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 of eligibility for individual properties or 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 an 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 listed in 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 **Arch Bridge from the Boonton Ironworks**

other names/site number

2. Location

street & number Grace Lord Park ☐ not for publication

city or town Boonton Town ☐ vicinity

state New Jersey code NJ County Morris zip code 07005

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I certify that this [X] 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 [X] 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.

Signature of certifying official/Title Date

Deputy SHPO Assistant Commissioner for Natural & Historic Resources
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: Signature of the Keeper Date of Action

☐ 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:)

5. Classification

Ownership of Property
(Check as many boxes as apply)

- [ ] private
- [x] public-local
- [ ] public-State
- [ ] public-Federal

Category of Property
(Check only one box)

- [ ] building(s)
- [ ] district
- [ ] site
- [x] structure
- [ ] object

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

Contributing	Noncontributing	
		buildings
		sites
1		structures
		objects
1	0	Total

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

N/A

Number of contributing resources previously listed in the National Register

6. Function or Use

Historic Functions
(Enter categories from instructions)

OTHER/fire suppression
TRANSPORTATION/pedestrian-related

Current Functions
(Enter categories from instructions)

TRANSPORTATION/pedestrian-related
RECREATION AND CULTURE/outdoor recreation

7. Description

Architectural Classification
(Enter categories from instructions)

No Style

Materials
(Enter categories from instructions)

foundation
walls
roof
other Fieldstone bridge and abutments
Concrete cap on walkway surface

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 patterns of our history.
- [ ] **B** Property is associated with the lives of persons significant in our past.
- [x] **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.

Areas of Significance
(Enter categories from instructions)

Engineering

Period of Significance

1866

Significant Dates

1866

Significant Person
(Complete if Criterion B is marked above)

Cultural Affiliation

Architect/Builder

John Carson, Sr.

Narrative Statement of Significance
(Explain the significance of the property on continuation sheets.)

9. Major Bibliographical References

Bibliography
(cite the books, articles, and other sources used in preparing this form on continuation sheets.)

Previous documentation on file (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:

Ironworks	**Morris County, New Jersey**
Name of Property	County and State

10. Geographical Data

Acreage of property 0.36 acres

Latitude / Longitude Coordinates
(Note to Preparers: NJ HPO will complete this portion of the Registration Form for all Preparers, based on the coordinates derived from the Site Map or District Map that HPO produces.)

Lat. 40.906498 Long. -74.415871
Map Datum: WGS84

(NJ HPO will place additional coordinates, if needed, on a continuation sheet for Section 10.)

Verbal Boundary Description
(Describe the boundaries of the property on a continuation sheet for Section 10.)

Boundary Justification Statement
(Explain, on the section sheet following the Verbal Boundary Description, how the chosen boundaries meet the requirements for boundary selection and are the most appropriate boundaries for the nominated property or district.)

11. Form Prepared By

name/title Margaret M. Hickey, AIA, and Beth A. Bjorklund, Historic Preservation Specialists

organization Connolly & Hickey Historical Architects, LLC date December 14 2021

street & number P.O. Box 1726 telephone 973-746-4911

city or town Cranford state NJ zip code 07016

Additional Documentation

(Submit the additional items with the completed form that are outlined in the "Standard Order of Presentation" that NJ HPO provides. Each page must contain the name of the nominated property or district, and the State and the county in which the property or district is located. Consult with NJ HPO if you have questions.)

Property Owner

(Either provide the name and address of the property owner here or provide the information separately to NJ HPO. Check with NJ HPO for other requirements. All owners' names and addresses must be provided, including public and non-profit owners, but their presence on the form, itself, is not required).

name Town of Boonton

street & number 100 Washington Street telephone 973-402-9410

city or town Boonton state NJ zip code 07005

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Arch Bridge from the Boonton Ironworks
Name of Property
Morris County, NJ
County and State
Name of multiple listing (if applicable)

Summary Paragraph

The Arch Bridge from the Boonton Ironworks was constructed in 1866 and is a single-span, arched rubble fieldstone bridge with curved wing walls that sit on the wooded and rocky slopes of the Rockaway River in Grace Lord Park. While the bridge was constructed to serve a specific purpose of carrying a constant piped water supply to the ironworks for fire protection, it has also served as a pedestrian bridge likely since construction, which continues as its use today.

Narrative Description

The Arch Bridge is located within Grace Lord Park and crosses the Rockaway River at a naturally narrow point approximately a quarter of a mile downstream from the Boonton Falls. A curving gravel and dirt trail (Photographs 0001 and 0003) extends northwest-southeast through the park on the west side of the river and approximately follows the path of the river between entrances at opposite ends of the park at Main Street at the northwest end and Morris Avenue at the southeast end. Approximately one-quarter of a mile southeast of the Main Street entrance, an extension of the trail crosses the river via the Arch Bridge (Photograph 0002). The trail on the east side also roughly follows the river southeast, first as a gravel and dirt trail and then as a paved road that runs through the former industrial site that is now home to the Town of Boonton's public works buildings. A rocky outcropping, locally called Indian Rock, is located immediately east of the bridge.

The Arch Bridge is a single-span, arched, coursed rubble fieldstone bridge with curved wing walls that are built into the wooded and rocky slopes of the Rockaway River (Photographs 0004 and 0005). The arch support spans the Rockaway River approximately thirty-six feet from its stone foundation, and the arch has a radius of approximately nineteen feet. The clear width of the footbridge is nine feet and has a deck length of forty-seven feet. The wing walls are dry-laid rubble fieldstone of fairly regularly-sized stones with larger stones at the base (Photographs 0008 and 0009). The wing walls extend from the four corners of the bridge in slight arcs from the southeast and northwest corners approximately seventy-one feet, from the northeast corner forty-four feet, and from the southwest corner approximately thirty feet. The bridge itself is of mortared coursed rubble fieldstone (Photographs 0007) and does not rise above the concrete deck. The voussoirs are coursed ashlar, and at the keystone there is a cast iron plate inscribed with "FL-18-66" [Fuller & Lord 1866] (Photograph 0006). The bases of the arch rest on large boulder-like stones at the river edge. There are five iron tie rods through the masonry with the anchor plates visible at the faces of the bridge. The bridge slopes down toward the northeast, with an approximate drop of four feet over the span of the bridge. There is a concrete cap on the walkway surface of the bridge, and steel chain link fences enclose the walkway in place of a split rail fence that existed historically; this steel fence continues for several feet on the east side of the bridge and even farther along the west side of the bridge.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Arch Bridge from the Boonton Ironworks
Name of Property
Morris County, NJ
County and State
Name of multiple listing (if applicable)

Statement of Significance
The Arch Bridge from the Boonton Ironworks is significant under Criterion C in the area of Engineering as a fine example of a nineteenth-century single-span, arched rubble fieldstone bridge that was constructed with the specific purpose of carrying a water pipe for fire suppression at the Boonton Ironworks and the secondary purpose of a pedestrian bridge. It may be a unique resource based on its distinctive historic use. The period of significance is 1866 for its date of construction.

Narrative Statement of Significance[1]

Stone Arch Bridges
The stone arch bridge is the earliest surviving bridge type in New Jersey as it was the first permanent bridge type built in the United States. Colonists brought the technology for their design and construction with them, although construction of these bridges still was rare due to the time and expense to building them. They were relatively small structures and typically were constructed by local masons of stone gathered or quarried nearby.[2] Toward the end of the eighteenth century, stone arch bridges were constructed at major city crossings and on heavily-trafficked highways, and in the nineteenth century their construction was spurred by the networks of turnpikes, canals, and railroads that crossed the state.[3] By the late-nineteenth century, construction of metal truss bridges began to supplant stone arch bridges, which was joined by concrete bridge construction in the early-twentieth century. The majority of surviving stone arch bridges are road bridges, though some stone arch canal features, such as culverts and aqueducts, as well as some railroad bridges survive. Stone arch bridges are significant as surviving examples of first-generation bridge technology in the state and country.[4]

There is a range of subtypes of arch stone bridges. The simplest are small, single-span bridges and culverts of random rubblestone construction, such as the so-called "country bridges" found throughout Hunterdon County that are somewhat crude in their design. While these would have been some of the earliest stone arch bridges constructed, this type also was constructed into the twentieth century on small, rural roads. By the late-eighteenth century, slightly more refined arch stone bridges emerged utilizing semi-coursed or coursed rubblestone with dressed voussoirs or ring stones. By the 1820s and 1830s, arch bridges began to feature coursed ashlar masonry of smooth or tooled dressed blocks with thin, regular mortar joints, and this continued through the nineteenth century.[5] The construction of engineered stone arch bridges began with the emergence of the railroad around the mid-nineteenth century. As these bridges became important features of railroads, their construction was reported and analyzed in engineering literature of the day.[6] Sophisticated, higher-style bridges were also constructed

[1] Portions of the history of Boonton and the ironworks is adapted from "Conditions Assessment and Recommendations Plan for the Arch Bridge Over the Rockaway River from the Boonton Ironworks," prepared by Connolly & Hickey Historical Architects, February 22, 2019.
[2] Marvin A. Brown, Early Stone Arch Bridges of Somerset County, New Jersey Multiple Property Documentation Form, 1992, section E, page 1.
[3] Brown, section E, page 1.
[4] A. G. Lichtenstein & Associates, Inc., The New Jersey Historic Bridge Survey, September 1994, 54.
[5] A. G. Lichtenstein & Associates, 54
[6] Thomas E. Boothby, Cecelia J. Rusnak, John Hawkins, and Ageliki Elefteriadou, Stone Arch Bridge Inventory,

in cities and on major roadways, and utilized string courses, buttresses, and various decorative elements at the stone. There was a revival of stone arch bridge construction during the late 1930s, as the Works Progress Administration employed out of work people to construct bridges and other transportation improvements throughout the country using local materials and local labor. Stone arch bridges were the most prevalent bridge type constructed through the program and varied greatly but were often fairly rustic in nature.[7]

The Arch Bridge at the Boonton Ironworks

The Arch Bridge was constructed in 1866 to cross the Rockaway River in Boonton. This structure was constructed to carry a pipe across the river with a continuous water supply to the Boonton Ironworks, as use of a blast furnace was inherently dangerous and a fire hazard. While water mains were laid throughout the ironworks for fire protection, the water supply came from the Morris Canal, which at times needed to be drained for repairs and other reasons. Fuller and Lord, proprietors of the ironworks, are said to have hired John Carson, Sr., a Scottish mason who lived in Boonton, to build a bridge to carry a pipe for a constant water supply and therefore reliable fire protection to the ironworks; the water was piped from a pond to fire hydrants at key points throughout the ironworks.[8] The single-span arched bridge was constructed of cut fieldstone that was either quarried locally or may have come from Mt. Hope, in nearby Rockaway. A cast iron keystone plate on the downstream side of the arch is inscribed with "FL-18-66," in three lines; this is believed to stand for Fuller and Lord, 1866. Just before the bridge was complete John Carson was injured by a premature blast meant to break stone for the east-side approach to the bridge. He died several months later from his injuries.

The arch bridge appears on a circa 1867 map of the property of Fuller and Lord[9] labeled as "B. Furnace Bridge" and the path leading to the bridge is labeled as a footpath, showing the bridge may have served a double purpose of carrying the water pipe and also as a footbridge as early as the time of its construction. On the 1886 Sanborn Map, a pipe extends across the bridge and "this 16" w. pipe connects with pond ¼ mile distant and at elev. of 100'," is notated below. On the 1892 Sanborn map[10] the words "stone arch bridge," have been added across the bridge. A photograph taken between 1890 and 1901 (Figure 6) is the earliest known image of the bridge and shows it much as it appears today except for a wooden post-and-rail fence instead of the existing chain-link fence and concrete cap on the walkway.

Phase II, Hunterdon County, New Jersey, 1998, 8.

[7] Stone Arch Bridges, "The WPA Stone Arch Bridges," https://stonearchbridges.com/2020/08/04/the-wpa-stone-arch-bridges/ (accessed December 2021).

[8] Dick Lewis, "There Goes the Mill Bell," in *The Boonton Years: 1867-1967, ed. Maudie Fischer* (Boonton, NJ: Boonton Public Library, 1967), 37.

[9] Aug. J. Rossi, C.E., "Block D, Boonton Park Property," undated, possibly from circa 1867. In the collection of the North Jersey History & Genealogy Center of the Morristown & Morris Township Library.

[10] Sanborn Map and Publishing Company, "Boonton, New Jersey," (NY: Sanborn-Perris Map Co., Limited, 1892), plate 5.

Early Development of Boonton and the First Ironworks
The original center of the Town of Boonton was located along the Rockaway River approximately one and-one-half miles from the present center of Boonton; this area is now covered by the Boonton Reservoir (also called the Jersey City Reservoir). The old section of Boonton served as the place of some of the earliest forges and furnaces in Morris County in the eighteenth century due to the proximity to the water power of the Rockaway River and its falls that resulted from the glacial deposits, and to the county's significant iron ore deposits, vast forests and limestone outcroppings.

Boonton was created from portions of Pequannock and Hanover Townships in 1867. The area of Pequannock was first settled in the late-seventeenth century by European settlers arriving around 1695.[11] The lower and eastern parts of the Township were settled by the Dutch, and the region is characterized by hilly and wooded land with its most prevalent natural resource being rich with extensive veins of iron ore. Hanover Township was first settled in 1676 and attracted settlers from New England, who were of English origin, for its vast forests, arable lands, iron ore, and water resources. The geography of Boonton is defined by its position along the Rockaway River with the original settlement being divided in two by the river.

The majority of Morris County, including Boonton, is located within the Highlands physiographic region of New Jersey where the land is generally inadequate for farming but rich with iron ore. The first record of iron operations in the region of Old Boonton was in 1747-48, when the Proprietors of East Jersey surveyed the region after acquiring any unsold parcels in Morris County in 1742. At that time, it was noted that Obadiah Baldwin was operating an ironworks, but the extent of the operations is unknown.[12] David Ogden, a lawyer from Newark, purchased property in Old Boonton in 1759 and may have operated a forge either concurrent with Baldwin's operations or at the same location. Ogden may have been the first to name the area circa 1760 after Thomas Boone, the Royal Governor of the province at the time. The first time the name was written appears to be when Samuel Ogden, David's son, called it "Boon-Town" in 1771.[13]

David Ogden purchased the ironworks from his father, bought additional land on the opposite bank of the Rockaway River, and began to expand operations by constructing a rolling and slitting mill. The whole expansion included purchasing the machinery from England; hiring two experts to erect and operate it; maintaining forge fires to reheat the iron prior to rolling and slitting; and constructing a dam, flume and water wheel to harness the power of the water. After the American Revolution, Samuel Ogden leased the ironworks to John Jacob Faesch who managed the property until his death in 1799. The entire property was later sold at auction in 1821 to Israel Crane and William Scott.[14]

[11] Jane R. Primerano, "Boonton," in Maxine N. Lurie and Marc Mappen, *Encyclopedia of New Jersey* (New Brunswick, NJ: Rutgers University Press, 2004), 109.
[12] Peter C. Wendt, Jr., *Boonton Was An Iron Town* (Boonton, NJ: Boonton Historical Society, 1976), 3.
[13] Maudie Fischer, Editor, *The Boonton Years: 1867 to 1967: Compiled for the Boonton Centennial Committee by the Citizen* (Boonton, NJ: Boonton Public Library, 1967), 4.
[14] Fischer, 6.

By the early to mid-nineteenth century, it was generally accepted that overland transportation was inferior to that of waterways, and more regions began to rely on the technology of canal systems in the hopes of reducing both time and the cost of transportation.[15] Businessmen in northern New Jersey recognized the success of canals elsewhere, and began to plan for such technology in order to better transport the anthracite and iron products of their region. The first major transportation advance in the area came with the creation of the Morris Canal, the construction of which began in 1825. Throughout its existence, the Canal carried anthracite coal from Pennsylvania and the iron ore from the hills of northwestern New Jersey to the forges and furnaces in Morris and Warren Counties in New Jersey. The iron product was then transported along the canal from New Jersey to major ports such as New York City. The canal was intended to inject new life into the New Jersey iron industry, which suffered in the early-nineteenth century due to want of an efficient and abundant fuel source and a means of transporting the iron product to market. George Macculloch, a businessman from Morristown, had the idea to build the canal using water from Lake Hopatcong to connect the drainage of the Rockaway River with that of the Musconetcong River.[16] On December 31, 1824, the New Jersey Legislature granted a charter to the Morris Canal and Banking Company, and the Morris Canal was built section-by section over the course of seven years. When construction finished in 1831, the canal connected Phillipsburg to Newark and required 23 lift locks and 23 inclined planes in order to accommodate a 1,674-foot change in elevation.[17]

When the Morris Canal was constructed at Boonton, it was located approximately one mile northwest from the site of the ironworks at Old Boonton. Although there remained some industrial operations at Old Boonton in the nineteenth century, the majority of the new industrial activity was located close to the Morris Canal. By 1890, the Jersey City Water Supply Company had purchased much of the property referred to as Old Boonton for the purpose of constructing a reservoir, which was built between 1902 and 1903, subsequently flooding the area.[18]

Origins of the Boonton Ironworks

The Boonton Ironworks was largely responsible, along with the Morris Canal and the broader regional iron industry, for the development of the Town of Boonton. The ironworks and the Morris Canal both began operation in 1831. During the 1820s, in anticipation of construction, the Morris Canal Company acquired property in Boonton from William Scott along with the right to dam the Rockaway River above the Boonton Falls. In exchange, Scott received the right to use the canal as a raceway to power any mills built in the ravine below as long as the water eventually returned to the canal. This led to an increase in the value of his remaining property, which totaled approximately two-hundred acres.[19] The canal generally paralleled the Rockaway River along its north side. A gatehouse between the canal and pond

[15] Spiro G. Patton, "Canals in American Business and Economic History: A Review of the Issues." *Canal History and Technology Proceedings*: Volume VI March 28, 1987, ed. Lance E. Metz, 5 and 7.
[16] Joseph J. Macasek, *Guide to the Morris Canal in Morris County* (West Orange, New Jersey: Midland Press, Inc., 1996), 8.
[17] Macasek, 8-9.
[18] Fischer, 6-7.
[19] Arthur Rabin, *Voices of America: Boonton, NJ* (Charleston, SC: Arcadia Publishing, 2001), 27.

above the dam controlled the flow of water from the river into the canal, and a floodgate allowed water from the canal back into the river.

In 1829 and 1830, Daniel Wetmore, an iron merchant from New York, acquired over 200 acres in Boonton from William Scott and others, and by the following year he sold the property to the New Jersey Iron Company, which he formed along with investors.[20] The iron company constructed rolling mills, puddling furnaces, and foundry between the canal and the river, for a cost of $283,000. Experienced iron workers and machinery were brought from England, with the first shipload of families and equipment arriving from Staffordshire in June of 1830 and a second shipload later that year.[21] Operation began in May 1831 under the supervision of Wetmore and William Green, who utilized the canal in the agreed-upon way, diverting the water into a retention pond to power its rolling mills. The ironworks depended on the canal to bring iron ore to the site and carry away the products.

Originally, everything was contained within the rolling mill building, but operations grew extensively in the following decades. Much of the Boonton Ironworks' operations focused on the production of sheet iron and different kinds of merchant iron. A charcoal furnace was built in 1833, and in 1848, an iron furnace fueled by anthracite coal was built. This is believed to be the second anthracite-fueled furnace constructed in the state[22] and its construction was supervised by Samuel Thomas, son of David Thomas, a Welsh ironmaster responsible for bringing hot blast manufacture of anthracite iron to America in 1839. In 1848, cut nails were added as a product, with a factory built near the top of the adjacent inclined plane of the Morris Canal.

Boonton Ironworks under Fuller & Lord

Due to a decrease in the market price for nails in 1851, the New Jersey Iron Company was forced to close its ironworks. The property was sold at auction in 1852 to Dudley B. Fuller (1800-1868), a commission merchant for the Iron Company, and John Durand, who were two of the Company's creditors.[23] Fuller formed a partnership with James Couper Lord (1827-1869),[24] utilizing the name of Fuller, Lord, & Company; the operation was commonly known as the Boonton Ironworks and experienced quick prosperity.

Fuller and Lord achieved the operations' peak of production during the 1860s and into the early 1870s (by which time the operation was run by their estates), employing over 500 workers and producing

[20] Deed, David W. Wetmore and wife to New Jersey Iron Company; Deed Book C3, page 258. Morris County Clerk Records Vault.
[21] Lawrence Korinda, *Profile of Boonton: An Architectural and Historical Perspective.* (Pittsburg, PA: Carnegie-Mellon University, An Independent Study, May 6, 1975), 5.
[22] Rabin, 28.
[23] Deed, Abraham Toppen, Sherriff to Dudley B. Fuller and John Durand; Deed book Z4, page 68. Morris County Clerk Records Vault.
[24] In 1852, Dudley Fuller sold a one-third share interest of his Boonton property to James Brown (deed book Z4, page 466), who then in 1856 sold that same share to James Couper Lord (deed book M5, page 34). In 1857, Fuller sold a one-sixth share to Lord making them equal partners (deed book M5, page 54).

200,000 kegs of nails per year.[25] Fuller and Lord also owned portions of the mining operations in Hibernia, Mount Hope, and other areas, including the Beach Glen, the Hope, the Mount Pleasant, and the Swede mines, thereby supplying their own iron to the ironworks. A second anthracite coal-fueled blast furnace was completed around 1868.[26]

The 1868 Beers Atlas of Morris County[27] depicts the ironworks at its peak and in detail with the following buildings labeled: blast furnace, office, nail factory, store house, dumping sheds, annealing house, foundry, weigh house, black smith shop, rolling mill, nail plate mill, coal sheds, keg store house, saw mill, nail factory, drying house, and the home of George W. Esten. Other key features include the Morris Canal and inclined plane; the Boonton Branch of the Morris & Essex Railroad with industrial spur to the ironworks including depot, engine house, turn table, and trestle; multiple foot bridges across the river; and open green space with walking paths on the opposite side of the river.

The Ironworks After Fuller and Lord

Dudley Fuller died in 1868 and James Couper Lord in 1869 at the height of the ironworks' success. The Boonton Ironworks only remained fully operational until 1876 due to several factors including the economic Panic of 1873; a damaging fire at the ironworks in August of 1873;[28] the discovery of iron in the western part of the United States, which dramatically changed the iron industry in New Jersey overall during the late-nineteenth century; and the market's shift from cut nails to wire nails. The iron industry ceased to function at its previous levels ever again, and upon the Boonton Ironworks' closure, the Town fell into an economic depression. After 1876, parts of the ironworks were leased intermittingly but they never resumed full operation. The blast furnaces, nail machines, and many other buildings were dismantled in the 1890s. Various industries continued to occupy the former ironworks site in the early-to-mid-twentieth century utilizing portions of some remaining nineteenth-century buildings as well as constructing several new buildings. The estate of James Couper Lord remained owner of a large portion of the former ironworks property on the north side of the Rockaway River until 1925, when the Jersey Corporation, a group of electrical power companies that had been leasing part of the ironworks since 1912, purchased the property.[29]

In 1929, the estate of James Couper Lord deeded the large park space on the opposite side of the river to the Town of Boonton in honor of Grace Lord Nicoll, daughter of James Couper Lord. The deed

[25] Rabin, 28. (The peak of operations for the Morris Canal was also in the 1860s through the 1880s.)
[26] "The New-Jersey Mineral Region: Iron, Zinc, Copper, Franklinite Lead and Graphite. Effects of War and Peace on Domestic Industry. Boonton, Rockaway, Dover, Franklin, etc. What is Finally Done with the Ore. The March of Improvement," *The New York Times* September 4, 1865
[27] *Atlas of Morris County., New Jersey from actual Surveys by and under the direction of F. W. Beers* (NY: F.W. Beers, A.D. Ellis & G.G. Soule, 1868), page 30.
[28] "Great Fire in Boonton, N.J.," *New York Times* (August 26, 1873). Retrieved through ProQuest Historical Newspapers: The New York Times with Index, *New York Times (1857-1922)*.
[29] "Jersey Utility Buys Old Iron Nail Mill: Boonton Factory, Deserted for Thirty Years, Has Valuable Water Power Rights," *New York Times*, July 20, 1925, page 20. Deed, James Couper Lord Estate Co. to The Jersey Corporation; Deed book P29, page 178. Morris County Clerk Records Vault.

stipulated the property was, "to be used for a public park to be known as 'Grace Park'…"[30] This scenic park space had been a popular destination since the late-nineteenth century, largely in connection with the development of the adjoining residential neighborhood known as The Park. The path along the west/south side of the Rockaway River with views of the Falls was known as Lover's Lane and led to the Arch Bridge, which became a popular scenic location for pedestrians, photographers, and artists. Beginning in the 1870s, the park began to attract summer visitors, and there was discussion in the 1880s of building a hotel near the falls.[31] In the early-twentieth century, the nearby former residence of Dudley Fuller was made into a summer resort called the Puddingstone Inn. During the twentieth century Grace Lord Park featured a bandstand; was the site of concerts, annual Christmas caroling, and various organized events; had an organized life-saving corps for supervised swimming in the river, known as the town beach; and was the starting point for Town parades. Grace Lord Park today remains a popular site for passive recreation with the Arch Bridge serving as a key feature of the walking trails.

Significance Under Criterion C
A resource is significant under Criterion C if it is both important for its expression of architectural or engineering design and construction technology, and if the principal features of its design and construction are sufficiently intact to convey that significance. The Arch Bridge from the Boonton Ironworks is a fine example of a vernacular nineteenth-century stone arch bridge constructed with the primary purpose of carrying a water pipe for fire suppression and the secondary purpose of a pedestrian bridge. It may be a unique resource based on its distinctive historic use. Based on historic maps, there were at least two other footbridges that crossed the Rockaway River to access the Boonton Ironworks but both appear to have been frame construction and solely for pedestrian use.

The 1994 *New Jersey Historic Bridge Survey* found eleven nineteenth-century stone arch bridges survive in Morris County. However, many bridges, including the one in Boonton, are not included in this count as the survey only included bridges with a span of at least twenty feet that are under the National Bridge Inspection Standards jurisdiction of New Jersey and certain railroad bridges. No known comparable study exists for non-road bridges in Morris County or the State. Hunterdon County to the southwest, which is said to have the largest number of stone bridge in the country with over 120, conducted a survey of the smaller stone arch bridges that were excluded from the *New Jersey Historic Bridge Survey,*[32] The survey termed these as "country bridges" as they are smaller in scale and vernacular in nature, but again are all road bridges. The Multiple Property Documentation Form for the Stone Arch Bridges of Somerset County includes nineteenth-century road, canal, and railroad bridges, though only a few dozen are believed to have been constructed in total and even fewer survive today.[33] In Morris County, construction of the Morris Canal included some stone arch culverts and stone and frame bridges and aqueducts, which perhaps are more contextually similar to the Arch Bridge from the Boonton Ironworks than road bridges, but still are quite different and from earlier in the nineteenth

[30] Deed, James Couper Lord Estate Co. to The Mayor and Board of Aldermen of the Town of Boonton; Deed book A32, page 408. Morris County Clerk Records Vault.
[31] Korinda, 46.
[32] Boothby, executive summary.
[33] Brown, section E, pages 7 and 9.

century; few of these survive today. There are no known direct comparisons to the Arch Bridge from the Boonton Ironworks.

The Arch Bridge was constructed in 1866 by Fuller, Lord, & Company to carry a constant and reliable piped water supply across the Rockaway River to the ironworks to help fight fires in the substantial complex. The single-span, arched rubble fieldstone bridge has curved wing walls that sit on the wooded and rocky slopes of the Rockaway River. The bridge was constructed by local mason John Carson, Sr. of local field stone in a mortared bedding at the bridge itself and dry-laid at the wingwalls. The stone work is reflective of nineteenth-century craftsmanship. The coursed rubble bridge with ashlar voussoirs, and the detail given to the iron keystone plate with Fuller and Lord's initials and date of construction indicate the Arch Bridge was meant to be admired and not simply a utilitarian structure.

While less of a distinguishing feature in comparison to the sprawling industrial complex that once made up the ironworks, the bridge was a key functional structure that was crucial to fighting fires at an operation that was inherently dangerous and subject to fires. The bridge also served an aesthetic function both historically and today, contributing to the picturesque nature of the park, particularly as the bridge overlooks the falls to the north. Based on historic maps, the arch bridge appears to have functioned as a pedestrian bridge possibly from initial construction. This functional use continues today, allowing pedestrian passage over the Rockaway River as part of the trails in Grace Lord Park, serving as a link between the modern-day use of the site as a passive recreational park and the historic use of the site as the Boonton Ironworks. The arch bridge maintains its simple aesthetic today through the retention of its original materials and appearance, and based on the historic photographs, is little changed since its original construction with the exception of the chain-link fence and the concrete cap on the walkway. It is significant as an example of local stone masonry combining functional purpose with the picturesque.

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Verbal Boundary Description
The boundary lines extend 10 feet in each direction beyond the arch bridge and its abutments.

Boundary Justification
The boundary was selected to include the full extent of the bridge and its stone wing walls along the banks of the Rockaway River.

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Photo Log

Name of Property: Arch Bridge from the Boonton Ironworks
City or Vicinity: Boonton Town
County: Morris State: New Jersey
Photographer: Beth A. Bjorklund (Photos 1-3)
Mirek Skros (Photos 4-9)
J. Peter Borbas (Photo 10)

Date Photographed: October 24, 2018 (Photos 4 – 8)
December 6, 2018 (Photos 2 and 3)
December 11, 2018 (Photo 9)
January 4, 2019 (Photo 10)
October 28, 2020 (Photo 1)

Description of Photograph(s) and number, include description of view indicating direction of camera:

Photo 0001: View of a trail in Grace Lord Park that leads to the Arch Bridge on the west side of the Rockaway River; camera facing southeast.

Photo 0002: View looking across the top of the bridge; camera facing east.

Photo 0003: View of the path that leads to the bridge on the east side of the Rockaway River; camera facing northwest.

Photo 0004: Overall view looking at the south side of the bridge; camera facing northwest.

Photo 0005: Overall view looking at the north side of the bridge; camera facing south.

Photo 0006: Close-up view of the keystone with date on the south side of the bridge; camera facing north.

Photo 0007: View showing the underside of the bridge; camera facing northeast.

Photo 0008: View of the south side of the bridge showing the transition to the rubble stone wing

wall; camera facing northeast.

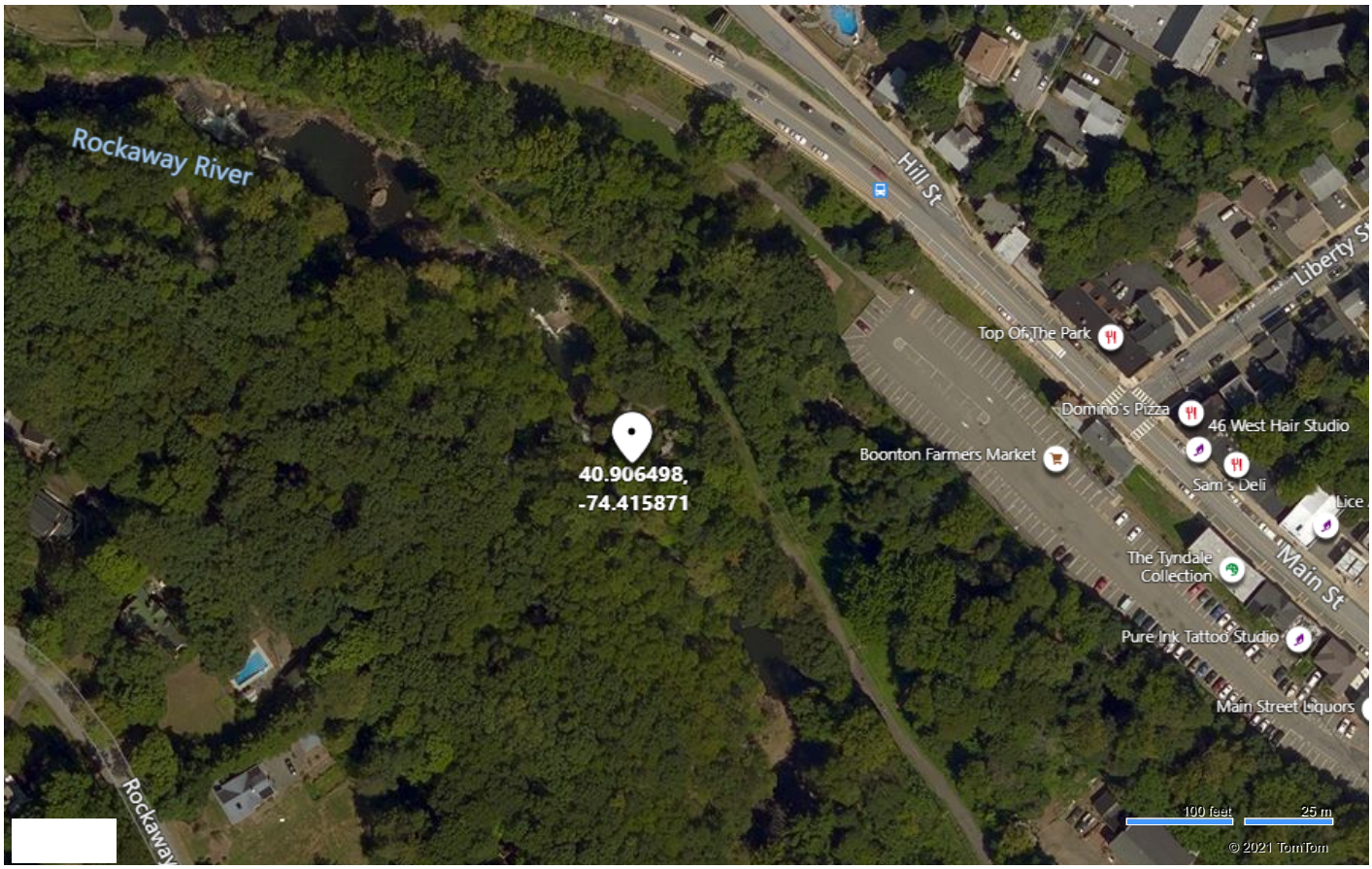
Photo 009: Close-up view of a stone wing wall; camera facing south.

Photo 0010: Aerial view of the bridge; camera facing south.

bing maps

40.906498, -74.415871

Arch Bridge from the Boonton Ironworks
Boonton, Morris County, NJ



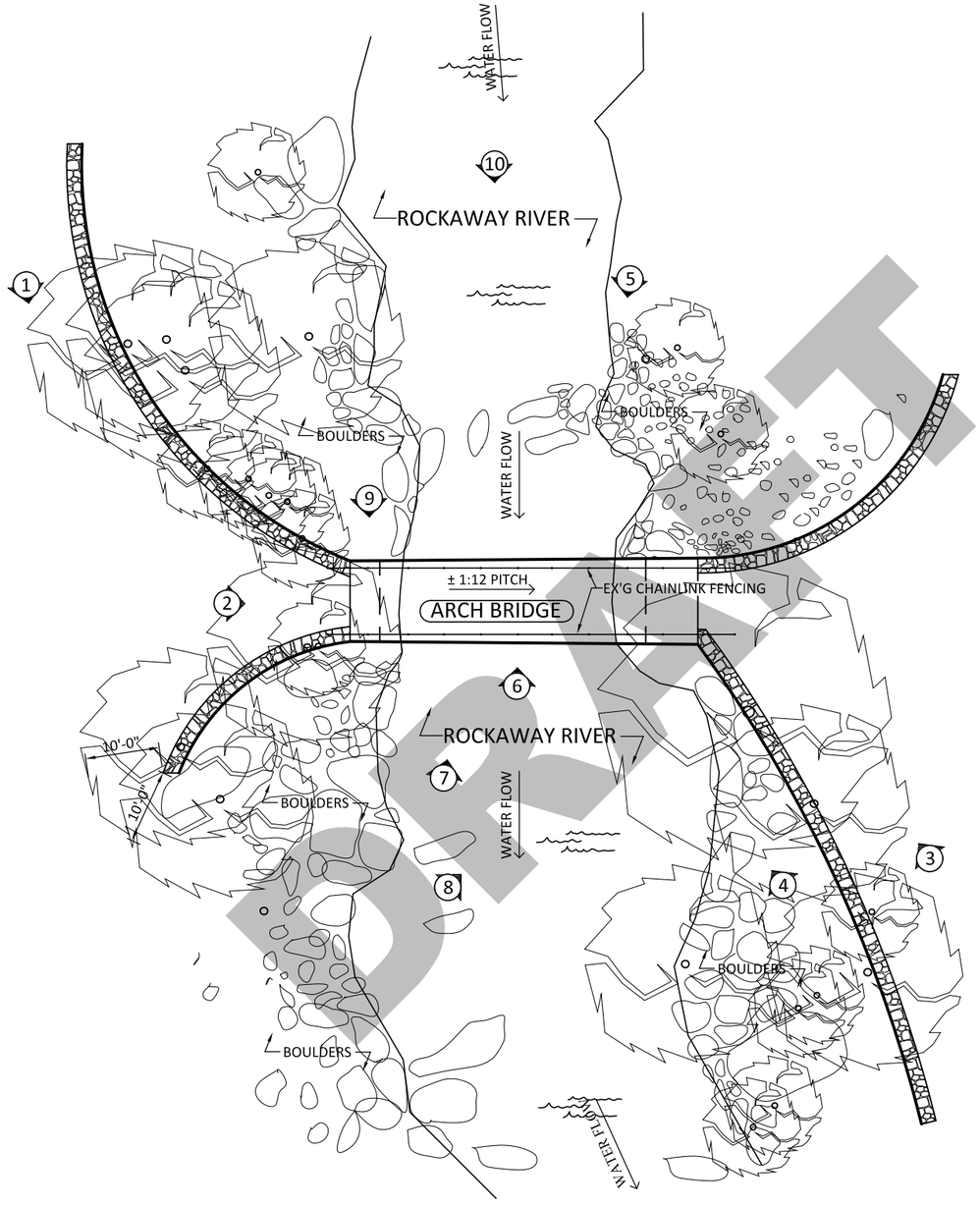


PHOTO KEY

NORTH

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P.O. Box 1726
Cranford, N.J. 07016
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NJ 21AI018244500

PROJECT No. 1911C

DATE: 14 DEC. 2021

NATIONAL REGISTER NOMINATION
ARCH BRIDGE FROM THE
BOONTON IRONWORKS
BOONTON, MORRIS COUNTY, NEW JERSEY

SP

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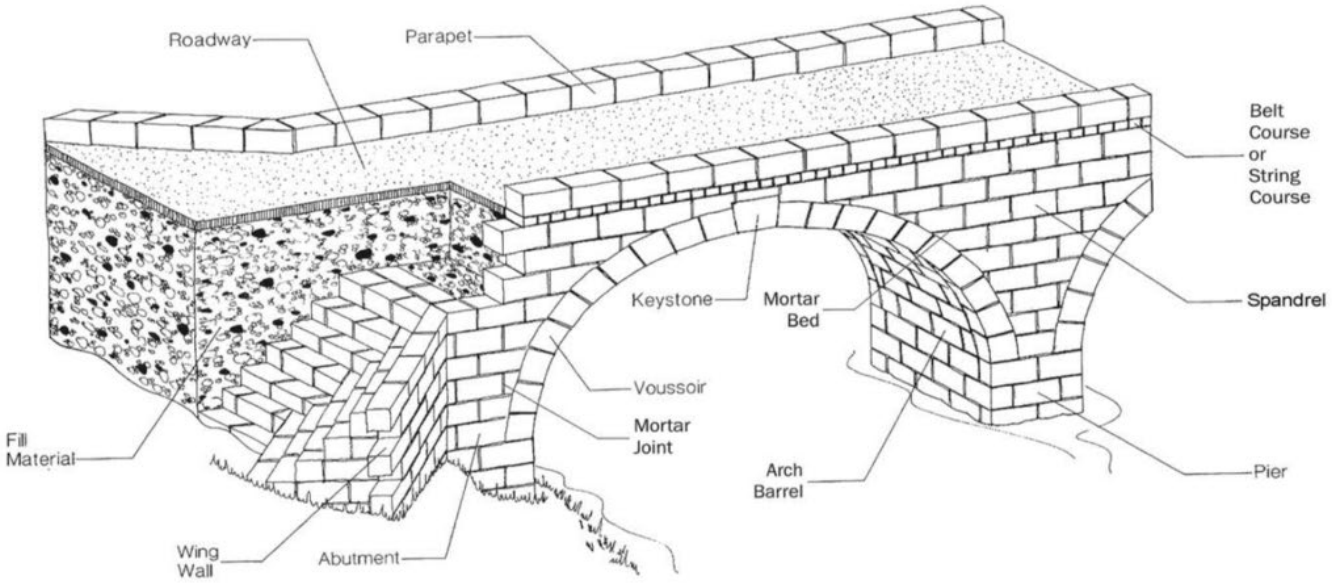

Figure 1. Stone arch bridge diagram.[1]

[1] Historic Bridge Foundation, "Bridge Types," https://historicbridgefoundation.com/bridge-types/.

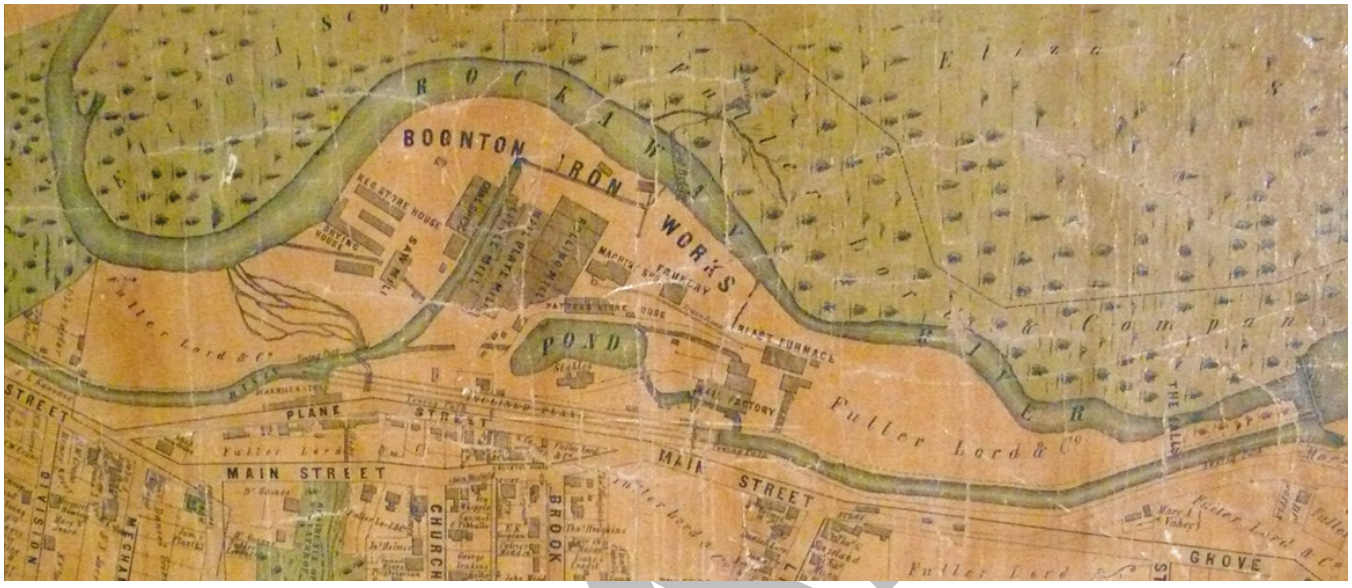

Figure 2. 1857 map of Boonton showing the ironworks after being acquired by Fuller, Lord & Co.[2]

[2] *Map of Boonton Morris Co. NJ surveyed drawn & Published by Thomas Hughes*, 1857. Courtesy of the Boonton Historical Society.

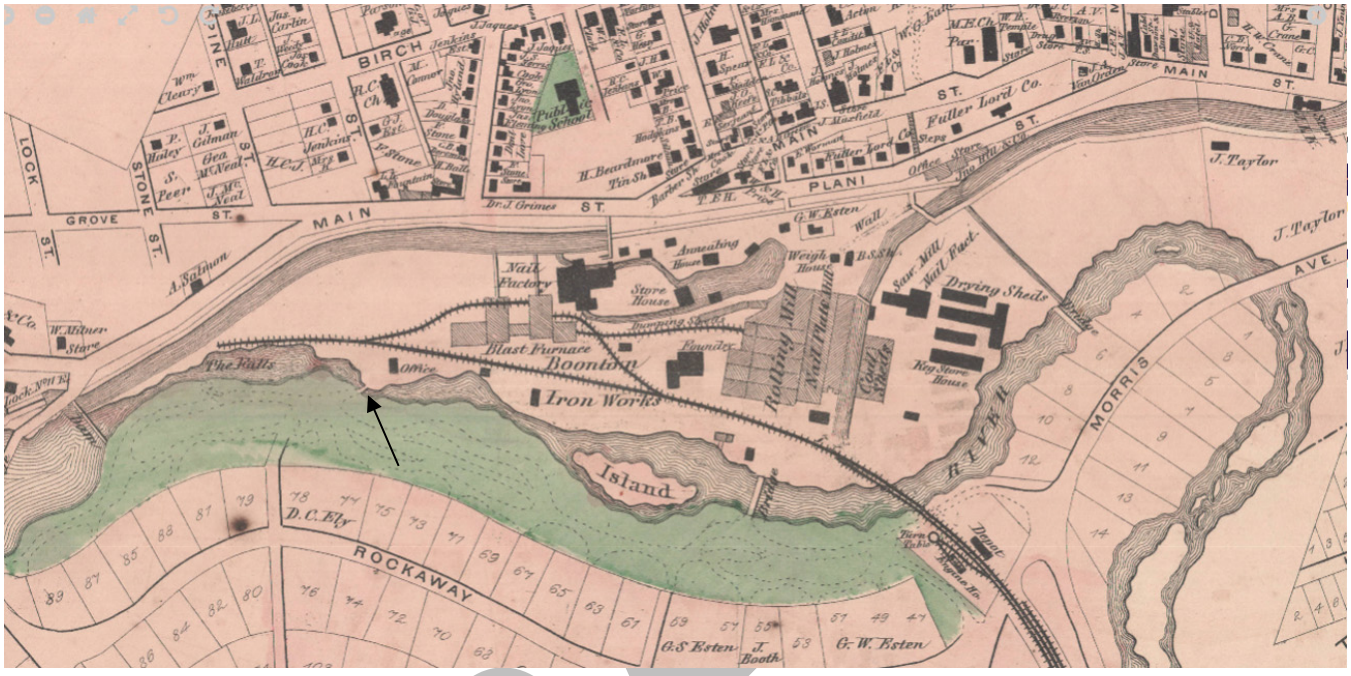

Figure 3. 1868 atlas of Morris County showing the Boonton Ironworks during its peak of operation with the arch bridge noted.[3]

[3] *Atlas of Morris Co., New Jersey from actual Surveys by and under the direction of F.W. Beers* (New York: F.W. Beers, A.D. Ellis & G.G. Soule, 1868), plate 30. Courtesy of the North Jersey History & Genealogy Center, Digital Collections, Morristown & Morris Township Library.

Figure 4. 1887 atlas of Morris County showing the Boonton Ironworks with the arch bridge noted.[4]

[4] *Atlas of Morris County, New Jersey compiled from Official Records, Private Plans & Actual Surveys* (New York: E. Robinson, 1887), plate 16. Courtesy of the North Jersey History & Genealogy Center, Digital Collections, Morristown & Morris Township Library.

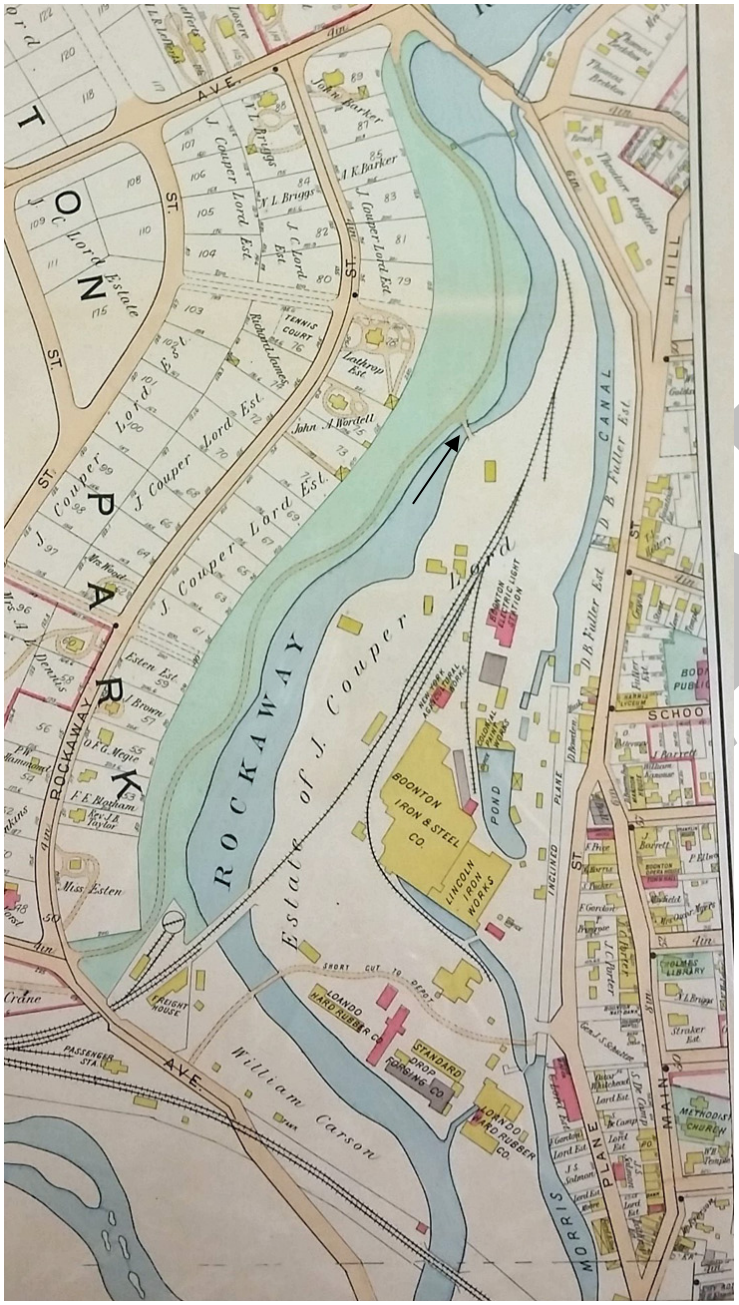

Figure 5. 1900 Robinson Map of Boonton showing the Boonton Ironworks with the arch bridge noted.[5]

[5] E. Robinson, "Map of Boonton, Morris Co. NJ," (New York: E. Robinson & Co., 1900). Available on file at the North Jersey History & Genealogy Center at the Morristown & Morris Township Library.

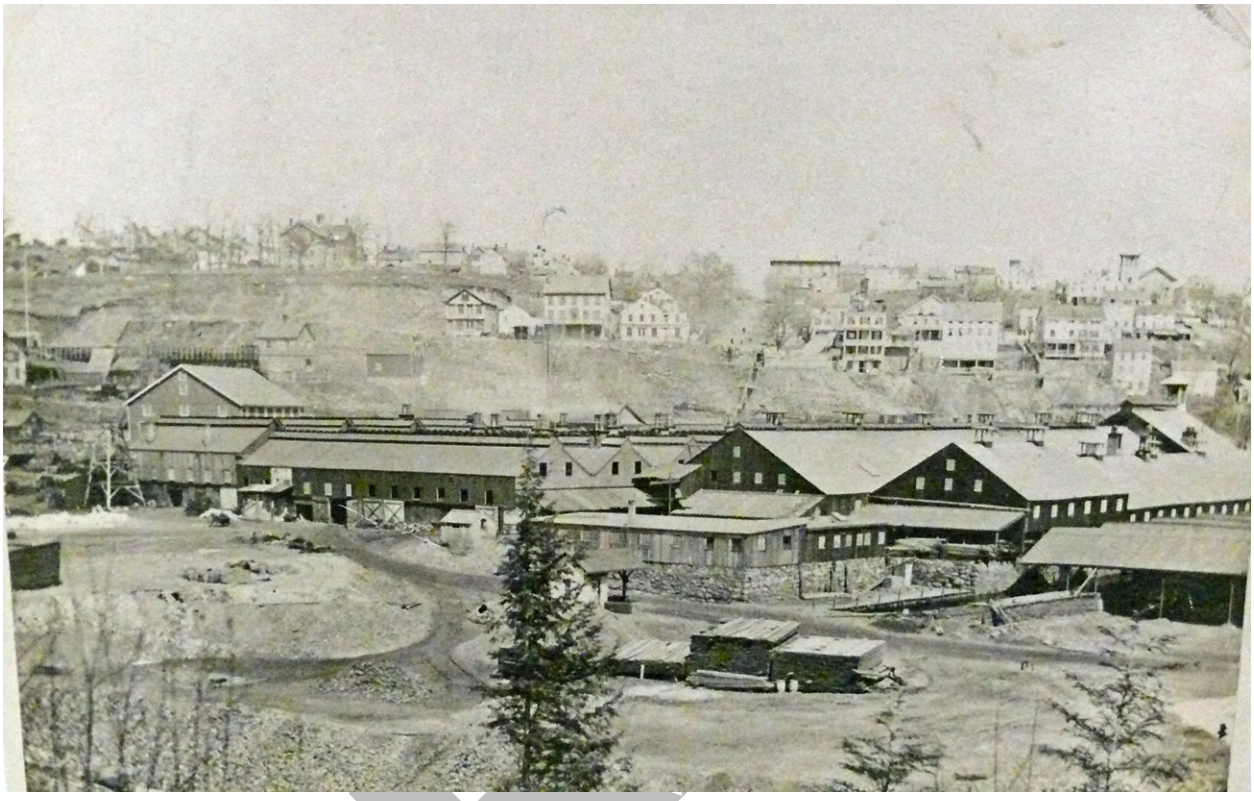

Figure 6. 1870 view of a portion of the Boonton Ironworks with Plane and Main Streets visible behind them.[6]

[6] Courtesy of the Boonton Historical Society.

Figure 7. C.1890s view of the arch bridge that was built to carry a constant piped water source to the Boonton Ironworks for fire protection.[7]

[7] Detroit Publishing Co., "Old Stone Bridge, Boonton, NJ," 1890-1901. Library of Congress, Prints & Photographs Division, Detroit Publishing Company Collection.

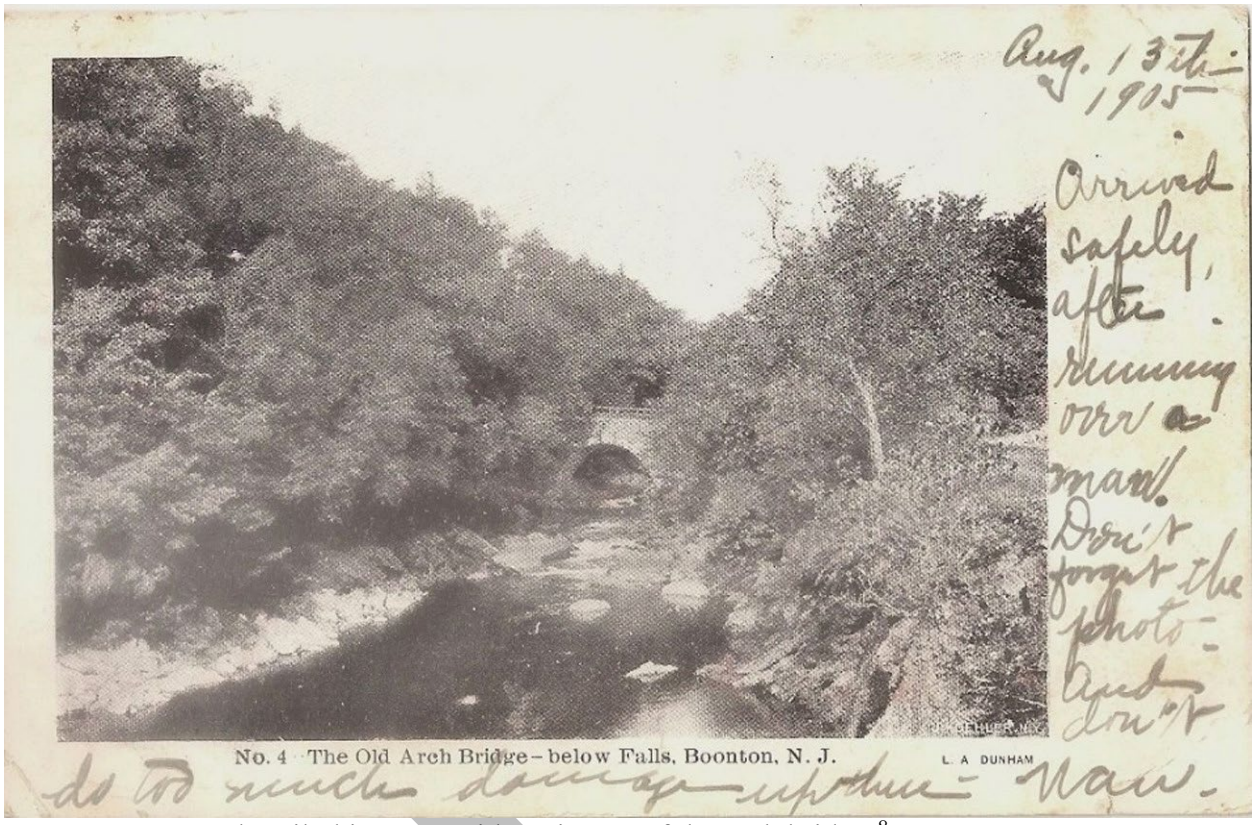

Figure 8. Postcard mailed in 1905 with an image of the arch bridge.[8]

[8] Postcard photo by J. Koehler. Postcard for sale on Ebay.com. Image may be subject to copyright.

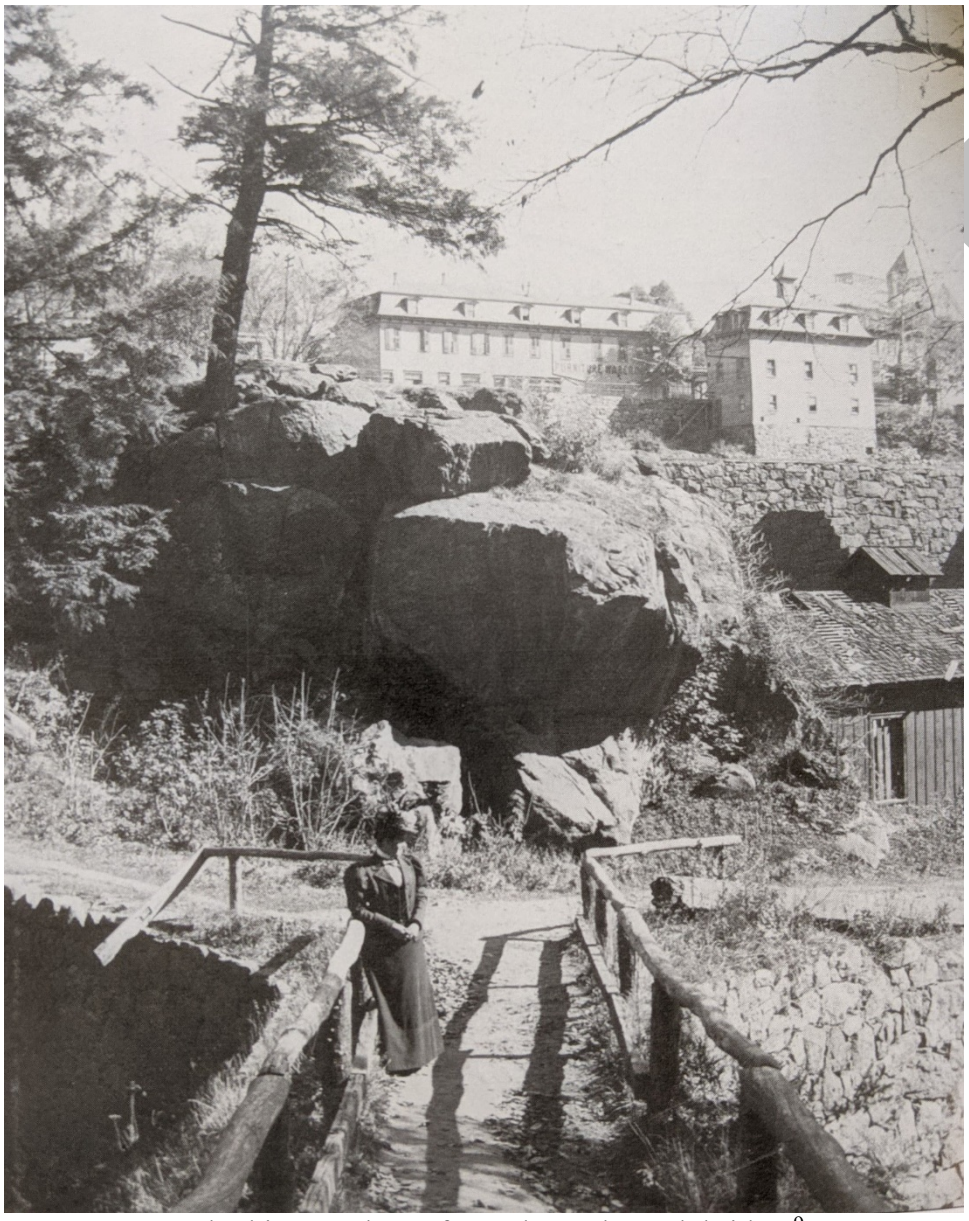

Figure 9. 1908 looking northeast from above the arch bridge.[9]

[9] Boonton Historical Society, *Images of America: Boonton* (Charleston, SC: Arcadia Publishing, 2017), frontispiece.

Figure 10. Early-20th-century view of the arch bridge with someone posing on the top.[10]

[10] Boonton Historical Society, *Images of America: Boonton* (Charleston, SC: Arcadia Publishing, 2017), 120.

Figure 11. Postcard mailed in 1908 with an image of the arch bridge.[11]

[11] Postcard published by American News Co. Image available at http://bridgesnyc.com/postcards/items/show/23. May be subject to copyright..

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Photo 0005: Overall view looking at the north side of the bridge; camera facing south.

Photo 0006: Close-up view of the keystone with date on the south side of the bridge; camera facing north.

Photo 0007: View showing the underside of the bridge; camera facing northeast.

Photo 0008: View of the south side of the bridge showing the transition to the rubble stone wing wall; camera facing northeast.

Figure 9. Close-up view of a stone wing wall; camera facing south.

Figure 10. Aerial view of the bridge; camera facing south.