## 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 National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form.* 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 certification comments, entries, and narrative items on continuation sheets if needed (NPS Form 10-900a).** 

### 1. Name of Property

historic name		John A.	Roeb	ling's Son	s Company,	Trenton, N.	J., Bloc	:k 3	
other names/site	number				<u> </u>				
	Trenton ( Jersey	City code	NJ		k, Elmer, and Mercer	East Canal s			ot for publication cinity 08611
3. State/Federal									
As the designat	ed authority u	inder the	Natior	nal Historic	Preservation	Act, as ame	ended,		
I hereby certify for registering p requirements se	roperties in th	ne Nation	al Reg						entation standards ofessional
In my opinion, t be considered s						nal Register	Criteria	. I recomme	nd that this property
national	state	wide	le	ocal					
Signature of certifyi	ng official/Title				Date				
State or Federal ag In my opinion, the p	ency/bureau or T property mee	ribal Gover	rnment s not me	eet the Nation	al Register criter	ia.			
Signature of comm	enting official					Date			
Title				Sta	ate or Federal aç	jency/bureau or	Tribal Go	overnment	
4. National Pa	rk Service Ce	ertificatio	on						
I hereby certify that									
entered in	the National Reg	ister			det	ermined eligible	for the N	lational Register	ſ
determined	d not eligible for t	he Nationa	I Registe	er	ren	noved from the	National I	Register	
other (expl	ain:)								
Signature of the K	eeper					Date of A	ction		

#### 5. Classification

Х

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

Private

public – Local public – State public - Federal Category of Property (Check only one box.)

## Number of Resources within Property

(Do not include previously listed resources in the count.)

Γ	х	building(s)
		district
_		site
		structure
		object

Contributing	Noncontributing	_
6		buildings
1		sites
1		structures
		objects
8	0	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	None			
6. Function or Use Historic Functions (Enter categories from instructions.)	<b>Current Functions</b> (Enter categories from instructions.)			
Industry – Manufacturing Facility (Factory)	Vacant			
Industry – Energy Facility (Power Plant)	Landscape - Parking Lot Industry – Communications Facility			
Industry – Waterworks (Water Tower)	(Water Tower - Cellphone Transceiver Station)			
7. Description				
Architectural Classification (Enter categories from instructions.)	Materials (Enter categories from instructions.)			
Late Victorian - Italianate	foundation: Sandstone, concrete			
Modern – International	walls: Brick, steel			
	roof: Composites			
	other: Steel			

## **Narrative Description**

(Describe the historic and current physical appearance of the property. Explain contributing and noncontributing resources if necessary. Begin with **a summary paragraph** that briefly describes the general characteristics of the property, such as its location, setting, size, and significant features.)

## **Summary Paragraph**

John A. Roebling's Sons Company, Trenton, N.J., Block 3 comprises 7.1 acres on an irregular lot bounded by four streets. The property is the northern block of the plant and was the last of three developed by the Company in the 19<sup>th</sup> and 20<sup>th</sup> centuries to manufacture wire and wire rope. The site contains five buildings erected from 1908 to 1930 and a Water Tower erected in 1918, and all of these border the perimeter of the block. The Company erected the buildings to produce steam and electricity for the plant, to manufacture specialty wooden products used by the Company, and to manufacture small diameter wire ropes for sale. The industrial style of the buildings ranges from traditional late 19<sup>th</sup> Century loadbearing masonry construction to steel-frame, curtain-wall and concrete-floor construction. Three former buildings in the center of the block were demolished under prior ownership to provide parking for a nearby arena. The Water Tower is currently used as a cellphone transceiver station. The five buildings have been vacant for more than a decade and are deteriorating, but structural and finish components remain remarkably intact since wire rope production ended on the site in 1973.

NPS Form 10900 OMB No. 10240018

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John A. Roebling's Sons Co., Trenton, N.J., Block 3

Name of Property

Mercer Co., NJ

County and State

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John A. Roebling's Sons Co., Trenton, N.J., Block 3

(Expires 5/31/2012)

Mercer Co., NJ

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### **Narrative Description**

The former John A. Roebling's Sons Company's original plant, which was known at different times as the Company's Upper Works or the Trenton Plant, is in the Chambersburg section of Trenton. Block 3 is the northernmost block of the former plant and contains 7.1 acres. It is bounded by Hamilton Avenue on the north, Clark Street on the east, Elmer Street on the south and East Canal Street/Route 129 on the west (2011 Photographs Map). The N.J. Transit light rail River Line runs along the west side of the block, occupying a recently rehabilitated 19<sup>th</sup> Century rail corridor, and the Hamilton Avenue Station is at the southwest corner.

The site contains five buildings and a Water Tower around the perimeter. There are sidewalks on the north, east and west sides, and modern, faux-iron fences between the buildings on the east and south sides. The interior of the block is paved with asphalt for parking.

<u>Building 101</u> was erected in 1917 as the Clark Street Rope Shop for production of small-diameter wire rope for aircraft and other uses on the first three floors. The fourth floor contained a wire rope testing facility in the south section and the Company's printing shop in the north section (Historic Image 21). Roebling engineers designed the building in the "daylight factory" style, pioneered by Albert Kahn in the early 1900s, with large steel sash windows and monitor skylights on the roof.

The building is a four-story rectangular structure measuring 90 by 300 feet. It has a concrete foundation and a freestanding steel frame with brick curtain walls with pilasters at the posts, and steel sash windows with concrete sills and lintels (Photos 0001-0002). There are four bays of windows on the north and south sides and 22 bays of windows on the east and west sides. The north and south sides have raised parapets with the central bays raised further for a roof monitor. There are also raised elevator shafts near the middle of the Block.

There is an employee door and stair on the east end of the south facade, and an employee door has been cut into one of the central bays on the north side. On the ground story of the west side, the twelve northernmost bays that were originally open to the former adjacent Elmer Street Rope Shop (Building 102) have been infilled with concrete block. Doorways to former bridges connected to 102 and a former building on Block 1 have been infilled on the 3rd and 4th stories of the south side of 101 and the 2nd and 3rd stories of the west side.

On the interior the brick walls and steel framing are visible on all four floors (Photos 0003-0006). The first floor is concrete and steel posts and girders support wood decking for the upper floors. The fourth floor has a roof truss supporting the monitor with a single row of columns down the center.

An east-west brick fire wall runs through the middle of the building to the top of the roof monitor to separate the interior into two sections on each floor. There are enclosed stair shafts in the southeast corner of the south section and the southwest corner of the north section. There is a freight elevator adjacent to the north section stair shaft. Many of the window panes have been broken, especially on the lower floors. On the fourth story of the north section a portion of the roof has deteriorated and is open to the sky. Water from the open roof and a fire have damaged portions of the fourth floor. Apart from the deterioration and the infill noted above, the original design and construction of the building remains largely intact.

<u>Building 104</u> was erected on the southwest corner of Block 3 as the Elmer Street Boiler House in 1916 to provide steam for powering turbines in the adjacent Engine Room and for powering machinery and providing heating in other buildings at the Works.

The building plan is irregular to follow the angled intersection of Elmer and East Canal Streets, and measures 54 ft. in width by 140 ft. in length (Photos 0007-0008). The building has a concrete foundation and brick curtain walls supported by a freestanding steel frame. The eastern two-thirds of the building is three stories in height with a gable roof, and the western one-third is two stories in height with a shed roof.

The walls have pilasters at the corners and posts and corbeled brickwork at the foundation and roof. The south and west walls have large windows with concrete sills, lintels and steel sash. The south wall has three windows on each of the first and second stories and a small window at the gable. The east wall has seven bays, with pairs of small windows at the top of the third story, and full size openings on six of the bays on the second and third stories. Two of the bays on the first story have been altered to create door openings, and one of these has been infilled with concrete block.

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covered with corrugated metal siding. The roof has a narrow extension at the third story level with a shed roof. The north wall has single windows at the east end of the first and second stories and a small gable window at the top of the third story. The rest of this wall is joined to Building 105. At the southwest corner there is a truncated brick chimney with a twostory tall square brick foundation with corbeling at the top.

On the interior, Building 104 originally had six boilers in the west section, and coal feeding apparatus in the east section (Photos 0009-0010). There is a narrow basement section along the east wall which provided access to the underside of the boilers. A filled-in passageway in the northeast corner led under a rail line that ran adjacent to the building.

The steel framing is made up of heavy riveted posts and riveted lattice beams. While most of the original equipment was removed long ago, remnants remain attached to the steel framing. A steel stair on the north wall leads to a second story catwalk down the length of the building, and to the third story level to provide access to the windows for regulating the upper ventilation.

Non-original features of the building include a small single-story room on the east wall and a large ventilation duct along the southern portion of the west wall. The building is structurally in good condition. The bricks at the base of the chimney have eroded.

Building 105 was built at the northwest corner of the Boiler House in 1917 as an Engine Room (Photos 0011-0012). The building plan is rectangular, 44 ft. wide by 81 ft. long, and extends to the west beyond the western wall of the Boiler House. The Engine Room has a concrete foundation with brick curtain walls supported by a freestanding steel frame, and a flat roof.

The walls have pilasters at the corners and at the steel posts, plus corbeling at the foundation and at the top of the bays. There are four bays on the north side, three bays on the east and west sides, and two bays visible on the south side. The east and west walls have raised parapets. The first story bays have pairs of small semicircular arched windows with steel sash, except for entrances on the east and west sides. Each of the second story bays has a very large semicircular arched window with steel sash. A corbeled brick string course separates the first and second stories.

At the northwest corner there is a single story, flat roofed former pump house on a concrete foundation with brick walls, pilasters and corbeling, and a double door on the east side. The pump house was built between 1917 and 1927. The interior of the Engine Room has a concrete first floor and the eastern two-thirds of the southern bay is open to the roof (Photos 0013-0014). A steel stairway at the southwest corner of the open bay leads to a partial second story supported by steel framing with masonry arches between steel joists. Below the clearspan roof truss is a traveling crane supported by rails along the north and south walls.

Except for broken windows and a portion of the roof that has collapsed, the Engine Room is structurally in good condition.

Building 110 was erected in 1908 as a Carpenter Shop on top of the foundation of the previous Carpenter Shop that was destroyed by fire that year. The Company engineers designed the building in the traditional brick and timber mill construction of the late 19<sup>th</sup> Century with the modern inclusion of some structural steel components.

The building is approximately 60 ft. wide by 146 ft. long, and has a brownstone foundation on the east and west sides from the previous building and a concrete foundation on the south end (Photos 0015-0016). There are two stories of loadbearing brick masonry, with pilasters at the corners and in between the nine bays on the east and west sides, and corbelling along the roof lines.

The fenestration consists of pairs of double-hung wood sash windows capped by brick arches. The first-story windows have transoms and the second story windows have arched sash. Several of the windows have been covered with fiberglass panels. Original doorways with transom lights are in the southernmost bay on the east wall, and in the fourth bay from the south on the west wall. On the east side, the third second-story window from the south has been converted to a doorway.

Of the four original basement windows capped by brick arches on the south end, two retain wood sash and two have been infilled. There are pairs of basement windows capped by brick arches in each of the bays on the west end. Some metal ventilation equipment remains hanging at the south gable. The building has a gable roof with a shed monitor on the east slope over the central seven bays.

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The interior of the building has exposed brick walls and wood flooring and joists on pairs of transverse steel I-beams, which are supported by cast steel posts with corbels on the first and second stories (Photos 0017-0018). The roof consists of wood planks and longitudinal rafters on transverse timber trusses supported at the center by timber posts. The east-facing monitor windows have been covered with fiberglass panels. Wooden stairways in the center of the east wall and along the north wall have wood partitions covered with vertical tongue and groove boards. The building has a full basement.

The masonry is in good condition with a few cracks on the north wall. The windows are in poor condition and roof leaks have caused some significant damage to the decking, flooring and joists.

<u>Building 114</u> was erected in 1930 as an extension to the Elmer Street Rope Shop for additional wire rope production and shipping facilities. The Company engineers designed the building as an efficient single-story "daylight factory" with large steel sash windows and long monitor skylights over each bay. Building 114 contained an entrance to Building 102, the former Elmer Street Rope Shop, on the south, and a truck entrance and loading dock on the north.

The building fills the north end of Block 3 and is irregularly shaped to follow the sidewalk line along East Canal and Clark Streets and Hamilton Avenue. It extends approximately 275 feet along Hamilton Avenue and approximately 210 feet along the two streets.

The building has a concrete foundation with a freestanding steel frame and brick curtain walls with recessed panels between pilasters (Photos 0019-0021). On the east and west facades there are ten bays of windows with steel sash and concrete sills, and the fourth bay from the south on the west side has a door opening with steel doors and an upper window. The north facade has a wide truck entrance section on Hamilton Avenue opposite the north section of East Canal Street, with five window bays to the east and two to the west.

To provide an appropriate "finish" to the north end of the works, the engineers designed it with shallow parapets with concrete string courses and coping along the street façades. They highlighted the northeast, northwest and southwest corners with raised pedimented sections with small panels defined by vertical concrete posts.

The truck entrance section is distinguished by a  $1\frac{1}{2}$ -story pedimented parapet with panels (Photo 0020) defined by vertical concrete posts. The central panel under the pediment contains a faded sign spelling "ROEBLING." The truck door opening in the wide central bay has steel doors outlined by narrow brick posts on the sides and a brick panel overhead, and the brick posts are repeated on the  $\frac{1}{2}$  story widows above the door.

114-A is a small, one-story addition that was erected on Clark Street in the early 1950s within the corner intersection of Building 114 and former Building 102 (Historic Image 19 & Photos 0023-0024). The east and south sides have concrete block walls capped by corrugated glass panels. The east side has four small steel sash windows and a door opening with wooden doors and a steel sash transom, and the south side has a single door. The brick west wall is a remnant of former Building 102 and consists of a two-story steel frame with three openings on the first story infilled with concrete block. The central portion of Building 114's south side consists primarily of a two-story remnant of the north end of Building 102, plus a single bay to the west, with a door and window above, that matches the details on street façades of Building 114. The south west corner of Building 114 abuts Building 110.

The interior of Building 114 has exposed brick walls and four bays of steel trusses supporting long monitor skylights (Photos 0025-0026). The third bay from the east is wider than the others, to accommodate a traveling crane that remains in situ, and is raised with clerestory windows that correspond to the height of the raised truck entrance section on Hamilton Avenue. The steel framing and brick masonry of Building 114 are in good condition, but many window panels are broken and roof leaks have deteriorated much of the roof membrane and

<u>Water Tower</u> – Erected in 1918, the 150-ft. tall steel tower has four splayed posts supporting a 125,000 gallon water tank (Historic Images 17-19 & Photo 0022). At the base there is a rectangular brick Valve House with pilasters at the corners and corbelling around the gable roof. The tower was probably furnished and erected by the Chicago Bridge & Iron Company, which built its first elevated water storage tank in 1894. The tower is the last extant of two erected at the plant, and has been rehabilitated for use as a base transceiver station for cell phone service.

N.J. Transit's River Line runs along the west side of East Canal Street parallel to the western boundary of Block 3. The River Line's Hamilton Avenue Station is west of Building 105 and some parking spaces have been installed west of Building 104.

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## 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.)



Property is associated with events that have made a significant contribution to the broad patterns of our history.



Property is associated with the lives of persons significant in our past.



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 old or achieving significance within the past 50 years.

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## Areas of Significance

	5
(Enter cateo	pories from instructions.)
Engineer	ing
Industry	
Architectu	ıre
Transport	ation

**Period of Significance** 1908-1930

### **Significant Dates**

1908, 1916-18, 1930

#### Significant Person

(Complete only if Criterion B is marked above.) Charles G. Roebling Cultural Affiliation N/A

Architect/Builder Charles G. Roebling, John A. Roebling's Sons Co.

## Period of Significance (justification)

The Period of Significance is based on the construction dates of the extant buildings and Water Tower.

## Criteria Considerations (explanation, if necessary)

**Statement of Significance Summary Paragraph** (Provide a summary paragraph that includes level of significance and applicable criteria.)

John A. Roebling's Sons Company, Trenton Plant, Block 3 is eligible for the National Register under Criterion A because of the national, statewide and local significance of the Roeblings and the John A. Roebling's Sons Company. The Roeblings are best known for designing and building the Brooklyn Bridge and for building the cables on the George Washington and Golden Gate Bridges. The Roebling Company produced wire and wire rope in Trenton from 1849 to 1952 for many other suspension bridges and for many emerging technologies of the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, and was the largest manufacturer in Trenton and one of the largest in New Jersey for many decades.

Block 3 is eligible under Criterion B because of its association with Charles G. Roebling, who served as President of the Roebling Company and its chief engineer from 1876 until his death in 1918. Charles supervised the Company's manufacturing and construction during that period, including building the Kinkora Works and the town of Roebling, N.J.

Block 3 is eligible under Criterion C because it embodies characteristics of industrial construction during the first three decades of the 20th Century, and retains considerable integrity from the time of its construction. The extant Block 3 buildings represent the Company's self sufficiency and modernization efforts instituted during World War I and at the start of the Great Depression.

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Narrative Statement of Significance (Provide at least one paragraph for each area of significance.)

Roebling Works Block 3 is eligible for the National Register under Criterion A because of the local, statewide and national significance of the Roeblings and the John A. Roebling's Sons Company. John A. Roebling began manufacturing wire rope at his works on Blocks 1 & 2 in 1849, and his sons expanded the factory to Block 3 in the 1880s. John designed the Brooklyn Bridge and his son Washington built it, and the Company built the cables for a series of landmark suspension bridges, including the Williamsburg, Manhattan, Bear Mountain, George Washington and Golden Gate Bridges.

For 125 years, the Roebling Works manufactured wire and wire rope for many new technologies that helped shape modern life, including telegraphs and telephones, electrification, deep mines, cable cards, airplanes, prestressed concrete and suspended roofs. Over the years, the Roeblings provided livelihoods for tens of thousands of workers at the plant, many of them immigrants from Europe or migrants from the South.

Block 3 is eligible under Criterion B because of its association with Charles G. Roebling, who served as President of the Roebling Company and its chief engineer from 1876 until his death in 1918. Charles personally supervised all manufacturing and the planning and construction of all buildings during that period. He also supervised the planning, design and construction of the town of Roebling, New Jersey, where the company built more than 750 houses plus stores and community facilities for employees at its Kinkora Works and their families. Roebling engineers and draftsmen designed the buildings and prepared the drawings for all of the construction except for steel framing.

Block 3 is eligible under Criterion C because it embodies characteristics of industrial construction in the northeastern United States during the first three decades of the 20th Century. Apart from the demolition of the 1917 Elmer Street Rope Shop, Block 3 retains a remarkable degree of integrity from the time of its construction, and the perimeter retains much of its historic appearance. While the five remaining buildings have deteriorated, they retain original visible components of brick, steel, timber, brownstone, and concrete, and largely retain original windows and some doors as well.

The five buildings represent the rapid change of industrial construction during the first three decades of the 20th century. The Carpenter Shop (Building 110) embodies the transition from the traditional 19<sup>th</sup>-Century mill construction of load bearing brick walls, timber interior structure, and wood double hung sash windows capped by brick arches, with the introduction of steel posts and girders for the first story. The other buildings erected in 1916-1917 and 1930 combine freestanding steel frames, large steel sash with concrete sills and lintels, and brick masonry curtain walls to harmonize with the other brick buildings at the Works.

The 1916 Boiler House (Building 104) and the 1917 Engine Room (Building 105) together represent industrial power production at a transitional time when factories still produced their own power but were gradually shifting from steam to electricity as their power source. The Engine House also follows the architectural convention of the era to distinguish the new power houses as special structures, such as the PATH powerhouse in Jersey City, N.J. The Roebling engineers accomplished this by using small and large semi-circular windows, which are found nowhere else at the Roebling Works.

The 1917 Clark Street Rope Shop is the last of five four-and-five-story mills and shops that the Roebling Company built in Trenton in the era when the density of urban production required multi-story buildings. It also represents the evolution of the large "daylight factory" during the second decade of the 20<sup>th</sup> Century.

The 1930 Elmer Street Rope Shop Extension represents the dominance of the single-story factory after the First World War and the refining of industrial architectural details at the Roebling Works in the era of the International Style that emerged in the 1920s.

The 1918 Water Tower represents the introduction of sprinkler systems to suppress factory fires, which on several occasions significantly disrupted production and destroyed millions of dollars of buildings and machinery at the Roebling Works. Prior to the advent of high-pressure municipal water systems, factory owners like the Roeblings had to build tall water towers to provided sufficient water for fire suppression. The Roeblings built another water tower next to Block 2 on Hudson Street, but it was demolished like most other water towers in Trenton. With the rehabilitation of the Water Tower for cell phone communications, it will remain a beacon for Block 3 and the Roebling Works for many years to come.

## Origins

John A. Roebling started his wire rope business in Saxonburg, Pennsylvania, in 1841, and moved it to a parcel of land he bought on the Delaware and Raritan Canal in Trenton, New Jersey, in 1849. Through four generations of family ownership, the John A. Roebling's Sons Company significantly expanded its original Trenton Works, created other

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factories in the city, and built a steel and wire mill and a company town in Roebling, New Jersey. Roebling Block 3 is one of three blocks of the original Roebling factory in Trenton.

Roebling was born in Muhlhausen in Prussia in June, 1806. After attending elementary school and a mathematics institute, Roebling enrolled at the Royal Building Academy in Berlin, where he studied drawing, architecture, and the engineering of dams, roads and bridges. During this time he became particularly interested in suspension bridges, and he subsequently proposed building one in Westphalia, but the state authorities rejected his proposal.

Seeking broader opportunities, Roebling immigrated to America with a group of like-minded Germans in 1831, and they settled in western Pennsylvania about 35 miles north of Pittsburgh. Within a few years Roebling began working on canal and road projects for the State of Pennsylvania. When he observed problems with using hemp rope to haul canal boats on inclined planes over the Allegheny Mountains, he proposed making a rope of twisted wires, which he had read about in a trade journal. He built a rope walk on his farm in Saxonburg to make the rope, and its success soon led to many orders for wire rope for other inclined planes.

With his experience in rope making and his interest in suspension bridges, Roebling submitted a proposal in 1844 to build a suspension aqueduct for a canal over the Monongahela River in Pittsburgh. This bridge launched his bridge building career, and by 1848 he had erected five suspension aqueducts and one suspension bridge for pedestrians and wagons. That year he wrote to Peter Cooper asking for a recommendation for an advantageous location near New York and Philadelphia where he could relocate his wire rope business. At Cooper's advice, he purchased a long narrow parcel of 25 acres with frontage on South Broad Street, the Delaware and Raritan Canal and the Trenton branch of the Camden and Amboy Railroad. He built a rope walk, a small factory and a house on the site and moved his production and his family there in 1849.

Roebling's business grew steadily as he sold wire rope and wire for telegraph lines, shipping and mining. His completion of an 800 ft.-span railroad suspension bridge over the Niagara River in 1855 established his reputation as the premier suspension bridge builder in the world. In 1867, he completed an 1,100 ft.-span suspension bridge over the Ohio River at Cincinnati, and later that year in his study on South Broad Street he completed a proposal to build a 1,600 ft. span bridge over the East River to connect New York and Brooklyn. While surveying for the construction of this bridge in 1869, he was injured in an accident and died 10 days later. His son, Washington A. Roebling, a graduate of Rensselaer Polytechnic Institute, in Troy, New York, and chief assistant on the Cincinnati Bridge, became the Chief engineer for the Brooklyn Bridge and completed it in 1883.

By the time of his death, Roebling had quadrupled the size of his Trenton factory and employed about 100 men there (Historic Image 01). Washington and his brothers, Ferdinand and Charles, incorporated the business as the John A. Roebling's Sons Company, and they expanded significantly to meet an ever increasing demand for wire rope for emerging technologies like elevators, tramways, and cable cars, and for new products like elevatical wire, wire screening and plaster lath. Ferdinand managed the Company's sales and finances, and Charles supervised construction and manufacturing. As Washington later wrote, "Expansion was the order of the day."

After acquiring the adjacent American Saw Company site and building out their original block, Charles built additional mills and shops on a second block east of South Clinton Avenue. By 1890, Ferdinand had acquired about three quarters of a long, rectangular block to the north, and Charles had erected a two-story, 600 ft.-long by 75 ft.-wide Elmer Street Rope Shop with a Boiler House addition there, primarily to manufacture small-diameter ropes (Historic Images 02-03).

At that time, Duncan Mackenzie's Union Iron Company occupied the northern section of the block along Hamilton Avenue, and the eastern side of the block along Clark Street was lined with 40 rowhouses and the Clark Street Pottery. Roebling Alley separated the rowhouses from the Rope Shop, and another alley ran behind the Union Iron Works. The Roebling parcel had a long frontage on East Canal Street and contained rail lines to the original block across Elmer Street, plus two oil tanks (Historic Image 04). This northern block of the Roebling Works eventually became known as Block 3.

Charles erected buildings up until this time with traditional mill construction of brick load bearing walls, timber posts, beams and roof trusses, and wooden windows with double-hung sash (Historic Images 03-05). With the increased availability of structural steel in the late 1890s, he started using steel posts, girders and roof trusses in special buildings like the 1897 Generating Station on South Clinton Avenue. He also continued using traditional mill construction, as in the 1<sup>st</sup> Carpenter Shop he built with 1 ½ and 2 ½-story sections along East Canal Street on Block 3 in the early 1900s decade (Historic Image 06).

In 1902, Ferdinand acquired the Buckthorn Fence Company one-half mile south on the Canal for the Roebling electrical wire and wire cloth divisions. Charles erected new buildings there with brick load-bearing walls and steel posts and girders, and the brothers called the factory the Buckthorn Plant.

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A fire in 1908 completely destroyed the 1<sup>st</sup> Elmer Street Rope Shop and the 1<sup>st</sup> Carpenter Shop on Block 3, leaving "only a few bare walls and a sizzling mass of iron," as the *Trenton Times* noted (Historic Images 07-08). Charles built the 2<sup>nd</sup> Elmer Street Rope Shop with three stories using brick load bearing walls and steel posts and girders (Historic Image 9). He built a boiler House adjacent to it with steel posts and roof trusses. In building the 2<sup>nd</sup> Carpenter Shop (Building 101), Charles combined steel posts and girders on the first story with traditional timber posts and roof trusses on the second story (Historic Image 10).

Around 1912, Charles acquired 16 rowhouses on the southwest corner of Block 3 and built a 4-story Clark Street Rope Shop, using freestanding steel frame construction for the first time. Instead of the thick brick walls and smaller window openings in the traditional mill construction, the steel frame enabled the use of thin brick curtain walls and large steel-frame sash around the exterior.

As the Company expanded production during the early years of World War I, two suspicious fires associated with labor unrest in 1915 destroyed the Company's Buckthorn Plant in January and the 2<sup>nd</sup> Elmer and 1<sup>st</sup> Clark Street Rope Shops in November (Historic Images 11-12). As the *Trenton State Gazette* reported that November, "When the windows were burned out and the heavy north wind forced a draft there was no stop to the fire. Flames shot in all directions and licked up everything that would burn."

Thanks to the efforts of firefighters, the 1908 Carpenter Shop survived the fire (Historic Images 13-14), but Charles had to rebuild the lost rope shops quickly for war production. To power the two new rope shops on Block 3, he erected the Elmer Street Boiler House (104) with six boilers on the southwest corner of the Block in 1916 (Historic Images 14-15). Between the Boiler House and East Canal Street, he erected two Cooling Towers with reservoirs to recycle steam water. On the north end of the Boiler House, he erected a two-story Engine Room (105) in 1917 to house steam turbines to power generators producing 4000 KW of electricity (Historic Images 14-15).

That same year, Charles erected the 3<sup>rd</sup> Elmer Street Rope Shop (102) with three stories and the 2<sup>nd</sup> Clark Street Rope Shop (101) with four stories (Historic Image 16). He erected these modern "daylight factories" with freestanding steel frames, brick curtain walls, and windows with concrete sills, lintels and steel sash, and he added a roof monitor on top of the Clark Street Rope Shop for light and ventilation. Three and four-story mills were inefficient, as Washington Roebling noted when he wrote that "The capacity of the elevators measures the capacity of the mill," and these were the last tall buildings that the Roeblings erected.

To help fight fires, Charles installed sprinklers in the new rope shops and to supply the sprinklers he erected a Water Tower with a Valve House at its base on Clark Street (Historic Images 17-19). At 150 ft. in height, the tower rose 75 ft. above the top of the Clark Street Rope Shop to provide sufficient pressure for fire suppression.

In the 1920s, the Roebling Company acquired the Union Iron Works property at the northern end of Block 3 and the remaining rowhouses on Clark Street. When the Company won the contract to build the cables on the George Washington Bridge in 1928, it embarked on a modernization program to replace its 19<sup>th</sup> Century rope shops on Block 1. Between 1928 and 1930 it built a Testing House, a New Rope Shop and a Wire Rope Warehouse, utilizing freestanding steel frames, brick curtain walls, big steel sash windows, and skylight monitors.

The Company built a single-story Elmer Street Rope Shop Extension (Building 114) at the north end of Block 3 in 1930 (Historic Images 17-20). As noted in *Blue Center*, an in-house publication that the Company produced in its print shop on the fourth floor of the Clark Street Rope Shop (Historic Image 21), the extension was planned to "greatly improve shipping facilities and afford space for additional rope machinery. It will also give an impression of finish to the north end of the Works". The Extension followed the design and construction details of the New Rope Shop and Wire Rope Warehouse on Block 1.

After the Delaware & Raritan Canal closed in the 1930s, the State filled the section that ran south from the feeder canal at Perry Street and past the Roebling Works to the Crosswicks Creek at Bordentown.

The Roebling family sold their Company to the Colorado Fuel and Iron Company (CF&I) at the beginning of 1953 (Historic Image 22). CF&I operated the Roebling plants for another 20 years, but competition from foreign producers led to the closing of the plants in 1973 and 1974. Mercer County bought the Roebling headquarters buildings on South Broad Street for its administrative offices, and CF&I sold the factory buildings in Trenton to warehouse operators.

A 1980 proposal to demolish Block 2 of the former Roebling Works for a strip mall aroused neighborhood opposition that led to the N.J. State Office of Historic Preservation issuing an Opinion of Eligibility for the Roebling Works in 1980.

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Local citizens formed the nonprofit Trenton Roebling Community Development Corporation (TRCDC) in 1985 to spearhead the adaptive reuse of the Roebling Works, and they arranged for the Historic American Engineering Record to document the site in 1987 (Historic Images 13, 15-16 & 23). Block 3, like much of the rest of the Works, remained remarkably intact, thanks to low-impact warehouse use (Historic Image 24).

The New Jersey Department of Transportation completed Route 129 along the former Delaware and Raritan Canal rightof-way in 1994. In 1996, the initial phase of TRCDC's preservation plan came to fruition with the rehabilitation of Block 1 buildings for the Roebling Market, N.J. Housing Mortgage Finance Agency headquarters, and senior housing (Historic Image 25). The 1890-1901 Machine Shop on Block 3 was partially rehabilitated with N.J. Historic Trust funding and placed on the National Register in 1997.

Mercer County acquired Block 3 in 2000 and leased the 1918 Water Tower for cell phone communications. It sold the Block for a commercial redevelopment that never materialized, but the 1917 Elmer Street Rope Shop and 1908 Boiler House were demolished for parking for a new arena at the former American Steel & Wire Co. site on the west side of Route 129 (Historic Images 26-27). In 2004, N.J. Transit opened the River Line light rail along the former Camden and Amboy Railroad right-of-way between E. Canal St. and Route 129 with a Roebling Station at the southwest corner of Block 3. The County reacquired Block 3 in 2010 and has contracted to sell it again for redevelopment. The five extant buildings on the property have been vacant and deteriorating since the 1990s (Historic Image 28).

## 9. Major Bibliographical References

**Bibliography** (Cite the books, articles, and other sources used in preparing this form.)

An Inventory of Historic Engineering and Industrial Sites, Trenton, N.J., Trenton, N.J.: City of Trenton, 1977.

"John A. Roebling's Sons Company and American Steel & Wire Company," Trenton, N.J.; Historic American Engineering Record Survey, NJ-46, 1987.

Sanborn Map Company, Trenton Maps, 1890, 1908, 1927.

- Schuyler, Hamilton, The Roeblings: A Century of Engineers, Bridge Builders and Industrialists, Princeton: Princeton University press, 1929.
- Zink, Clifford W., Spanning the Industrial Age: The John A. Roebling's Sons Company, Trenton, N.J., 1848-1974. Trenton: Trenton Roebling Community Development Corporation, 1992.

Zink, Clifford W., The Roebling Legacy, Princeton: Princeton Landmark Publications, 2011.

#### Previous documentation on file (NPS):

X preliminary determination of individual listing (36	CFR 67 has been X State Histo	pric Preservation Office
requested)	Other State	e agency
previously listed in the National Register	Federal ag	ency
previously determined eligible by the National R	Register <u>X</u> Local gove	ernment Trenton Public Library
designated a National Historic Landmark	<u>X</u> University	Rutgers University Special Collections
recorded by Historic American Buildings Survey	/ #Other	
recorded by Historic American Engineering Rec	ord # NJ 46 Name of repos	sitory:
recorded by Historic American Landscape Surve	ey #	

Primary location of additional data:

Historic Resources Survey Number (if assigned):

7.1

John A. Roebling's Sons Co., Trenton, N.J., Block 3

Name of Property

## 10. Geographical Data

Acreage of Property

(Do not include previously listed resource acreage.)

## **UTM References**

(Place additional UTM references on a continuation sheet.)

1	18	520880	4451390	3		
	Zone	Easting	Northing	Zone	Easting	Northing
2				4		
	Zone	Easting	Northing	Zone	Easting	Northing

## Verbal Boundary Description (Describe the boundaries of the property.)

Begin at a point at the southern edge of the sidewalk on the southwest corner of the intersection of Hamilton Ave. and Clark St., and proceed S15°54'21"W, west of the sidewalk along Clark St. for 810.20 ft.; then proceed N74°00'00"W, north of the sidewalk along Elmer St. for 446.97 ft.; then proceed N24°34'05"E, along the east side of E. Canal St. for 720.70 ft.; then proceed S74°30'20"E, south of the sidewalk along Hamilton Ave. for 295.30 ft. to the point of beginning.

## Boundary Justification (Explain why the boundaries were selected.)

"Survey (Roebling Site), Mercer County Arena Offsite Parking, Mercer County Improvement Authority," of Block 135-A, Lots 1, 68 & 70, by Maitra Associates, P.C., Bridgewater N.J., 06-07-00.

## 11. Form Prepared By

name/title	Clifford W. Zink (www.cwzink.com)				
organization		date		11.21.11	
street & number	54 Aiken Avenue	telephone		609.439.7700	)
city or town	Princeton	state	NJ	zip code	08540
e-mail	cwzink@gmail.com			•	

## **Additional Documentation**

Submit the following items with the completed form:

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. Key all photographs to this map. See Illustrations.

• Additional items: (Check with the SHPO or FPO for any additional items.)

## **Property Owner:**

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

name	Mercer County Improvement Authority				
street & number	640 South Broad Street	telephone		609.278.8080	
city or town	Trenton	state	NJ	zip code	<u>08611</u>

Mercer Co., NJ

County and State

Name of Property

## Photographs:

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map.

## **Current Photographs**

Name of Property: City or Vicinity: County: State: Name of Photographer: Date of Photographs: Location of Original Digital Files: Number of 2011 Photographs:

John A. Roebling's Sons Co. Block 3 Trenton Mercer County NJ Clifford W. Zink March & May 2011 54 Aiken Ave., Princeton, NJ 08540 0001-0026

NJ\_Mercer County\_John A. Roebling's Sons Co. Block 3\_2011 Photographs Map

NJ_Mercer County_John A. Roebling's Sons Co. Block 3_0001. Building 101, view NW, CW Zink 2011.tif
NJ_Mercer County_John A. Roebling's Sons Co. Block 3_0002. Building 101, view SE, CW Zink 2011.tif
NJ_Mercer County_John A. Roebling's Sons Co. Block 3_0003. Building 101, 1st Floor view N, CW Zink 2011.tif
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2011.tif
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NJ Mercer County John A. Roebling's Sons Co. Block 3 0025. Building 114, view N, CW Zink 2011.tif
NJ Mercer County John A. Roebling's Sons Co. Block 3 0026. Building 114, view N, CW Zink 2011.tif

## Historic Images: 01-28

NJ\_Mercer County\_John A. Roebling's Sons Co. Block 3\_01. 1872 Trenton Bird's Eye View, right center NJ\_Mercer County\_John A. Roebling's Sons Co. Block 3\_02. 1890 Sanborn Map NJ\_Mercer County\_John A. Roebling's Sons Co. Block 3\_03. c1895, 1908 Boiler House & Elmer St. Rope Shop, left NJ\_Mercer County\_John A. Roebling's Sons Co. Block 3\_04. Works of John A. Roebling's Sons Company, Trenton, N.J., 1898, view NE NJ\_Mercer County\_John A. Roebling's Sons Co. Block 3\_05. 1st Elmer Street Rope Shop c1888 - RPI NJ\_Mercer County\_John A. Roebling's Sons Co. Block 3\_06. c1905, view SE, 1st Carpenter Shop, left.tif NJ\_Mercer County\_John A. Roebling's Sons Co. Block 3\_07. 1908 Fire, view NW.tif NJ\_Mercer County\_John A. Roebling's Sons Co. Block 3\_08. 1908 Sanborn Map.tif NJ\_Mercer County\_John A. Roebling's Sons Co. Block 3\_09. c1910, D&R Canal panarama, view E.tif NJ\_Mercer County\_John A. Roebling's Sons Co. Block 3\_10. c1910, view SE, 1908 Carpenter Shop, left.tif

Mercer Co., NJ

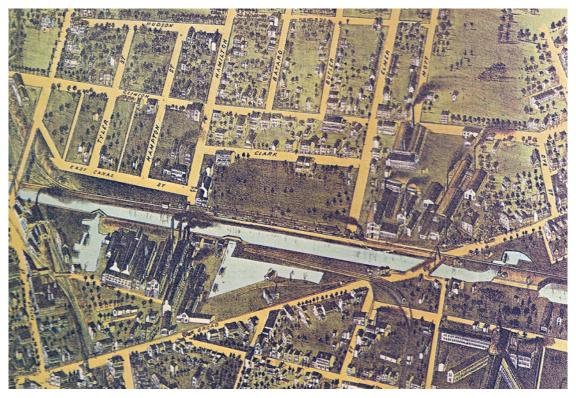
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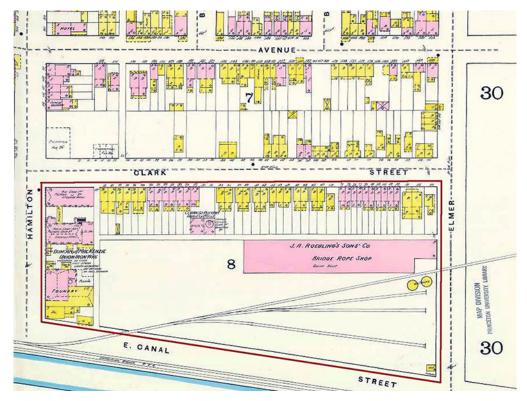
Mercer Co., NJ County and State

NJ Mercer County John A. Roebling's Sons Co. Block 3 11. 1915 Fire, view NW, 1st Clark Street Rope Shop.tif NJ\_Mercer County\_John A. Roebling's Sons Co. Block 3\_12. 1915 Fire, view N, 2nd Elmer St. (left) & 1st Clark St. Rope Shops, RPI.tif NJ Mercer County John A. Roebling's Sons Co. Block 3 13. 1908 Carpenter Shop (110), view NW - HAER 1987 NJ\_Mercer County\_John A. Roebling's Sons Co. Block 3\_14. 1927 Sanborn Map.tif NJ Mercer County John A. Roebling's Sons Co. Block 3 15. 1917 Boiler House (104) - 1987 HAER tiff NJ Mercer County John A. Roebling's Sons Co. Block 3 16. 1917 Elmer St. and Clark St. Rope Shops (101) - 1987 HAER.tif NJ Mercer County John A. Roebling's Sons Co. Block 3 17. 1930 Elmer St Rope Shop Extension (114) - 1987 HAER.tif NJ Mercer County John A. Roebling's Sons Co. Block 3 18. 1931, Hagley Library.tif NJ\_Mercer County\_John A. Roebling's Sons Co. Block 3\_19. Insurance Map c1950.tif NJ Mercer County John A. Roebling's Sons Co. Block 3 20. c1950, view NE.tif NJ Mercer County John A. Roebling's Sons Co. Block 3 21. c1952, Clark Street Rope Shop Printing Dept., 4th Floor, view NE .tif NJ Mercer County John A. Roebling's Sons Co. Block 3 22. c1952, view N Clark Street Rope Shop, left.tif NJ Mercer County John A. Roebling's Sons Co. Block 3 23. Roebling Co. & American Steel & Wire Co., HAER, 1987, J. Bowie.tif NJ Mercer County John A. Roebling's Sons Co. Block 3 24. Roebling Co. Block 3, center, American Steel & Wire Co., top, 1987.tif NJ Mercer County John A. Roebling's Sons Co. Block 3 25. view SE, Bing 2010.tif NJ Mercer County John A. Roebling's Sons Co. Block 3 26. view N from Block 1, CW Zink 2011.jpg NJ Mercer County John A. Roebling's Sons Co. Block 3 27. Survey 2000.tif

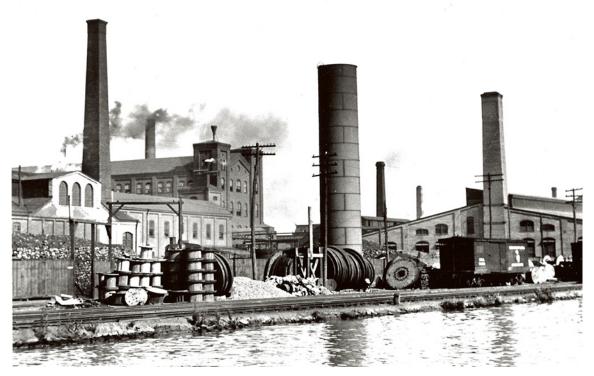
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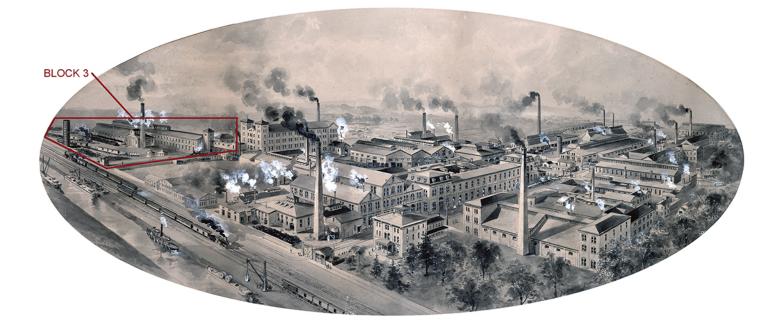
1. 1872 Trenton Bird's Eye View, John A. Roebling's Sons Co. right center



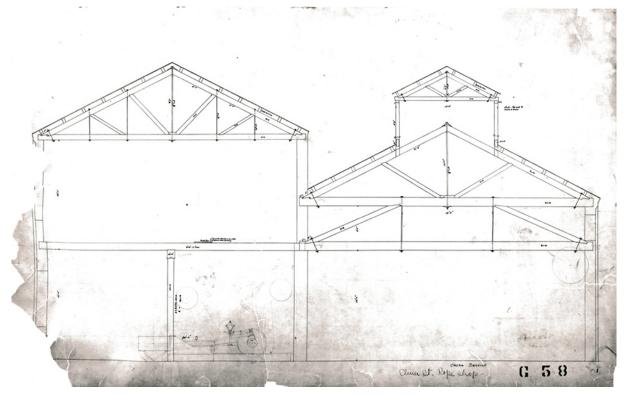
2. 1890 Sanborn - John A. Roebling's Sons Co. Block 3



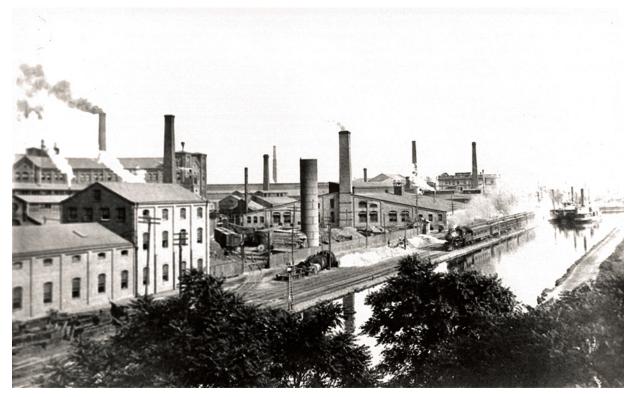
3. John A. Roebling's Sons Co. c1895, 1908 Boiler House & Elmer St. Rope Shop, left



4. Works of John A. Roebling's Sons Company, Trenton, N.J., 1898, view NE



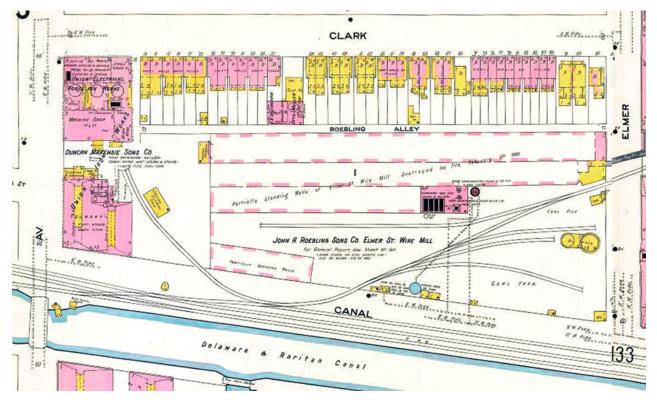
5. John A. Roebling's Sons Co., 1st Elmer Street Rope Shop c1888 - RPI



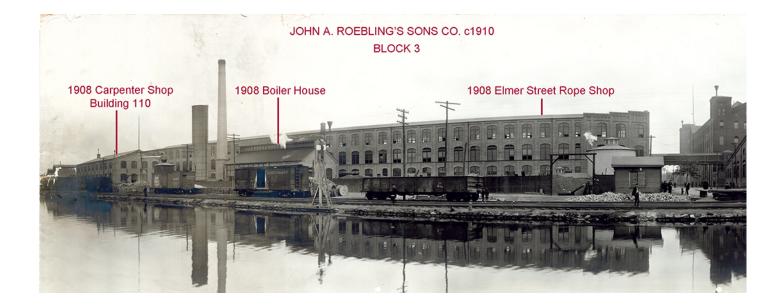
6. John A. Roebling's Sons Co. c1905, view SE, 1st Carpenter Shop, left



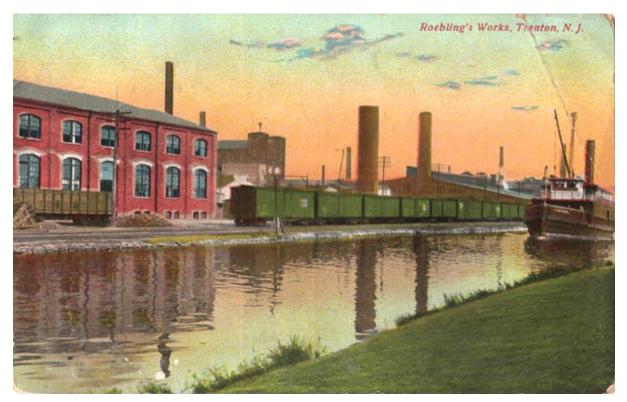
7. John A. Roebling's Sons Co., 1908 Block 3 Fire, view NW



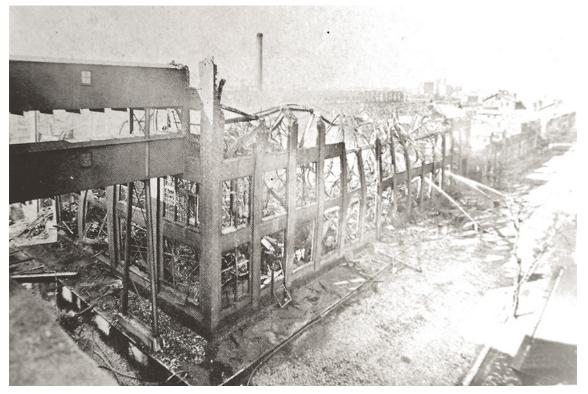
8. 1908 Sanborn - John A. Roebling's Sons Co. Block 3



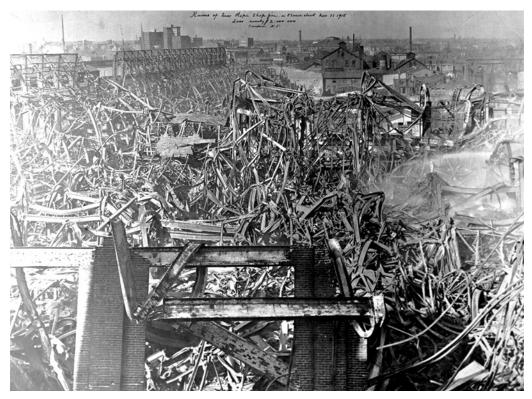
9. John A. Roebling's Sons Co. Block 3 c1910, D&R Canal panarama, view E



10. John A. Roebling's Sons Co. c1910, view SE, 1908 Carpenter Shop, left



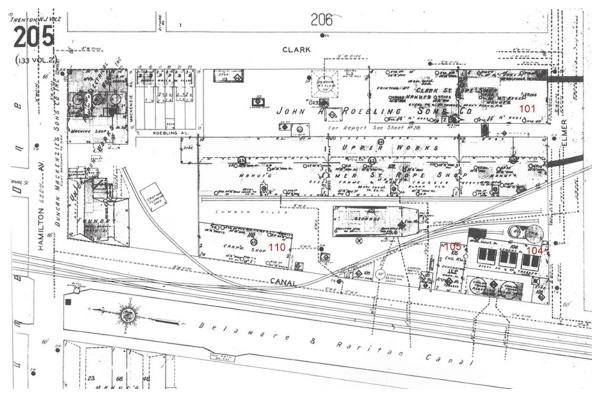
11. John A. Roebling's Sons Co. 1915 Fire, view NW, 1st Clark Street Rope Shop



12. John A. Roebling's Sons Co. 1915 Fire, view N, 2nd Elmer St. Rope Shop, left, 1st Clark St. Rope Shop, center - ...



13. John A. Roebling's Sons Co., 1908 Carpenter Shop (110), view NW - HAER 1987



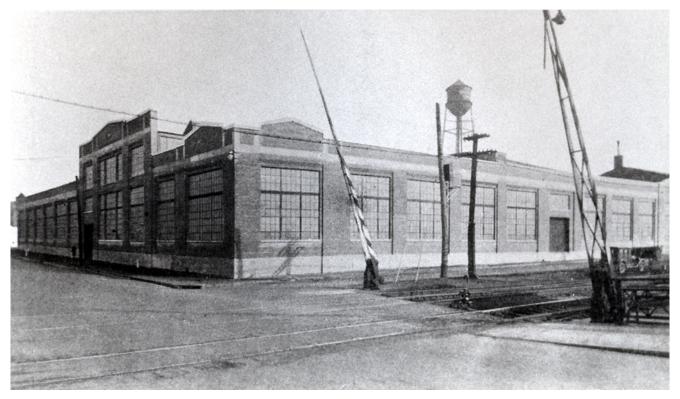
14. 1927 Sanborn - John A. Roebling's Sons Co. Block 3



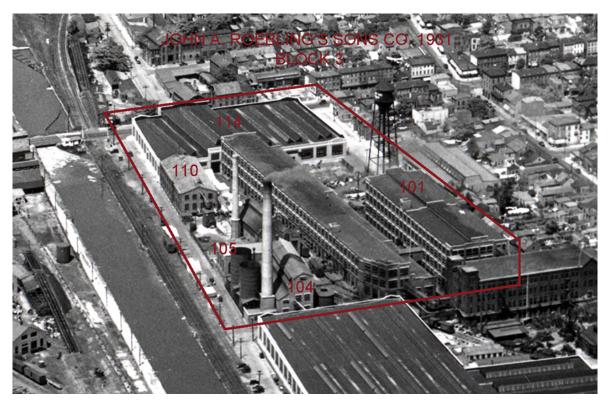
15. John A. Roebling's Sons Co., 1917 Boiler House (104) - 1987 HAER



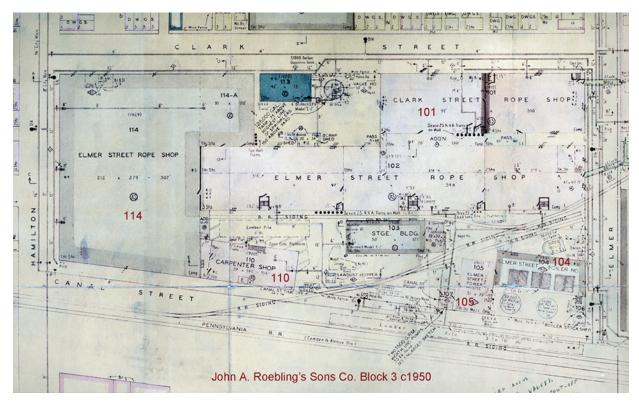
16. John A. Roebling's Sons Co., 1917 Elmer St. Rope Shop, center, Clark St. Rope Shop (104) - 1987 HAER



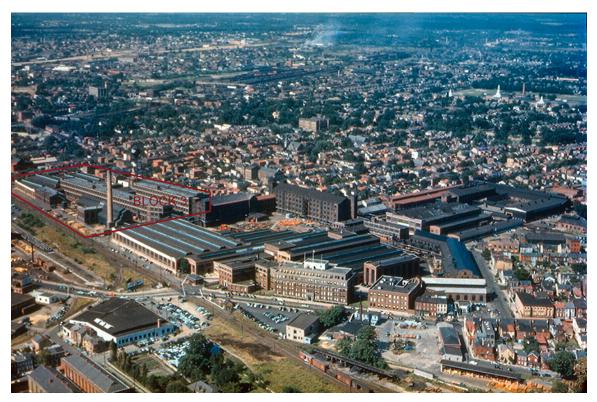
17. 11. John A. Roebling's Sons Co., 1930 Elmer St Rope Shop Extension - 1987 HAER



18. John A. Roebling's Sons Co. Block 3 1931, Hagley Library



19. John A. Roebling's Sons Co. Block, Insurance Map c1950



20. John A. Roebling's Sons Co. c1950, view NE

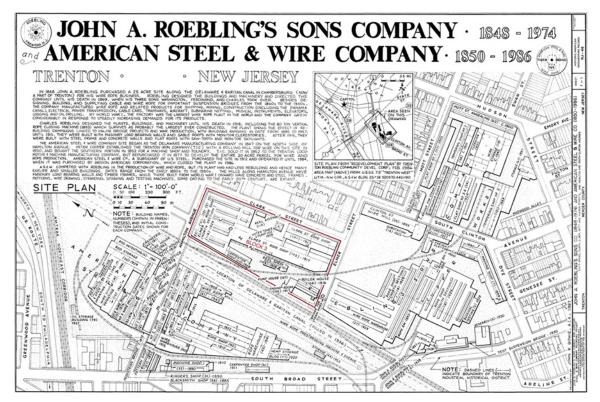


21. John A. Roebling's Sons Co. c1952, Clark Street Rope Shop Printing Dept., 4th Floor, view NE



22. John A. Roebling's Sons Co. c1952, view N Clark Street Rope Shop, left

John A. Roebling's Sons Company Trenton Plant Block 3 - CW Zink 2011



23. John A. Roebling's Sons Co. & American Steel & Wire Co., HAER, 1987, John. Bowie



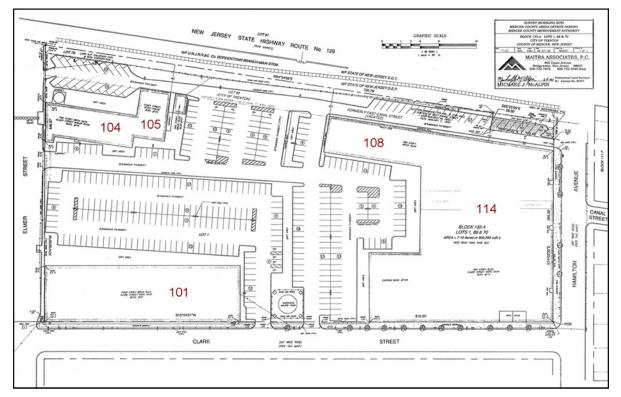
24. John A. Roebling's Sons Co. Block 3, center, American Steel & Wire Co., top left, 1987



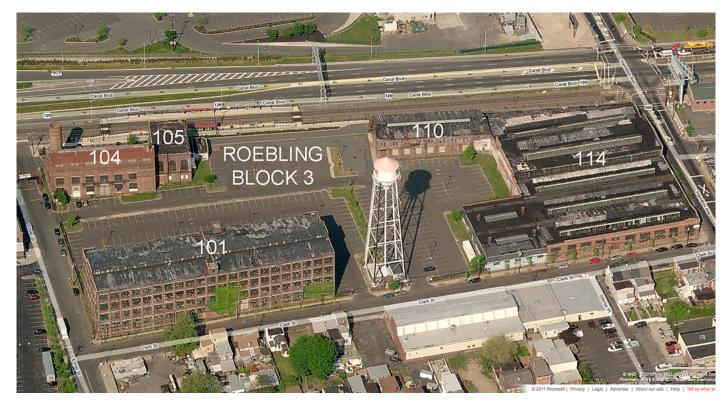
25. John A. Roebling's Sons Co. Block 3, view west 2010



26. John A. Roebling's Sons Co. Block 3, view north from Block 1 CW Zink 2011



27. John A. Roebling's Sons Co. Block 3, Survey 2000



28. John A. Roebling's Sons Co. Block 3, view west 2010



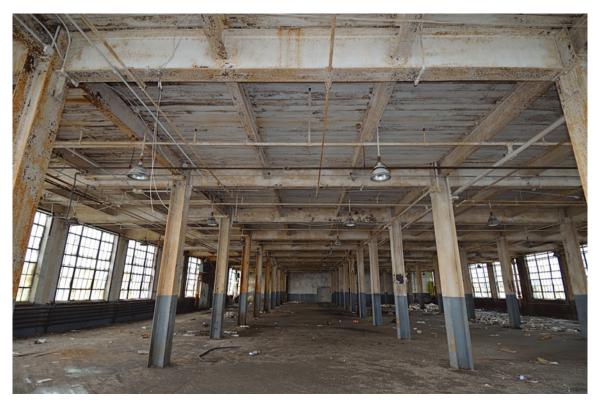
29. John A. Roebling's Sons Co. Block 3, 101 view NW, CW Zink 2011



30. John A. Roebling's Sons Co. Block 3, 101 view SE, CW Zink 2011



31. John A. Roebling's Sons Co. Block 3, 101 1st Floor view N, CW Zink 2011



32. John A. Roebling's Sons Co. Block 3, 101 2nd Floor view N, CW Zink 2011



33. John A. Roebling's Sons Co. Block 3, 101 3rd Floor view N, CW Zink 2011



34. John A. Roebling's Sons Co. Block 3, 101 4th Floor view S, CW Zink 2011



35. John A. Roebling's Sons Co. Block 3, 104 view NW, CW Zink 2011



36. John A. Roebling's Sons Co. Block 3, 104 view NE, CW Zink 2011



37. John A. Roebling's Sons Co. Block 3, 104 view S, CW Zink 2011



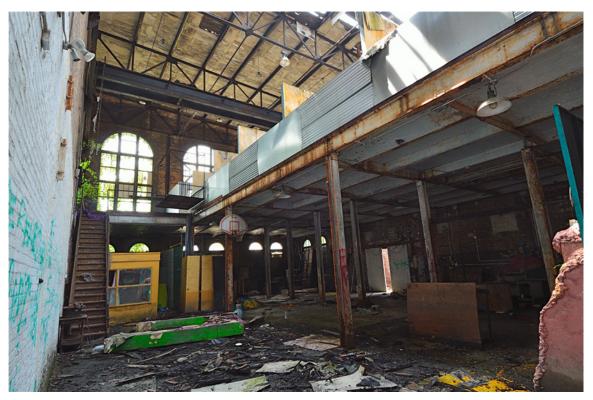
38. John A. Roebling's Sons Co. Block 3, 104 view NW, CW Zink 2011



39. John A. Roebling's Sons Co. Block 3, 104 & 105 view SW, CW Zink 2011



40. John A. Roebling's Sons Co. Block 3, 105 view E, CW Zink 2011



41. John A. Roebling's Sons Co. Block 3, 105 view NW, CW Zink 2011



42. John A. Roebling's Sons Co. Block 3, 105 view NE, CW Zink 2011



43. John A. Roebling's Sons Co. Block 3, 110 view NW, CW Zink 2011



44. John A. Roebling's Sons Co. Block 3, 110 view NE, CW Zink 2011



45. John A. Roebling's Sons Co. Block 3, 110 1st Floor view N, CW Zink 2011



46. John A. Roebling's Sons Co. Block 3, 110 2nd Floor view S, CW Zink 2011



47. John A. Roebling's Sons Co. Block 3, 114 view SE, CW Zink 2011



48. John A. Roebling's Sons Co. Block 3, 114 view S, CW Zink 2011



49. John A. Roebling's Sons Co. Block 3, 114 view SW, CW Zink 2011



50. John A. Roebling's Sons Co. Block 3, 101-Water Tower-114 view S, CW Zink 2011



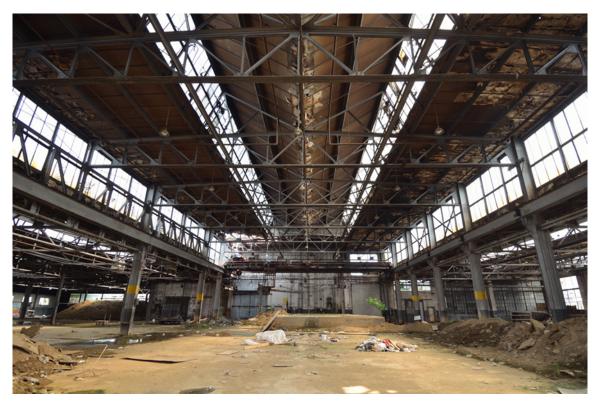
51. John A. Roebling's Sons Co. Block 3, 114 view NW, CW Zink 2011



52. John A. Roebling's Sons Co. Block 3, 114 view NW, CW Zink 2011



53. John A. Roebling's Sons Co. Block 3, 114 view N, CW Zink 2011



54. John A. Roebling's Sons Co. Block 3, 114 view N, CW Zink 2011