

United States Department of the Interior  
National Park Service

# National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

### 1. Name of Property

historic name Bethlehem Steel Lehigh Plant Mill #2 Annex  
other names Merchant Mill #2; Johnson Machinery Corp.

### 2. Location

street & number 11 West 2<sup>nd</sup> Street N/A not for publication  
city or town Bethlehem N/A vicinity  
state Pennsylvania code PA county Northampton code 095 zip code 19464

### 3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this  nomination  request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property  meets  does not meet the National Register criteria. I recommend that this property be considered significant  nationally  statewide  locally. ( See continuation sheet for additional comments).

*Jan D. Butler* March 22, 2004  
Signature of certifying official/Title Date  
Pennsylvania Historical & Museum Commission  
State or Federal agency and bureau

In my opinion, the property  meets  does not meet the National Register criteria. ( See continuation sheet for additional comments).

\_\_\_\_\_  
Signature of certifying official/Title Date  
\_\_\_\_\_  
State or Federal agency and bureau

### 4. National Park Service Certification

I hereby certify that this property is:  
 entered in the National Register.  
 See continuation sheet.  
 determined eligible for the National Register.  
 See continuation sheet.  
 Determined not eligible for the National Register.  
 removed from the National Register.  
 other (explain): \_\_\_\_\_

Signature of the Keeper \_\_\_\_\_  
Date of Action \_\_\_\_\_

Bethlehem Steel Lehigh Plant Mill #2 Annex  
Name of Property

Northampton County, PA  
County and State

**5. Classification**

**Ownership of Property**  
(Check as many boxes as apply)

**Category of Property**  
(Check only one box)

**Number of Resources within Property**  
(Do not include previously listed resources in the count)

- private
- public-local
- public-State
- public-Federal

- building(s)
- district
- site
- structure
- object

Contributing	Noncontributing	
1		buildings
		sites
		structures
		objects
1		Total

**Name of related multiple property listing**  
(Enter "N/A" if property is not part of a multiple property listing)

**number of contributing resources previously listed in the National Register**

N/A

0

**6. Function or Use**

**Historic Functions**  
(Enter categories from instructions)

**Current Functions**  
(Enter categories from instructions)

INDUSTRY/PROCESSING; manufacturing facility

WORK IN PROGRESS  
DOMESTIC

**7. Description**

**Architectural Classification**  
(Enter categories from instructions)

**Materials**  
(Enter categories from instructions)

OTHER: 20<sup>th</sup> century industrial

foundation Brick

walls Brick

roof Asphalt

other Steel

**Narrative Description**

(Describe the historic and current condition of the property on one or more continuation sheets)

**8. Statement of Significance**

**Applicable National Register Criteria**

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

- A** Property is associated with events that have made a significant contribution to the broad pattern of our history.
- B** Property associated with the lives of persons significant in our past.
- C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D** Property has yielded, or is likely to yield, information important in prehistory or history.

**Criteria Considerations**

(Mark "x" in all the boxes that apply)

Property is:

- A** owned by a religious institution or used for religious purposes.
- B** removed from its original location.
- C** a birthplace or grave.
- D** a cemetery.
- E** a reconstructed building, object, or structure.
- F** a commemorative property.
- G** less than 50 years of age or achieved significance within the past 50 years.

**Narrative Statement of Significance**

(Explain the significance of the property on one or more continuation sheets)

**Area of Significance**

(Enter categories from instructions)

INDUSTRY

ARCHITECTURE

**Period of Significance**

1940-1953

**Significant Dates**

1940

**Significant Person**

(Complete if Criterion B is marked above)

N/A

**Cultural Affiliation**

N/A

**Architect/Builder**

Bethlehem Steel Corporation

**9. Major Bibliographical References**

**Bibliography**

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets)

**Previous documentation on files (NPS):**

- preliminary determination of individual listing (36 CFR 67) has been requested
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # \_\_\_\_\_
- recorded by Historic American Engineering Record # \_\_\_\_\_

**Primary location of additional data:**

- State Historic Preservation Office
- Other State agency
- Federal agency
- Local government
- University
- Other

Name of repository: \_\_\_\_\_

Bethlehem Steel Lehigh Plant Mill #2 Annex  
Name of Property

Northampton County, PA  
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**10. Geographical Data**

Acreage of Property 4.5 acres

**UTM References**

(Place additional UTM references on a continuation sheet)

1	1   8 Zone	4   6   7   9   0   0 Easting	4   4   9   5   9   0   0 Northing	3			
2				4			

See continuation sheet

**Verbal Boundary Description**

(Describe the boundaries of the property on a continuation sheet)

**Boundary Justification**

(Explain why the boundaries were selected on a continuation sheet)

**11. Form Prepared By**

name/title Tim Noble/President and Shelby Weaver Splain/Associate

Organization Noble Preservation Services, Inc. date January 2004

street & number 10 Log House Road telephone (215)679-5110

city or town Zionsville state PA zip code 18092

**Additional Documentation**

Submit the following items with the completed form:

**Continuation Sheets**

**Maps**

- A **USGS map** (7.5 or 15 minute series) indicating the property's location.
- A **Sketch map** for historic districts and properties having large acreage or numerous resources.

**Photographs**

Representative **black and white photographs** of the property.

**Additional Items**

(Check with the SHPO or FPO for any additional items)

**Property Owner**

(Complete this item at the request of SHPO or FPO)

name \_\_\_\_\_

street & number \_\_\_\_\_ telephone \_\_\_\_\_

city or town \_\_\_\_\_ state \_\_\_\_\_ zip code \_\_\_\_\_

**Paperwork Reduction Statement:** This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.).

**Estimated Burden Statement:** Public reporting burden for this form is estimated to average 18.1 hours per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Project (1024-0018), Washington, DC 20503.

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# National Register of Historic Places Continuation Sheet

Bethlehem Steel Lehigh Plant Mill #2 Annex

Name of Property

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## Description

Lehigh Plant Mill #2 Annex is a large, square, two-story, six-bay brick industrial building constructed in 1940 by Bethlehem Steel on a 4.5317 acre parcel of land (tax parcel #P6/2/2A) at 11 West 2<sup>nd</sup> Street in Bethlehem, Northampton County, PA. Situated on the south side of the city and occupying one city block, the building is bounded by West 2<sup>nd</sup> Street to the south, the New Street bridge (original 1867, rebuilt 1958) to the east, Union Station Plaza (with the 1924 Union Station train station) to the west, and the Philadelphia, Bethlehem and New England (PB&NE) railroad tracks and the Lehigh River to the north. A brick Lehigh Valley railroad freight station (built in the mid 1930s to service the freight operations of the former Lehigh Valley railroad) abuts the northwest corner of the building but occupies its own tax parcel. The factory's exterior ornamentation includes stark brick walls punctuated by large steel windows and expansive sawtooth monitors. The interior of the building reflects its industrial heritage with its open manufacturing floor, steel skeleton, and overhead cranes. The property is in relatively good condition and retains its integrity with very few physical changes to the building since 1940.

The Annex was originally built as a surface preparation and finishing mill for the Alloy and Tool Steel Division of the Lehigh Plant. Geographically, the Lehigh Plant was largest of the of the three subdivisions which comprised the Bethlehem Plant, the "home base" of the Bethlehem Steel Corporation in south Bethlehem. The Lehigh Plant occupied the entire western half of the company's 1700 acres of land, generally the area just east of the Minsi Trail Bridge west to the Mill #2 Annex (see Figures 4 and 9). Beginning in the mid-1930s, the functions, and therefore buildings, of the Alloy and Tool Steel Division were consolidated to the open land at the western edge of the Lehigh Plant. Mill #2 Annex is now distinctly separated from the original complex by several blocks of new construction which now occupy the site of the former Alloy and Tool Steel Division buildings east of the New Street bridge.<sup>1</sup> Because of this new construction and the imposing structure of the New Street Bridge, the Mill #2 Annex was not included in the eligibility survey prepared for the Bethlehem Steel historic district in the 1990s, nor in the National Historic Landmark nomination currently being prepared by Bethlehem Works.

Mill #2 Annex is generally defined by its immense size, striking rooftop monitors and long expanses of industrial steel windows along each façade. The building is constructed of six large roof and mechanical bays stretching perpendicular to the river for approximately 441 feet; each bay contains roughly three window bays. Along New Street and Union Station Plaza, the length of the monitors extends approximately 447 feet. Positioned and anchored at its southwest corner, Mill #2 Annex has two primary facades, West 2<sup>nd</sup> Street to the south and Union Station Plaza to the west. This pivotal corner is marked by a tall, wide rounded brick wall delineated at its north and east edges by stepped brick pilasters that stop short of a tall terra cotta capped parapet wall. A single steel door is located in the northern bottom corner of the of the rounded wall.

<sup>1</sup> See Section 8: Significance for a complete discussion of the Annex's physical and historical relationship to the Lehigh Plant and larger Bethlehem Plants of the Bethlehem Steel Corporation.

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From this point, the south wall extends 17 bays to the east. Each bay is demarcated by a stepped brick pilaster that terminates at the top of the parapet wall and two industrial windows. The pilasters and parapet wall along this façade are identical to those seen on the southwest corner. Along most of the first floor, the large industrial steel windows feature three horizontal rows of awning sash, each with six lights, that are operated by an internal mechanized system. The second floor steel windows are slightly shorter with a different fenestration pattern and operating system. These windows are divided into three vertical and three horizontal sections by heavy steel muntins for a total of nine groups of two lights; the vertical sections share the same width while the horizontal sections are arranged as short, tall, short. Within this system, the two tall outer sets of two lights operate as awning windows. This window type is also located in the first floor openings in the easternmost bays of the south wall. Both types of windows contain eighteen lights. Two doors are located on this façade: a large truck entrance with steel door in the eighth bay (from the east corner), and a standard size steel door immediately to the west.

The other primary façade, the west façade, extends north along Union Station Plaza to the Lehigh River.<sup>2</sup> Beginning at the southwest corner, this façade extends 14 bays to a large three-bay wide service entrance and finally approximately four bays to the Lehigh River. At the northern end of this façade, a small section of the former Lehigh Freight Company building abuts Mill #2 Annex. The first 14 bays are identical to those along the south façade with stepped brick pilasters and the two types of steel industrial windows. In the first bay immediately north of the rounded southwest corner is a large service entrance that was installed in 1964. The second service entrance area on this façade contains two steel doors, a 15-lite steel sash, and one standard steel door; the second floor wall span contains no openings. The center entrance relates historically to the narrow gauge tracks that crossed through the building, and the southern entrance replaced a steel sash sometime after 1964. For almost 40 years, the Bethlehem Steel logo was anchored to this upper portion of this wall; today, the logo has been removed. At the northernmost end, there are two steel sash set above the abutting building.

The north, or rear, facade extends 18 bays along the former PB&NE rail lines and the Lehigh River. The character of this brick wall is markedly different than the other facades. The stepped pilasters have been replaced by exposed narrow steel framing to differentiate each bay and each floor. Also, the roof extends out to the building's edge and the gables of the six large monitors rise in line with the wall surface. On the first floor of this façade, the fixed industrial steel windows feature 72 lights set into two sections of 36 and divided by a heavy steel mullion; on the second floor, the windows are slightly reduced in size to only 24 lights in each section.

The east façade is 22 bays in length, all of which are obscured by the ramp of the New Street bridge which crosses the Lehigh River. Beginning at the southern corner, the first four bays are defined by the characteristic stepped pilasters, with the remainder of the bays marked only by the exposed steel framing. On the first floor,

<sup>2</sup> Union Station Plaza is the location of the Union Station passenger railroad station, built in 1924, and now used as medical offices. While both Union Station and the former Lehigh Valley RR freight station both utilized the same tracks along the river and are built in close proximity, they are distinctly different structures with different histories and uses.

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the windows are the standard three-tier pivot sash; windows on the second floor vary between the one awning sash in the southernmost bay to groups of fixed 48-light sash and fiberglass in the balance of the second floor openings. A series of large openings near the northern corner provide pedestrian and service entrance into the building. In the northernmost bay, there is a set of wood x-brace doors that lead to the former standard gauge tracks that lead through the northern end of the building. South of that entrance is a single pedestrian doorway, a wood X-brace door, and two large metal service doors, one of which regulates access to the narrow gauge track in the center of the building.

The roof of Mill #2 Annex is one of its distinctive exterior features and is unique in scale compared to other Bethlehem Steel and regional industrial buildings. Six large monitors, hipped on the south end and gabled on the north extend the length of the building and lie parallel to each other east to west. In each of the six bays, each face of the monitors contains a long bank of flat skylights. Positioned along each of the six ridges are various combinations of large ventilators, exhaust units, and defunct dust collection systems.

The industrial heritage of Mill #2 Annex is just as clearly communicated on the interior of the building as it is on the exterior. Built in two rectangular sections in 1940, the interior is evenly divided into two large open sections of three bays each by a two-story brick and steel window wall that runs north to south (bay numbering starts with 1 at east end). Generally, the interior space is defined by concrete floors, cavernous ceilings with skylight monitors, brick walls, steel framing, and industrial equipment. At the northern end of the building, a standard gauge track ran from the first Lehigh Plant Mill on the opposite side of New Street through Mill #2 Annex to the Lehigh Freight company building attached to Mill #2 Annex at its northwestern corner. Near the center of the building, a narrow gauge track also ran across New Street, through Mill #2 Annex and out to Union Station Plaza.

The steel skeleton divides the interior into its six bays as called out by the roof monitors and supports the cranes and other mechanical apparatus once used for production. Originally, Bays 4, 5, and 6 held a total of 8 10-ton cranes; these cranes moved north to south along girders mounted on either side of the steel columns. Walkways also run along each line of columns and across each bay at either end of the building to access the crane systems. In few locations, sections of the steel columns have been sheathed with metal to create partitions. The building's office and employee areas are located in the southeast corner of the building in a narrow, two-story brick section accessed by a steel stair. The unfinished utilitarian rooms include administrative space, a tool room, first aid and meeting rooms, and toilets.

Lehigh Plant Mill #2 Annex/Merchant Mill #2 Annex retains integrity as an excellent example of a mid-twentieth century industrial building associated with Bethlehem Steel. Few physical and programmatic changes have been made to the property since 1940; many of the features indicative of the building's industrial heritage remain intact. In the 1960s, the building was transitioned into more warehouse versus manufacturing space, and in 1964 a rolling steel door was added to the west façade. Since Bethlehem Steel sold the building in 1986, the building's interior has fallen into minor disrepair as a result of deferred maintenance and several years of

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neglect. The building's exterior remains in sound structural condition with its aesthetic features completely intact, although in somewhat poor material condition. On the interior and exterior, the building still has the important character-defining features that qualify the Lehigh Plant Mill #2 Annex for the National Register of Historic Places under Criteria A and C.



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The Bethlehem Steel Lehigh Plant Mill #2 Annex was built in 1940 by the Bethlehem Steel Corporation and is located at the intersection of W. 2<sup>nd</sup> Street and Union Station Plaza in south Bethlehem, Northampton County, PA. It is significant under Criterion A for Industry because of its importance within the Bethlehem Steel Company, particularly as the last surviving significant building constructed as part of the major expansion and consolidation of the Alloy and Tool Steel Division between 1935 and 1940. The Annex is also significant under Criterion C for Architecture as an example of an important mid-twentieth century industrial building type that is unique in the development of Bethlehem Steel. The Annex's period of significance begins with its construction in 1940 and, although the building continued in use as a Bethlehem Steel facility until 1986, the end date for the period of significance is 1953, in line with the National Register's fifty-year guideline for historic significance.

## Summary History

Founded ca. 1857 as the Bethlehem Rolling Mill and Iron Company, Bethlehem Steel was a producer of iron and steel products that quickly grew from a local manufacturer of iron products to an international steel giant. Positioned adjacent to the city of Bethlehem on the south side of the Lehigh River, the early iron company benefited from a wealth of local raw materials such as iron ore and limestone as well as the transportation and power provided by the Lehigh River and the Lehigh Valley Railroad. John Fritz (1822-1913), perhaps the most innovative of America's ironmasters, was appointed superintendent of the company and soon the first mill was placed in operation producing rails for the local railroad companies.<sup>3</sup> By 1863 the company was reorganized as the Bethlehem Iron Company which produced both wrought iron blooms and high quality wrought iron rails. It was during Fritz's tenure in 1873 that the Bessemer steel process was initiated, along with a programmatic move into heavy forging instead of solely rail production.<sup>4</sup> As noted in the 1990 Historic American Engineering Record (HAER) report, "In many ways, the Bessemer steel plant that John Fritz designed for the Bethlehem Iron Company can be considered the first serious attempt to achieve integration in the production of both steel and rails."<sup>5</sup> The company quickly outpaced its local competition, mostly small early 19<sup>th</sup> century forges and furnaces, to become a dominant force in regional industry.<sup>6</sup>

While the company continued to grow, mostly through supplying rails, armor plate and ordinance for the United States navy, it was two inventions at the turn of the 20<sup>th</sup> century that catapulted the Bethlehem Iron Company into the upper echelon of the steel community with corporations like U.S. Steel. The company was responsible for the development of high-speed tool steel in 1897 - 1899 based on patents of Fredrick W. Taylor and Munsell

<sup>3</sup> U.S. Department of the Interior, Historic American Engineering Record (HAER), No. PA-186, "Bethlehem Steel Corporation Along the Lehigh River North of Fourth Street, Bethlehem, Northampton County, PA," Prepared by Lance Metz, 1990. Prints and Photographs Division, Library of Congress, Washington, D.C., page 6.

<sup>4</sup> The Bessemer process is the process of making pig iron and steel by burning out carbon and other impurities by means of a blast of air forced through the molten metal.

<sup>5</sup> HAER, page 8.

<sup>6</sup> Bethlehem, PA Online website, October 3, 2003.

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White.<sup>7</sup> This new product included specialized alloys often referred to as "The Royal Family"; these alloys were essential in the creation of modern manufacturing and construction because of their superior physical properties such as increased hardness, toughness, heat resistance, corrosion resistance, ductility, etc. These alloys formed the basis of the entire American and world tool steel industries; these products included high-speed tools to cut steel and other metals necessary for the manufacture automobiles and airplanes. The company produced the largest amount of these specialized steels in the world and maintained what became essentially a monopoly on the product into the 1950s.<sup>8</sup>

In 1901, Charles M. Schwab, one of the most influential business leaders of the steel industry, reorganized the Bethlehem Iron Company as the Bethlehem Steel Company. As Lance Metz discusses in his 1990 HAER report, "Schwab's boldest decision was to enter Bethlehem into the growing but fiercely competitive structural steel market."<sup>9</sup> Schwab introduced the continuously rolled wide flanged beam (Grey Beam) in 1907, a product that allowed for the construction of skyscrapers and massive bridges that forever changed the face of the built environment.<sup>10</sup>

Bethlehem Steel continued to expand throughout the late 19<sup>th</sup> and early 20<sup>th</sup> centuries and ultimately included over 1700 acres of land from South Bethlehem to Freemansburg known as the Bethlehem Plant (see Figures 4, 5, and 9). The company eventually grew to include nine additional steel plants, numerous fabricating works, shipbuilding and repair yards and manufacturing units scattered throughout the country. At its height in the 1960s the company employed tens of thousands of people and was the largest producer of specialty steel products in the world and the world's largest foundry.<sup>11</sup>

Products such as blooms, billets, slaps, bars, specialty steels and alloys along with structural shapes, tin mill products, sheets, plates, rails, pipe, wire, concrete reinforcing bars, etc. were custom made to the specification of customers who would turn the stock into manufactured products. Not only did Bethlehem Steel produce the raw materials for construction and manufacturing, they also maintained massive manufacturing facilities throughout the country. Manufactured products included but were not limited to bridges, buildings, towers,

<sup>7</sup> Bethlehem Steel Company, "Bethlehem Steel Company" booklet 1813 (Bethlehem Steel Company, Bethlehem, PA: ca. 1960), page 8. From the files of Charles Martin, Bethlehem, PA, Chief Engineer, Bethlehem Plant. Interviews with Lance Metz, Historian, Hugh Moore Historical Park and Museum, Easton, PA.

<sup>8</sup> Bethlehem Steel Company, "Bethlehem Steel Company, Bethlehem Plan, Organization and Operations The 1962 Loop Course," Employee Orientation Manual (Bethlehem, PA: Bethlehem Steel Corporation, 1962). This internal company document identifies and describes all of the operations and organization of the Bethlehem plant and was intended only for new engineers and other employees. The publication is owned by Charles Martin, 40-year employee of the company and last Chief Engineer of the Bethlehem Plant of the Bethlehem Steel Company. Mr. Martin also provided essential information on the operations, products, history and functions of buildings in the Bethlehem Plant.

<sup>9</sup> HAER, page 42.

<sup>10</sup> Interviews with Lance Metz, various dates.

<sup>11</sup> See *Bethlehem Review*. Volumes #1 through #49, April 24, 1924 through 1946. From the files of the Bethlehem Steel Corporation Historical Collection, et al, National Heritage and Canal Museum, Easton, PA.