbed Wire Building shows little evidence of the industrial processes that once occurred there. Originally, finished, galvanized smooth wire from Washburn & Moen's wire mill across the Blackstone River was delivered to the building The basement level served as the staging area for the coiled wire, which was fed to the second floor where it was twisted and barbs were inserted. In this process, single strands of wire from three different spools entered the barbing and twisting machine. One strand was used to make barbs attached around another single strand. As the barbed strand left the machine it was twisted together with the third strand and then wound on the final product spool, complete with metal nametags and ready for shipment. The finished rolls of barbed wire were then moved to the first floor storage and distribution areas of the building.

There are two segmental arch loading doors, now bricked-in, on the west wall of the basement under the existing southern most section. Originally due to the southwesterly slope of the land, these basement doors were at grade. It appears that the railroad siding immediately adjacent to the building, which would have had at grade to access the doors labeled "*1,2* and *3*" in the northernmost section of the building, may originally have been on a trestle or similar structure, as the land sloped away next to the remainder of the building.

At some time during the twentieth century, the grade of the land along the west side of the Barbed Wire Building was raised several feet, necessitating the bricking-in of the loading doors in the west wall of the basement. The track for the railroad spur line was then re-laid at the new grade, and four new openings with metal overhead doors were cut into the west wall

of the building's first floor to afford continued access to the line. It may also have been at that time that the building's internal post-and-beam framing system was substantially altered in order to lower the level of the first floor. The adjacent grade change and the lowering of the floor necessitated the bricking-in of all basement windows as the new floor level cuts across them near their tops. Thus the segmental arches of the bricked-in basement windows are now visible just above the main floor in the southern section.

In the existing fragment of the original building, access from one section to the other, on both the first floor and basement levels, is through two wide, segmental arch openings in the east-west fire wall, one opening at the east end of the wall and the other at the west end. Each opening is protected by a double-leaf, metal-clad wood fire door mounted on the north face of the dividing wall. Evidence of the same openings also remains in the south wall on both the basement and first floor, this having originally been the internal east-west dividing wall between the second and third sections of the building. The opening at the east end of the south wall on the first floor has post-fire cinderblock infill. However, the mount for its metal-clad fire door is still evident on the north face of the wall around the opening and one leaf of the door remains leaning against the cinderblock. In the basement, a comparable opening has brick infill, with the ghost of the fire door mount remaining around it.

The building's internal post-and-beam structural system consists of square bays, framed with heavy yellow pine posts with braces located at 8 feet 3 inches on center on both the main and basement levels. A stamped label on at least two beams in the basement indicates that some or all of the timber for the building was supplied by George McQuesten & Co. of East Boston. Advertisements for this company appear in the Boston Directories between 1880 and 1901. To facilitate the movement of forklifts in the basement, the bay system has been altered in some locations by the removal of a post to create a wider opening. An I-beam and lally column arrangement has been substituted for the missing post in each case.

The original flooring on the main level of the building is wood with the planking laid in two layers, the sub-flooring at an angle to the framing and finished flooring. However, the flooring and crawl space on the west side of the northern section's main floor were later filled-in with poured concrete in order to support forklifts. A brick-walled, central ramp, now 11 feet 3 inches wide, descends in a north-south direction from the main level of the

northern building section to the basement of the south section. The west wall of the ramp was extended eastward 13 inches in concrete for added support when the concrete floor adjacent to it was poured. The ramp and basement also have concrete floors to facilitate the movement of forklifts. The basement floor level is now higher than the original sill level of the bricked-in, arched loading doors in the west wall.

Yet another change to the building was the addition of an open, hydraulic lift in the northwest corner of the building's second section, between the basement and what was the first floor. The lift shaft with cables and weights remains on the former first floor while remnants of its hydraulic machinery can be seen in the basement portion of the shaft. Placement of the lift in that location blocked the south side of the segmental arch doorway at the west end of the firewall on the main level of the building. As a result, the metal-clad wood fire doors remain shut. A more recent, roughly cut, opening provides saccess through the firewall between the first and second sections of the building.

A twentieth century office space is set off from the east wall of the northern section by rough wood partitions. The exterior of the western office wall is clad in rough sawn tongue-in-groove boarding, while the other two walls are rough sawn framing from which the tongue-in-groove boarding has evidently been removed. The interior of the office has modern wood paneling and a carpeted floor, both in poor condition. The office location does not correspond to that of either of the two first floor offices shown on the 1892 insurance atlas.

Sources

Beers, F.W. & Co. Atlas of the City of Worcester, Worcester County, Massachusetts. New York: F.W. Beers & Co., 1870.

Fitch, Virginia H. and Andrew C.Winters. Public Archaeology Laboratory, Inc. Building Inventory Forms: Washburn and Moen Manufacturing Buildings, 1900. On file at the Massachusetts Historical Commission, Boston, MA.

Hopkins, G.M. Atlas of the City of Worcester, Massachusetts. Philadelphia: G.M. Hopkins, 1886.

National Register of Historic Places Nomination Form: Washburn and Moen Manufacturing Company, 1977. On file at the Massachusetts Historical Commission, Boston, MA.

Nutt, Charles A. A History of Worcester and Its People, 3 Vols. New York: Lewis Historical Publishing Co., 1919.

Public Archaeology Laboratory, Inc. Historic and Architectural Survey Report, Route 146 Improvements, Worcester and Millbury, Massachusetts. Pawtucket, Rhode Island: PAL, Inc., 1991.

Public Archaeology Laboratory, Inc. Historic and Architectural Survey Report, Route 146 Improvements, Worcester and Millbury, Massachusetts, Appendix C. Pawtucket, Rhode Island: PAL, Inc., 1991.

Public Archaeology Laboratory, Inc. Addendum to: Historic and Architectural Survey Report, Route 146 Improvements, Worcester and Millbury, Massachusetts. Pawtucket, Rhode Island: PAL, Inc, 1992..

Public Archaeology Laboratory, Inc. Archaeological Site Examinations of Two Blackstone Canal Segments in Worcester and Millbury, Massachusetts and the Mill Brook Sewer Portal in Worcester, Massachusetts. Pawtucket, Rhode Island: PAL, Inc, 1993.

Richards, L.J. & Co. Topographical Atlas of the County of Worcester, Massachusetts. Springfield: L.J. Richards & Co., 1896.

Richards Map Company. Topographical Atlas of the County of Worcester, Massachusetts. Springfield: Richards Map Co., 1922.

Sanborn Map Company. Insurance Maps of Worcester, Massachusetts, 1892 updated to 1905. New York: Sanborn Map Co., 1905.

Sanborn Map Company. Insurance Maps of Worcester, Massachusetts. New York: Sanborn Map Co., 1910.

Sanborn Map Company. Insurance Maps of Worcester, Massachusetts. New York: Sanborn Map Co., 1937.

Stebbins, H. Map of Worcester, 1831. From actual surveys by Caleb Butler and H. Stebbins. Boston: C. Harris, 1831.

Stone, Orra L. History of Massachusetts Industries: Their Inception, Growth and Success, Vol. II. Boston: The S.J. Clarke Publishing Co., 1930.

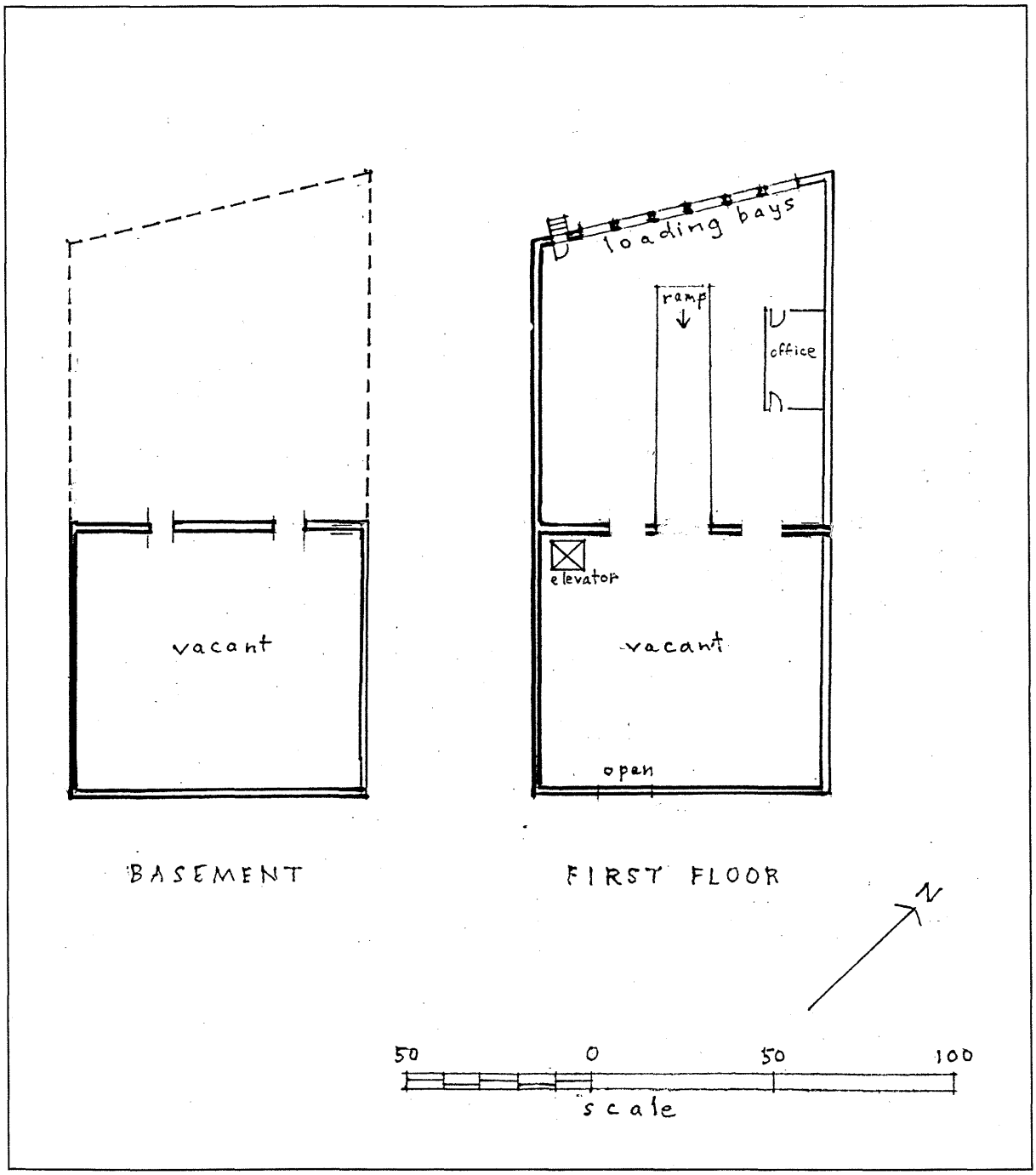
Sverdrup/Parsons Brinckerhoff. Base Map, Former Site of Washburn & Moen Manufacturing Company and American Steel & Wire Company. Boston: Sverdrup/Parsons Brinckerhoff, 1998.

United States Geological Survey. Topographic Map of Worcester South, Massachusetts. Denver: United States Geological Survey, 1983.

Walker, George H. Atlas of the City of Worcester, Massachusetts. Boston: George H. Walker, 1878.

Warren, Arthur G. "Barbed Wire: Who Invented It?: History of Early Development and Litigation," The Iron Age, vol. 117, no. 25, pp.2-12. New York, 1926.

Worcester Historical Society Archives, Miscellaneous Drawings and Sketches.



Schematic Plan of Basement and First Floor, 1998