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Nat. Register of Historic Places
National Park Service

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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 Raven Rock Road Bridge

other names/site number Rosemont-Raven Rock Road Bridge over Lockatong Creek

2. Location

street & number Rosemont-Raven Rock Road ☐ not for publication

city or town Township of Delaware ☐ vicinity

state New Jersey code NJ county Hunterdon code 019 zip code 08822

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby 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 at the following level(s) of significance:

___ national ___ statewide _X_ local

Asst Commissioner 7/27/16
Signature of certifying official/Title Date

State or Federal agency/bureau or Tribal Government

In my opinion, the property ___ meets ___ does not meet the National Register criteria.

Signature of commenting official Date

Title State or Federal agency/bureau or Tribal Government

4. National Park Service Certification

I hereby certify that this property is:

✓ entered in the National Register
___ determined eligible for the National Register
___ determined not eligible for the National Register
___ removed from the National Register
___ other (explain:) _____

10/4/16
Signature of the Keeper Date of Action

Raven Rock Road Bridge
Name of Property

Hunterdon County, NJ
County and State

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		**Total**

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

Historic Bridges of Delaware Township, Hunterdon County, New Jersey

Number of contributing resources previously listed in the National Register

0

6. Function or Use

Historic Functions
(Enter categories from instructions.)

Transportation/road related

Current Functions
(Enter categories from instructions.)

Transportation/road related

7. Description

Architectural Classification
(Enter categories from instructions.)

Other: Pratt through truss

Materials
(Enter categories from instructions.)

foundation: stone

walls: (abutments) stone

roof:

other: (superstructure) cast and wrought iron
(Phoenix columns)

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

The Raven Rock Road Bridge is a cast and wrought iron, single span, Pratt through-truss bridge, built in 1878, using the distinctive and patented Phoenix Iron Company round riveted columns (Photos 1 and 2) The bridge spans Lockatong Creek (Photos 3, 4 and 5) approximately one-half mile north of its confluence with the Delaware River. The main channel of Lockatong Creek passes beneath the west half of the bridge and the eastern half of the bridge spans the gently sloping east bank and flood plain of the creek. (Photo 10) Raven Rock Road (also known as Rosemont-Raven Rock Road), traverses a hilly wooded area of southwest Delaware Township, Hunterdon County (Photos 6 and 7) and connects the hamlet of Rosemont and County Route 519, to the east, with Federal Twist and Quarry roads, to the west, which terminate respectively at Route 29 and the village of Raven Rock. Coursed ashlar stone abutments, with flared wing walls, carry the bridge approximately 16 feet above the creek. (Photos 8, 9 and 10) Approaching the bridge from the east, Raven Rock Road rises to meet the bridge (Photo 11) and, after crossing Lockatong Creek, rises again only slightly before meeting Federal Twist Road which descends into the Delaware River valley.

Narrative Description

The Raven Rock Road Bridge is 129 feet long and the Pratt trusses are spaced 17’ apart, center to center, with the upper lateral braces 16‘ above the roadway. Each truss consists of 7 panels, with a panel with inclined end posts at each end, for a total of 9 panels. (Figures 1 and 2) Large stones form the coursed ashlar masonry abutments and flared wing walls. Rubble stone walls retain the roadway as it rises slightly to meet the eastern end of the bridge. (Photos 12 and 13)

The Phoenix column was formed from concave shaped lengths of wrought iron riveted together at the flange on the sides of each segment. (Figure 3) Phoenix columns form the inclined (portal) end posts, top chord members, and intermediate posts. These components are joined at panel points by cast iron fittings. Eyebars form the bottom truss chord and primary diagonals. These eyebars have a distinctive, nearly square, cross section (Photos 14 and 18) rather than the rectangular cross section of eyebars common from this period of bridge building. The top chord is laterally braced by a combination of transverse I-section members and rods arranged in an X pattern. (Photo 9) Elaborate ball and spire finials top the upper chord connections to the lateral braces and decorative cast-iron filigree is used as bracing at the upper corners of the inclined end post portals. (Photo 15) At the top of each end portal is a plaque (Photo 16) that identifies the bridge committee of the Hunterdon County Freeholders, the Freeholder Director, and the bridge fabricator:

Committee,
J. M. Dilts, H. Laux,
P .B. Goodfellow
J. Calla, B. Blackwell
J.H. Bozer, Director
1878 Lambertville Iron Works Builders 1878

The bridge received frequent maintenance. The maintenance record for the bridge for the period 1940 through 1970 lists frequent painting and a number of minor repairs, none of which removed or replaced original truss components. New plank, deck replacement, and the addition of welded braces between the vertical columns and the upper laterals were the main changes during these decades.

The maintenance record lists the following activities between 1940 and 1970:

New plank 5/1943
Painted bridge 9/1944
New deck 5/1945
Creosoted deck 6/1945
Pointed stone walls 6/1945
Painted bridge 5/1947
Welding 9/1947
Raised deck 9/1954
Painted 9/1954
New deck 1/1958
Red lead paint 7/1959
Box in ends of truss 8/1969
Paint stringers and truss 8/1969

The maintenance record also notes that the floor system was comprised of 12 inch beams with railroad rails used as stringers, 6 rails spaced approximately 3 feet apart carrying the plank deck. The maintenance record does not indicate whether the rails were original or replacement components or when the rails were replaced with more convention I section floorbeams. At some point after 1970, the bridge was strengthened by welding a steel angle to the top of each upper chord member. Between the trusses, 16 foot long timber plank provided a deck with a 14’ 9” cart-way. In 1977 the posted load limit was 10 tons.

In 2014, Hunterdon County completed a comprehensive rehabilitation of the bridge that enhanced its structural integrity and restored a number of original features. The trusses were dismantled and restored in an interior shop. To strengthen the bridge without altering its physical or visual character, the top quarter of the upper chord, which had been altered by the addition of welded angles, was replaced by high strength steel shaped like a Phoenix section with flanges and bolted with round head bolts to the adjoining Phoenix sections in the upper chord. The welded braces added in 1947 were also removed and eight diagonal tension rods were replaced in kind, as were all of the pins used in the truss panel connections. The original 3 foot tall lattice railings were repaired and retained (Photo 4); however, they are separated from the roadway by a recently installed square tubular guide rail mounted on posts affixed to the bridge deck. (Photo 17)

The floor system was replaced using galvanized steel floor beams and stringers configured to replicate the historic configuration (Photos 14, 18, 19 and 20). Both the new and historic structural components of the bridge are painted a pale green. The roadway deck, originally constructed of timber plank, is now a steel deck covered by 3 inches of asphalt pavement. A tubular steel guide rail, affixed to the roadway deck, was placed on each side of the roadway to protect the trusses from vehicular impacts (Photo 17). Both the new guide rail and the historic railing are painted a darker, somewhat olive, green. As illustrated in photographs 4 and 5, this guide rail configuration has a minimal visual impact and does not reduce the width of the roadway.

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.)

- [X] 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 old or achieving significance within the past 50 years.

Areas of Significance

(Enter categories from instructions.)

Engineering

Transportation

Period of Significance

1878-1947

Significant Dates

1878

Significant Person

(Complete only if Criterion B is marked above.)

N/A

Cultural Affiliation

N/A

Architect/Builder

Fabricator: Lambertville Iron Works

Statement of Significance Summary Paragraph (In *one* paragraph, provide a summary that briefly states what the significance of the property/district is, and, for each claim, identifies the level of significance and applicable criteria that apply. The summary paragraph also needs to identify the period of significance.)

The Raven Rock Road Bridge over Lockatong Creek is significant under National Register of Historic Places Criterion A and Criterion C and meets the registration requirements established by the Multiple Property Documentation Form (MPDF) for the Bridges of Delaware Township, Hunterdon County, as a well preserved example of a technologically significant cast and wrought iron bridge. Its technological significance arises from the use of patented Phoenix wrought iron columns. Additionally, the bridge was fabricated by the Lambertville Iron Works, a local company responsible for constructing bridges throughout Hunterdon County during the last quarter of the 19th century. The Raven Rock Road Bridge exemplifies not only the use of the wrought iron Phoenix column, but also the application of this technology to a bridge designed and fabricated by before professional engineers and major bridge building companies began dominating metal truss bridge building.

Period of Significance (Briefly justify the period of significance identified above.)

The period of significance begins with bridge construction in 1878 and ends in 1947 when welded braces, the first visual alteration, (removed in a recent rehabilitation) were added.

Criteria Considerations (Briefly explain how the property meets any Criteria Considerations that apply.)

Developmental history (Explain the construction history or the creation of the property, and its evolution through the period of significance.)

Narrative Statement of Significance (Demonstrate each of the claims for significance made in the summary paragraph.)

Raven Rock Road

During the mid- to late-1800s, Raven Rock (Rosemont-Raven Rock) Road provided a relatively direct path of travel between the commercial villages of Raven Rock, located along the Delaware River, the Delaware and Raritan Canal, and, after 1849, the Belvidere and Delaware Railroad, and Rosemont (where a road to the east to Sergeantsville, Sandbrook, and Flemington, the county seat, began). Petitions for the construction of roads (1808 and 1818) reference roads crossing Lockatong Creek leading to areas at or near Raven Rock and Rosemont. One Petition, 19-10-2 (October 1827) refers to the creation of a two rod wide road across the lands of John Huffman and John Reading crossing "over the Laoglan [early spelling of Lockatong] Creek where the New Arch Bridge is built as marked out by the Freeholders…."[1] The 1851 map of Hunterdon County, prepared by Van Derveer and Cornell, delineates a Raven Rock-Rosemont Road that mirrors that alignment found in the atlas of 1873. The map of Delaware, Stockton and Sergeantsville in the 1873 Beers, Comstock, and Cline Atlas or Hunterdon County, includes two properties belonging to J. H. Reading east of Lockatong Creek along Raven Rock Road. Although the exact location of the referenced stone arch bridge is not known, the Hunterdon

[1] Plunkett, Barbara. "Raven Rock Road Bridge." Draft National Register of Historic Places Nomination. March 2006, Sec. 8, p. 10.

County freeholder minutes of October 16, 1877 authorizing the building of the wrought iron bridge over Lockatong Creek include a reference to a previous bridge at the site washed away by high water.

Cast and Wrought Iron Bridges

Although some of the earliest iron bridges used only cast iron (a brittle material with little tensile strength), the weakness of cast iron in tension was recognized in the early 1800s and the initial compensation was to make the flanges on cast iron tension members broader and wider than the flanges on compression members. Consequently, wrought iron did not initially displace cast iron in bridge building. Although engineers acknowledged that wrought iron was a superior metal in tension and resisted "compression nearly equally with cast iron," the cost of wrought iron, "twice as great" gave cast iron "a decided advantage"[2] until technological innovation reduced the production costs of wrought iron and some prominent cast iron bridge failures prompted a reevaluation of the costs of bridge building.

Thereafter, engineers quickly transitioned to using "cast iron for compression members and wrought iron for tension members," and although wrought iron continued to cost more than cast iron, " it "resisted tension (stretch) so much better that it was worth the expense for certain parts of a bridge." "Iron was the modern wonder - strong, affordable, mass-producible, portable, fire-resistant, and capable of being shaped in the loveliest designs." Historic American Engineering Record bridge historian Eric DeLony has concluded: "The iron truss is the rarest and least recognized American bridge" but is also "the most technologically significant."[3]

In 1862, Samuel Reeves, president of the Phoenix Iron Company, patented the "Phoenix column." In his application for a patent, Reeves described his "Improvement in the Construction of Columns, Shafts, Braces, Etc." as follows:

> I have invented a novel mode of making a shaft or column of wrought iron, which combines the advantages of being useful as a vertical post, horizontal brace, or compression chord in the construction of houses, piers, bridges, and other structures, and at the same time admitting (where several of them are to be used together to form a truss, as in a bridge, pier, or observatory) of a convenient and cheap arrangement for fastening the ties and braces.
>
> I use three or more wrought iron bars…of such shapes and dimensions, that when arranged together in the direction of their length, and fastened by rivets or bolts through their flanges they shall form a hollow shaft or column.[4]

The drawing accompanying his patent application [Figure 2] delineated both a round and a square cross-section, each with four shaped pieces riveted together to form the hollow column. The United States Patent Office granted Reeves Patent No. 35,582 on June 17, 1862.[5]

[2] Whipple, Squire. *An Elementary and Practical Treatise on Bridge Building, An Enlarged and Improved Edition*. New York: Van Nostrand, 1873.
[3] DeLony, Eric. "The Golden Age Of The Iron Bridge." *American Heritage of Invention and Technology.* Summer 1993 Volume 9, Issue 1.
[4] Reeves, Samuel J. "Improvement in the Construction of Columns, Shafts, Braces, Etc." United States Patent Office
[5] Ibid.

Segmental wrought iron Phoenix columns allowed wrought iron to be used in compression and tension and with some additional advantages:

> …although the strength of cast iron in compression is decidedly superior to that of wrought iron, we are exposed to the inconveniences attending the possibility of obtaining unsound castings, or metal which is not homogeneous; besides which, when the fracture of cast iron does take place, it seldom exhibits any premonitory systems of dislocation, whereas the rupture of wrought iron is more gradual. And again, cast iron is far more liable to rupture from the vibration of the girders than wrought iron.[6]

As wrought iron replaced cast iron as the metal of choice for both compression and tension members, cast iron remained the metal of choice for the blocks, caps, and seats that connected wrought iron vertical, horizontal, and diagonal structural members.

This is the combination of cast and wrought iron that is found in the Raven Rock Road Bridge. With this combination, the Lambertville Iron Works, a foundry and machine shop, could build the bridge using the cast iron components manufactured in its foundry the wrought iron columns purchased from the Phoenix Iron Company. Phoenix Iron Company records show that the Lambertville Iron Works was a frequent customer. In 4 separate orders in 1877 and 1878, Lambertville Iron Works purchased a total of 132 Phoenix columns.[7]

In practice, the Phoenix column could be assembled using 4, 5, 6, or 8 rounded sections. [Figure 1] concave sections of wrought iron with a flange on each (longitudinal) were riveted together along the flanges. Phoenix Iron also manufactured the corresponding cast bearing blocks (or feet) and connection pieces. The wrought iron Phoenix column was stronger and more economical than a cast-iron column, and it encouraged the adoption of metal truss bridges by railroads. (Figure 3) Between the 1860s and 1870s, the column was successfully marketed for railroad bridges, but in the 1880s, when the columns could no longer satisfy the strength and stiffness needed for railroads, the technology was successfully redirected for truss road bridges.

The use of segmental columns, such as the Phoenix column, continued into the 1890s until engineers developed and tested design specifications and formulas for compression members fabricated entirely from riveted angles, channel, and I-beam shapes. Between 1869 and 1895, the Phoenix Iron Company, Dean and Westbrook, and railroads across New Jersey erected a combined total of 122 Phoenix column bridges in New Jersey. Construction of Phoenix column bridges for use by railroads was greatest between 1869 and 1884.[8] Thereafter, the Phoenix column bridge was primarily a highway bridge.

The earliest New Jersey highway application of the Phoenix column is the remarkably complete 1878 Raven Rock Road Pratt through-truss span. Fabricated by the nearby Lambertville Iron Works, this bridge features idiosyncratic cast iron connections that were made by the iron works. All other New Jersey bridges with Phoenix columns have Phoenix Iron Company-made connecting pieces and feet (bearings).[9]

[6] Humber, William. A Complete Treatise on Cast and Wrought Iron Bridge Construction. London 1870, p. 107
[7] Harshbarger, Patrick. "Phoenix Bridge Company Bridges in New Jersey." Compiled from the Archives of Company Records at Hagley Museum
[8] Ibid.
[9] New Jersey Department of Transportation, New Jersey Historic Bridge Survey, prepared by A.G.Lichtenstein and Associates, Inc. 1994 Bridge 100D300 (Hunterdon County) Survey Form.

Lambertville Ironworks was founded in 1849 as "Laver and Cowin" and was a partnership between John Laver and his nephew, William Cowin (1825-1874). The company fabricated railroad car wheels, axles, boilers, steam engines, and truss bridge members. The name was changed to Lambertville Iron Works in 1859 after the partnership dissolved shortly before Laver's death.[10] According to New Jersey Historic Highway Bridge survey, "Cowin was the fabricator of the most important 19th century bridges in the region."[11] The Raven Rock Road Bridge (identified by Hunterdon County as D300) was the last bridge built at this foundry, and it is said to be an "excellent representation of the skill of the 19th century iron worker."[12]

Nine bridges with Phoenix columns remain in New Jersey, 4 through-truss, 3 half-through ("pony" or "low truss"), and 1 stringer bridge with Phoenix column piers. A tenth bridge, a pony-truss bridge carrying Doty Road across the Ramapo River in Oakland, Bergen County, was disassembled in 2002 and relocated to Phoenixville, Pennsylvania. Two Hunterdon County bridges are among this group of surviving Phoenix column bridges: the 1885 Hamden Road Bridge over the South Branch of the Raritan River in Franklin Township, and the Lansdowne Road Bridge over the Capoolong Creek also in Franklin Township. The 7 span Calhoun Street Bridge between Trenton, New Jersey and Morrisville, Pennsylvania, although the largest and longest bridge constructed with Phoenix columns, is not the oldest, having been completed in 1885. Of New Jersey's surviving Phoenix column bridges, the Raven Rock Bridge is the oldest and the only one fabricated by the Lambertville Iron Works; all of the other bridges were fabricated by either the Phoenix Iron Company or the associated engineering firm of Dean and Westbrook.[13]

Raven Rock Rosemont Bridge meets the registration requirements established by the Multiple Property Documentation Form (MPDF) for the metal truss bridges of Delaware Township. The bridge was constructed within the period of significance, retains the appearance of and fully functions as a truss bridge, is an exceptionally complete example of its type, and retains its original Phoenix columns, pin connections, and decorative features. The truss members are structural and not merely decorative, the abutments and wing walls are original, and neither the width nor height of the bridge has been altered.

Criterion A Significance

In Delaware Township, truss bridges permitted the crossing of wider streams with no intermediate piers and permitted larger and heavier vehicles to reach more of the county's dispersed agricultural communities. The surviving truss bridges in Delaware Township are the legacy of Hunterdon County's pioneering introduction of metal truss bridge technology beginning with the 1858 construction of the cast iron Fink Suspension Truss Bridge in Hamden Township, followed by the construction of the three (3) Lowthorp Truss bridges in 1868 and 1870. As noted in the National Register of Historic Places nomination for the New Jersey and National Registers of Historic Places listed Peck's Ferry Bridge in Delaware Township, the surviving metal truss bridges are "an embodiment of the development of industrial techniques to solve transportation challenges in rural area, where roads were used by farmers and local craftsmen to transport their goods to market."[14] The surviving metal truss bridges also reveal the transition from local foundries and fabricators, such as the Lambertville Iron Works, to the national bridge building companies as well as tension between those who pursued bridge building

[10] Plunkett, Barbara. "Raven Rock Road Bridge." Draft National Register of Historic Places Nomination. March 2006, Sec. 8, p. 10.
[11] New Jersey Department of Transportation, New Jersey Historic Bridge Survey, prepared by A.G.Lichtenstein and Associates, Inc. 1994 Bridge 100D300 (Hunterdon County) Survey Form.
[12] Ibid.
[13] Harshbarger, Patrick. "Phoenix Bridge Company Bridges in New Jersey." Compiled from the Archives of Company Records at Hagley Museum, Delaware
[14] Goodspeed, Marfy. "Peck's Ferry Bridge," National Register of Historic Places Nomination. March 1999.

through "hands-on experience and apprenticeship" and those who relied upon "academic training using the scientific method and textbook procedures."[15]

Criterion C

The Raven Rock Rosemont Bridge embodies two of the most significant changes in late 19th century bridge building: the advancements of metallurgy from cast to wrought iron and the standardization of structural components and fabrication techniques. Although design and fabrication was standardized, the truss bridge was exceptionally adaptable and versatile, span length, width, and load bearing capacity could easily be adjusted to meet very specific needs and bridge components could be manufactured at the mill and easily fabricated on site. In building the Raven Rock Bridge, the Lambertville Iron Works used standardized, mill manufactured components, Phoenix columns, but fabricated the bridge across Lockatong Creek with customized cast iron components. cast iron components The Raven Rock Road Bridge was built during a period and using materials and methods that display the evolution of metallurgy and standardization.

Additional historic context information (if appropriate)

[15] Ibid.

9. Major Bibliographical References

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

DeLony, Eric. "The Golden Age Of The Iron Bridge." *American Heritage of Invention and Technology*. Summer 1993 Volume 9, Issue 1.

Goodspeed, Marfy. "Peck's Ferry Bridge," National Register of Historic Places Nomination. March 1999.

Hershberger, Patrick. "Phoenix Bridge Company Bridges in New Jersey." Compiled from the Archives of Company Records at Hagley Museum, Wilmington, Delaware

Humber, William. *A Complete Treatise on Cast and Wrought Iron Bridge Construction*. London 1870, p. 107
New Jersey Department of Transportation, New Jersey Historic Bridge Survey, prepared by A.G.Lichtenstein and Associates, Inc. 1994 Bridge 100D300 (Hunterdon County) Survey Form.

Cielo, Carla, Johnathan Kinney, Caroline Charlese Scott. Multiple Property Documentation Form: The Historic Bridges of Delaware Township, Hunterdon County. New Jersey Historic Preservation Office, 2013.

Plunkett, Barbara. "Raven Rock Road Bridge." Draft National Register of Historic Places Nomination. March 2006, Sec. 8, p. 10.

Reeves, Samuel J. "Improvement in the Construction of Columns, Shafts, Braces, Etc." United States Patent Office

Whipple, Squire. *An Elementary and Practical Treatise on Bridge Building, An Enlarged and Improved Edition*. New York: Van Nostrand, 1873.

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 # _____
- ___ recorded by Historic American Landscape Survey # _____

Primary location of additional data:

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

Name of repository: _____

Historic Resources Survey Number (if assigned): _____

10. Geographical Data

Acreage of Property .3 acres
(Do not include previously listed resource acreage.)

UTM References (Place additional UTM references on a continuation sheet. A patch is also available to permit use of latitude and longitude coordinates.)

1	18T	498504	4473959	3			

Raven Rock Road Bridge
Name of Property

Hunterdon County, NJ
County and State

	Zone	Easting	Northing		Zone	Easting	Northing
2				4			

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

The nominated property includes the bridge, bridge abutments and wing walls, and approach roadway within the bounds of the stone retaining walls flanking the bridge approaches.

Boundary Justification (Explain why the chosen boundaries are the most appropriate.)

The boundary encompasses all of the historic elements of the bridge.

11. Form Prepared By

name/title Caroline Charlese Scott

organization New Jersey Historic Preservation Office date May 12, 2015

street & number 501 East State Street telephone 609-984-0176

city or town Trenton state NJ zip code 08625

e-mail

Additional Documentation

Submit the following items with the completed form:

- **Continuation Sheets** (in ascending numerical order, by section and page number)
- **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.
- **Additional items:** (Check with the SHPO or FPO for additional items, especially for "Photographs" below.)

Photographs:

Submit clear and descriptive photographs. Each digital image must include an array of 3000x2000 pixels or greater. For the submission of hard-copy photographs, consult your SHPO or FPO. Key all photographs to the sketch map.

Name of Property: Raven Rock Road Bridge
City or Vicinity: Delaware Township
County: Hunterdon State: New Jersey
Photographer: Wm. Roger Clark
Date Photographed: April 28, 2015
Description of Photograph(s) and number:

1 of 20	Raven Rock Road Bridge original Phoenix Column with imprint of Phoenix Iron Co.
2 of 20	Raven Rock Road Bridge original Phoenix Column incline end post
3 of 20	Raven Rock Road Bridge looking west
4 of 20	Raven Rock Road Bridge with rehabilitated rails and new guide rail, looking west
5 of 20	Raven Rock Road Bridge looking east
6 of 20	Raven Rock Road Bridge with recently install guide rails, looking east
7 of 20	Lockatong Creek beneath Raven Rock Road Bridge, looking southeast
8 of 20	West abutment wing wall
9 of 20	Raven Rock Road Bridge showing
10 of 20	Gradually sloping east bank and flood plain of Lockatong Creek
11 of 20	East approach to Raven Rock Road Bridge, looking west
12 of 20	Stone retaining walls for east roadway approach to Raven Rock Road Bridge
13 of 20	Detail of stone retaining walls for east roadway approach to Raven Rock Road Bridge
14 of 40	Floor beam, lower chord connection, eyebars, and corrugated roadway deck
15 of 20	Finial and filigree brace at upper chord of inclined end post
16 of 20	Raven Rock Road Bridge Committee and Builder plate at top of portal entrance
17 of 20	New tubular guard rail protecting bridge trusses and original railing
18 of 20	Lower chord connections
19 of 20	Reconstructed floor system, floor beam, stringers, lower chord connection, and steel plate deck
20 of 20.	Reconstructed floor system, stringers, steel plate deck, diagonal tie rods, and bearings, west abutment

Raven Rock Road Bridge
Name of Property

Hunterdon County, NJ
County and State

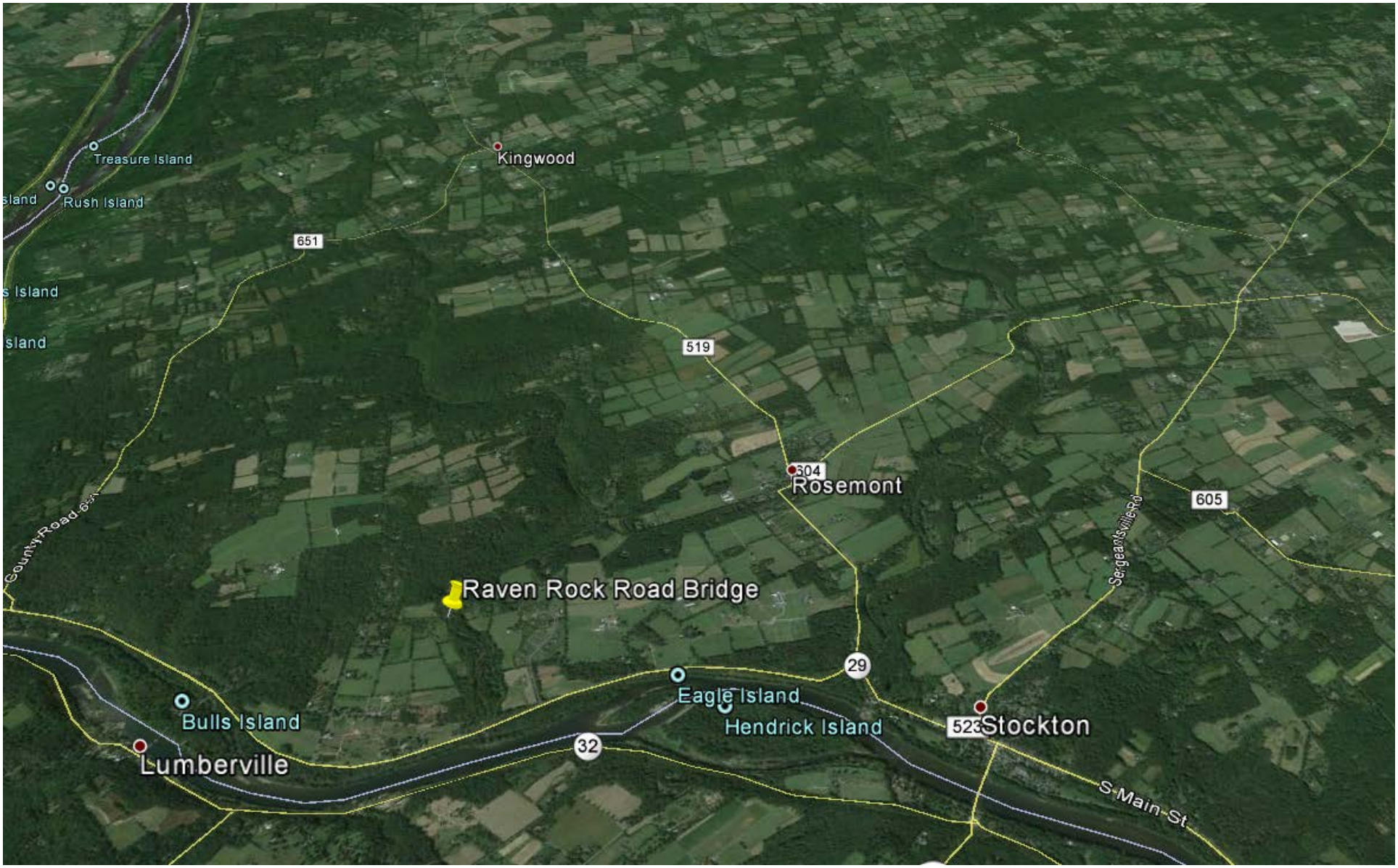
Property Owner:

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

name County of Hunterdon, Division of Roads, Bridges, and Engineering

street & number Rt. 12 County Complex, Building #1, PO Box 2900 telephone 908-788-1227

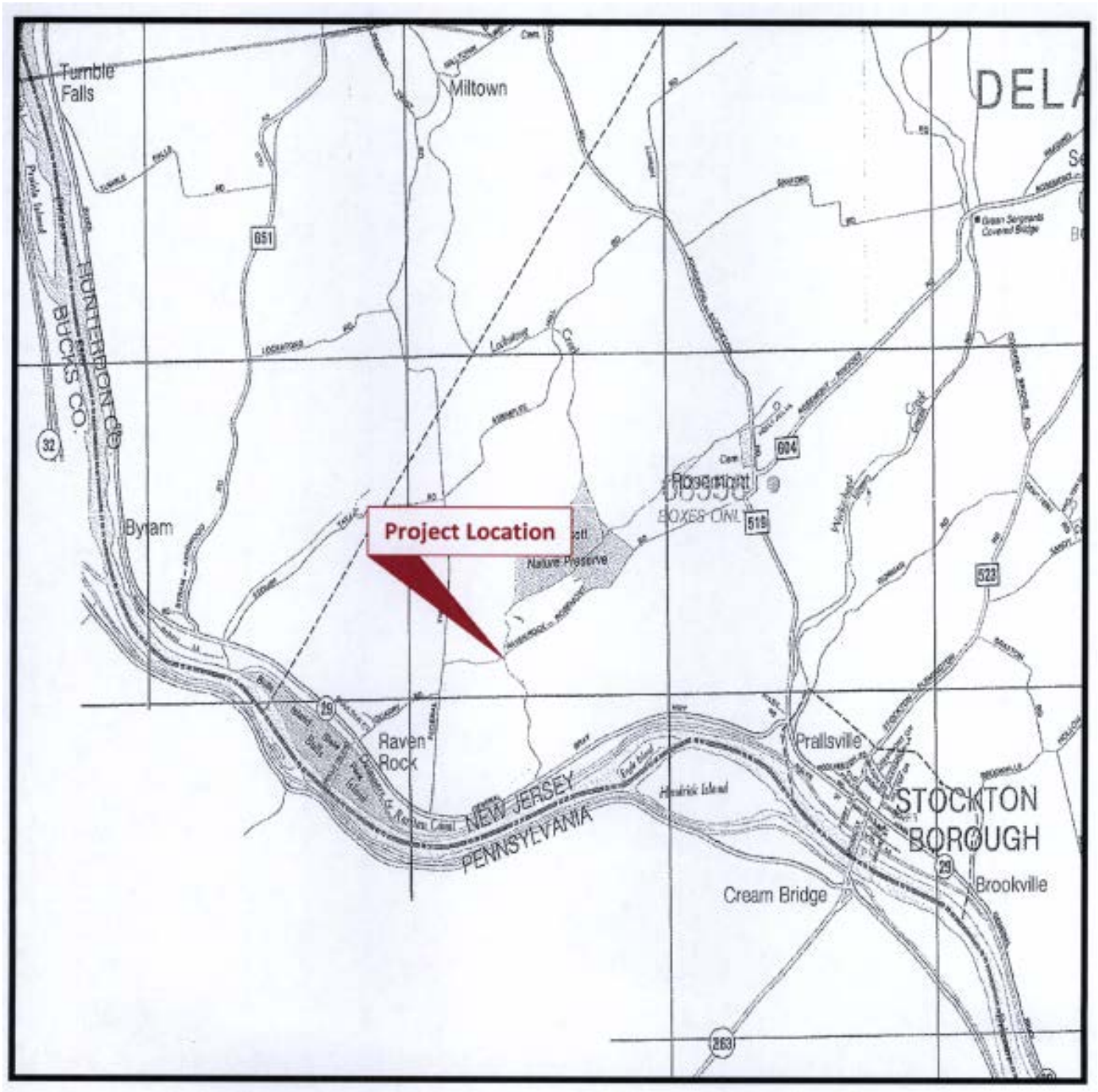
city or town Flemington state NJ zip code 08822



Raven Rock Road Bridge – Location Map

Lockatong Creek, Delaware Township, Hunterdon County, New Jersey

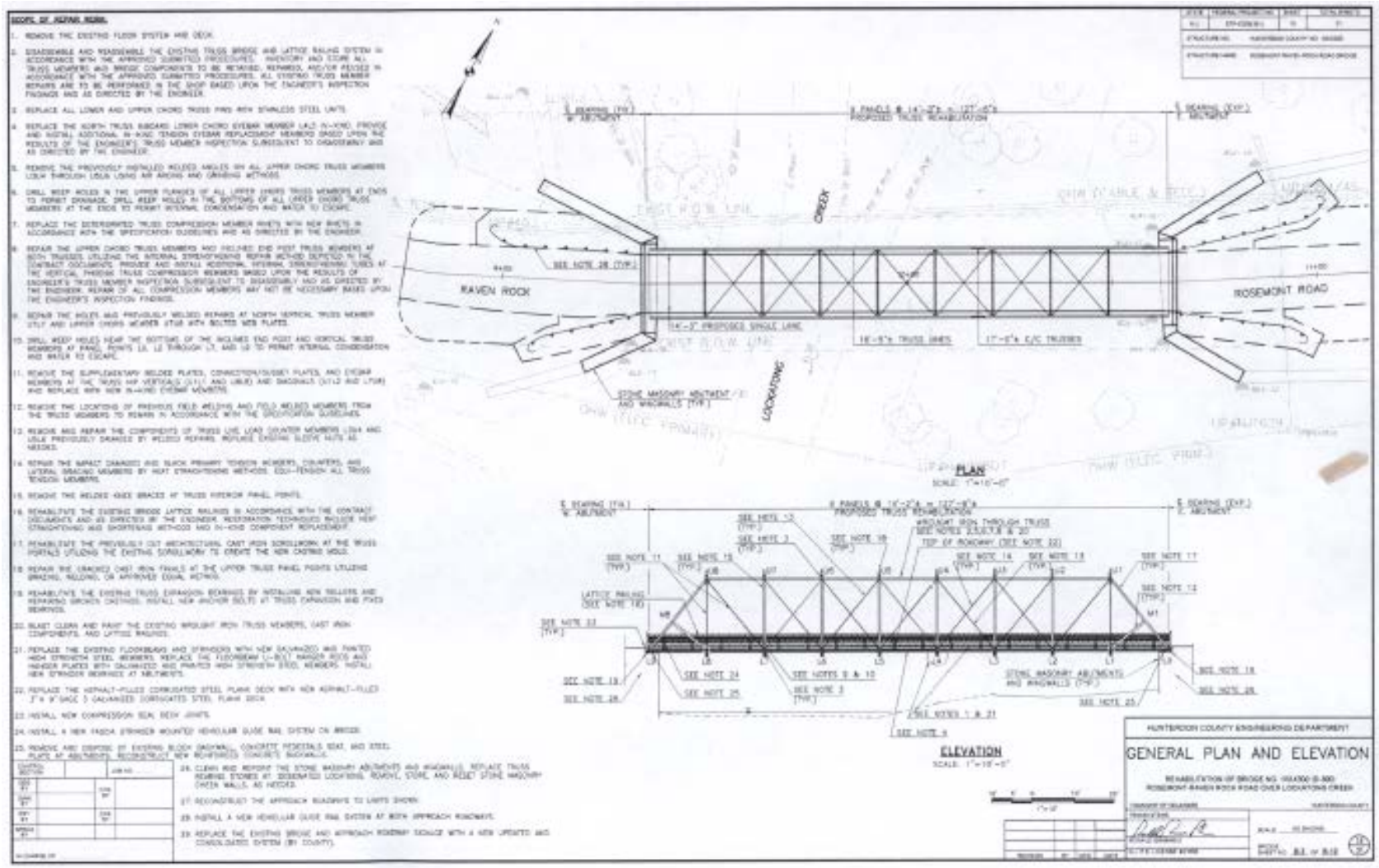
N



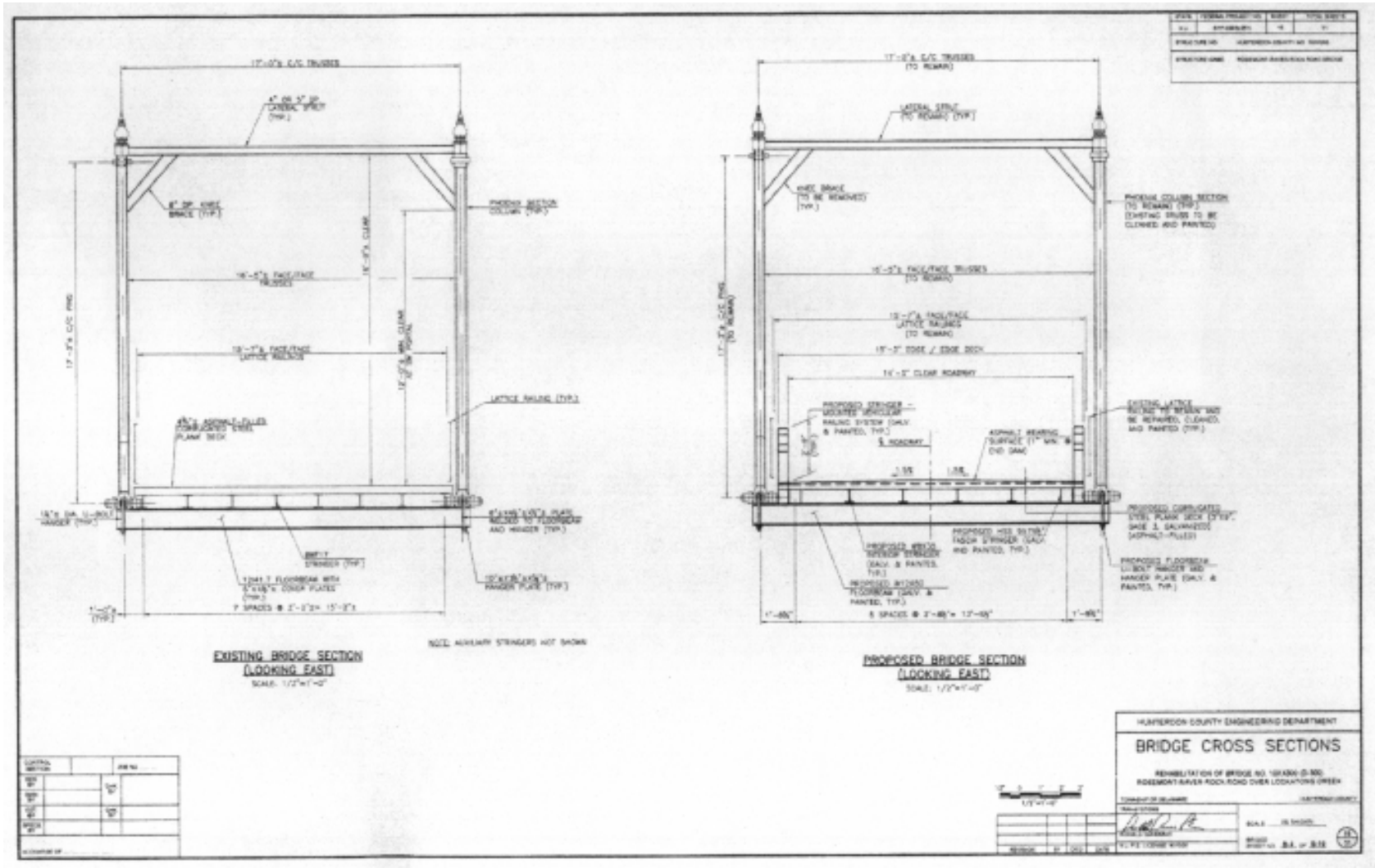
Raven Rock Road Bridge over the Lockatong Creek

Delaware Township, Hunterdon County, NJ

Waterways Site Map



Raven Rock Road Bridge over the Lockatong Creek
Delaware Township, Hunterdon County, NJ
Bridge Plan



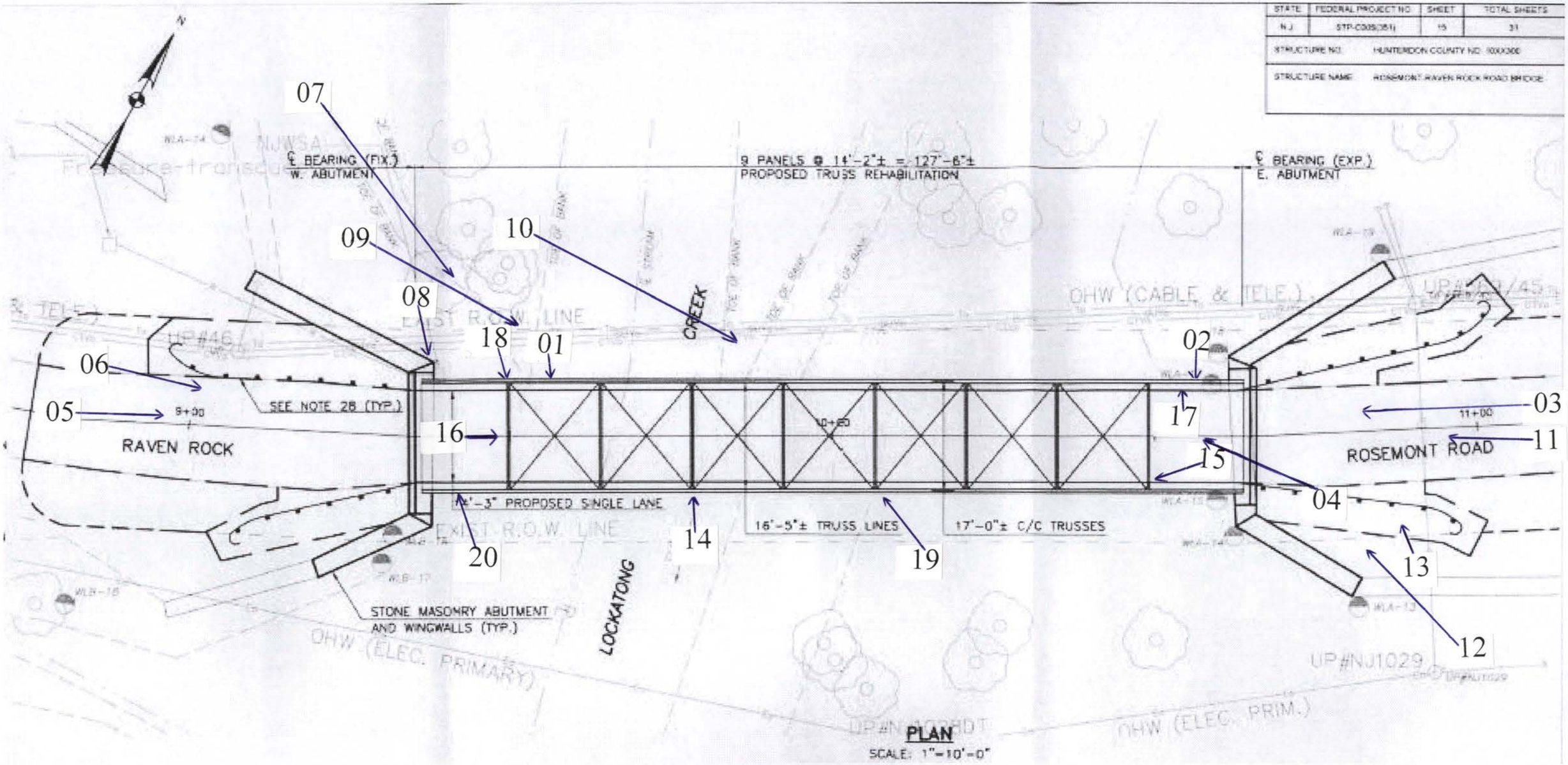
Bridge Cross Section

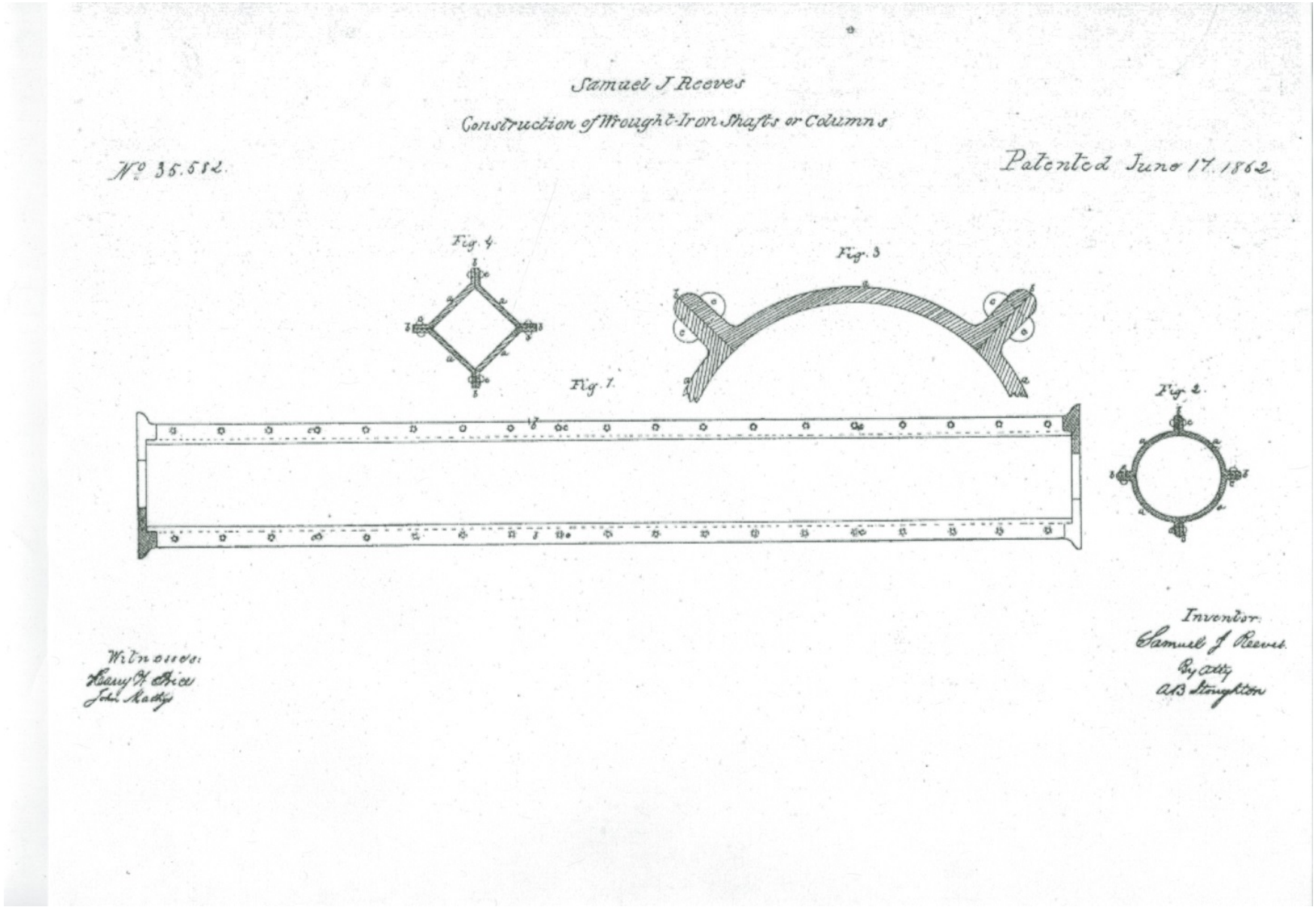
Raven Rock Road Bridge over Lockatong Creek
Delaware Township, Hunterdon County, NJ

RAVEN ROCK ROAD BRIDGE

DELAWARE TOWNSHIP, HUNTERDON COUNTY, NEW JERSEY

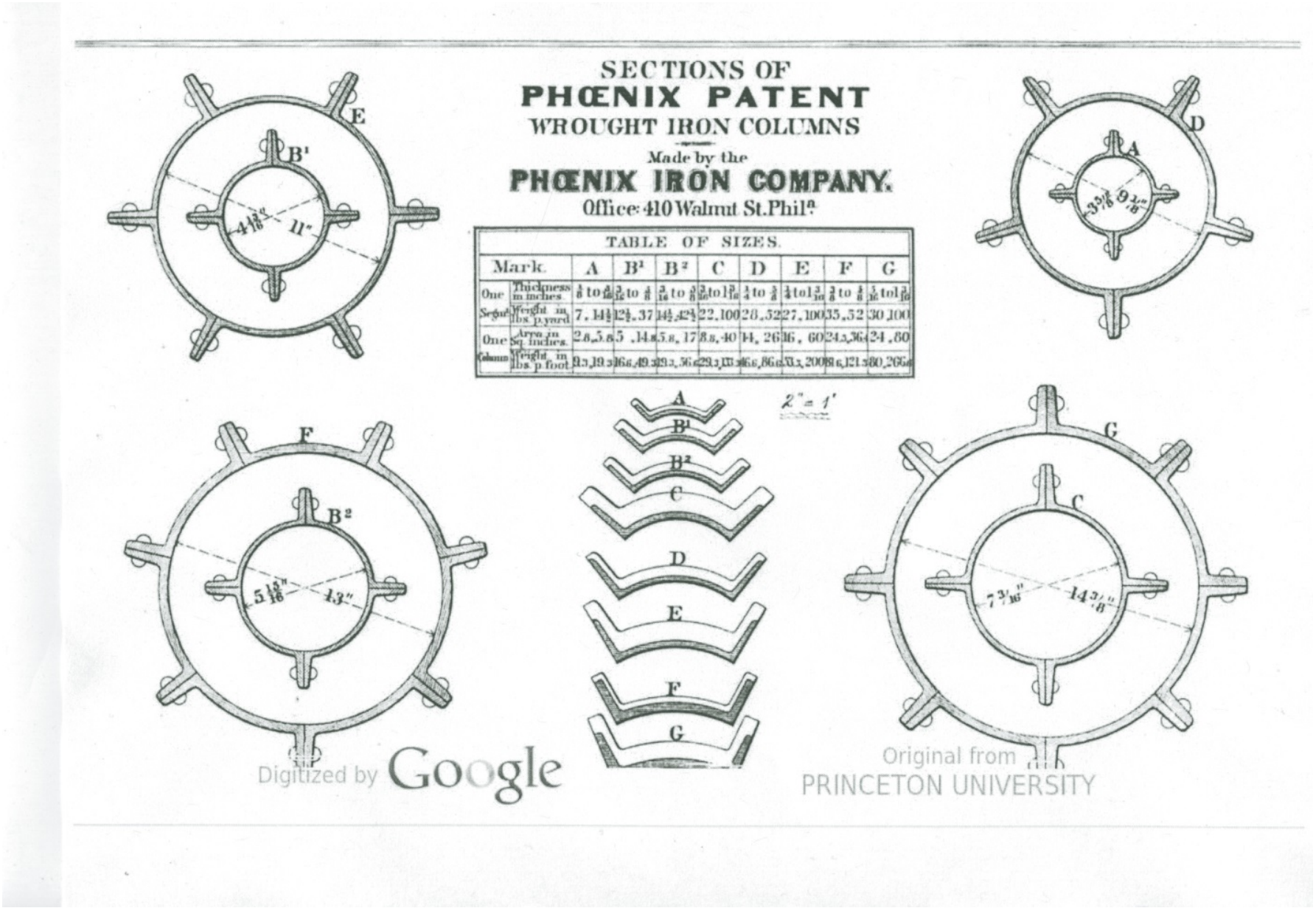
SITE PLAN PHOTOGRAPH KEY





Raven Rock Road Bridge, Delaware Township, Hunterdon County, NJ

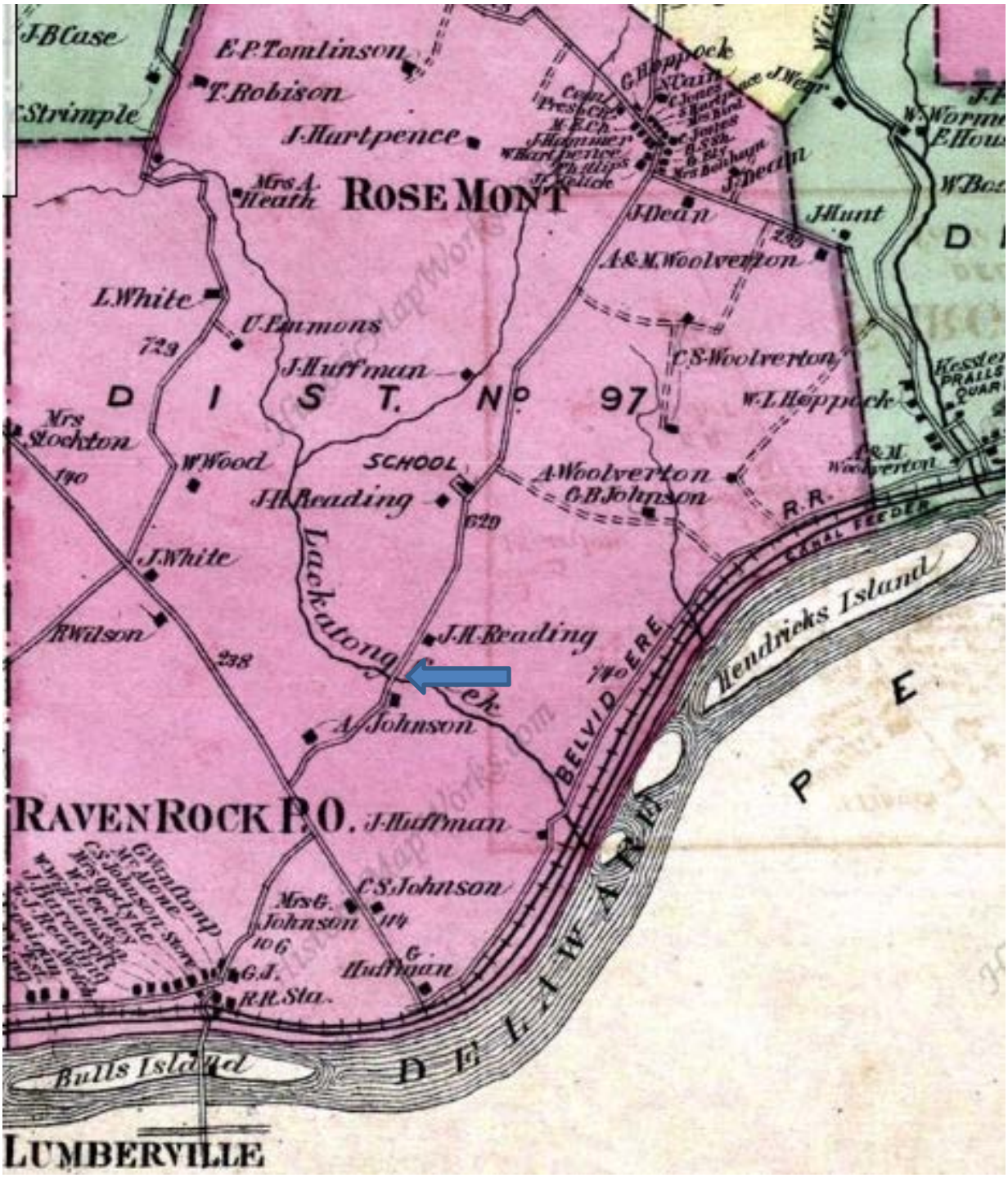
Phoenix Patent Drawing



Raven Rock Road Bridge, Delaware Township, Hunterdon County, NJ

Phoenix Column Section

Schuylkill River Bridge
Phoenix Railroad Bridge
for the
Raven Rock Road Bridge Nomination
Delaware Township, Hunterdon County, NJ



Raven Rock Road Bridge over the Lockatong (Lackatong) Creek

Delaware Township, Hunterdon County, NJ

1873 Map

PHOENIX IRON CO

PHILADA PA


PHOENIX IRON CO
PHILADA. PA


ROSEMONT-RAVEN ROCK BRIDGE
BUILT IN 1878 OF CAST & WROUGHT
IRON BY LAMBERTVILLE IRON WORKS.
ONE OF THE EARLIEST IRON PRATT
THROUGH TRUSS BRIDGES WITH
PHOENIX COLUMNS IN THE U.S.


PHOENIX IRON CO
PHILADA PA


12'-0"


12'-0"


WEIGHT
LIMIT
5
TONS
12'-0"


12-0


TONS

COMMITTEE,
J.M.DILTS, H.LAUX,
P.B.GOODFELLOW,
J.CALLAN, B.BLACKWELL,
J.H.BOOZER, DIRECTOR,
1878 LAMBERTVILLE IRON WORKS 1878
BUILDERS.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY NAME: Raven Rock Road Bridge

MULTIPLE NAME: Bridges of Delaware Township, Hunterdon County, New Jersey MPS

STATE & COUNTY: NEW JERSEY, Hunterdon

DATE RECEIVED: 8/19/16 DATE OF PENDING LIST: 9/19/16
DATE OF 16TH DAY: 10/04/16 DATE OF 45TH DAY: 10/04/16
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 16000691

REASONS FOR REVIEW:

APPEAL:	N	DATA PROBLEM:	N	LANDSCAPE:	N	LESS THAN 50 YEARS:	N
OTHER:	Y	PDIL:	N	PERIOD:	N	PROGRAM UNAPPROVED:	N
REQUEST:	N	SAMPLE:	N	SLR DRAFT:	N	NATIONAL:	N

COMMENT WAIVER: N

✓ ACCEPT ___ RETURN ___ REJECT 10/4/16 DATE

ABSTRACT/SUMMARY COMMENTS:

RECOM./CRITERIA A, C

REVIEWER [signature] DISCIPLINE [signature]

TELEPHONE ___ DATE 11/4/16

DOCUMENTATION see attached comments Y/N see attached SLR Y/N

If a nomination is returned to the nominating authority, the nomination is no longer under consideration by the NPS.

Project # 06-1358
HPO-G2016-215

State of New Jersey
MAIL CODE 501-04B
DEPARTMENT OF ENVIRONMENTAL PROTECTION
NATURAL & HISTORIC RESOURCES
HISTORIC PRESERVATION OFFICE
P.O. Box 420
Trenton, NJ 08625-0420
TEL. (609) 984-0176 FAX (609) 984-0578

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

May 27, 2016

Paul Loether, Chief
National Register of Historic Places
National Park Service
1201 I (Eye) Street, NW
Washington, D.C. 20005

Dear Mr. Loether:

The enclosed disk contains the true and correct copy of the nomination for the Raven Rock Road Bridge, Township of Delaware, Hunterdon County, New Jersey, and meets the registration requirements described under the Multiple Property Documentation for the Historic Bridges of Delaware Township.

This nomination has received unanimous approval from the New Jersey State Review Board for Historic Sites. All procedures were followed in accordance with regulations published in the Federal Register.

Should you want any further information concerning this application, please feel free to contact Katherine J. Marcopul, Acting Administrator, New Jersey Historic Preservation Office, Mail code 501-04B, P.O. Box 420, Trenton, New Jersey 08625-0420, or call her at (609) 984-5816.

Sincerely,

Rich Boornazian
Deputy State Historic
Preservation Officer