

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 Buchanan Road stone-arch bridge over a tributary of Alexauken Creek
other names/site number "Hunterdon County Bridge #D441"

2. Location

street & number Buchanan Road at a tributary of Alexauken Creek
city or town Delaware Township
state New Jersey code 019 County Hunterdon zip code 08559

3. State/Federal Agency Certification

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

Signature of certifying official/Title Deputy SHPO Assistant Commissioner for Community Investment & Economic Revitalization
Date
State or Federal agency and bureau

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

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

4. National Park Service Certification

I hereby certify that this property is:
entered in the National Register.
determined eligible for the National Register.
determined not eligible for the National Register.
removed from the National Register.
other, (explain:)
Signature of the Keeper
Date of Action

Buchanan Road stone-arch bridge over a tributary of Alexauken Creek  
Name of Property

Hunterdon County, New Jersey  
County and State

**5. Classification**

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

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

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

- building(s)
- district
- site
- 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 (vehicular)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

Transportation/road-related (vehicular)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**7. Description**

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

\_\_\_\_\_  
Other: Stone arch bridge  
\_\_\_\_\_

**Materials**  
(Enter categories from instructions)

foundation Ashlar sandstone/poured concrete  
walls Sandstone (abutments parapet and arch barrel)  
Cut sandstone (arch ring)  
roof N/A  
other foreign sandstone (reconstructed wingwall); Asphalt  
(road)

**Narrative Description**

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

Buchanan Road stone-arch bridge over a tributary of Alexauken Creek  
Name of Property

Hunterdon County, New Jersey  
County and State

**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.
- C** Property embodies the distinctive characteristics of a type, period or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D** Property has yielded, or is likely to yield, information important in prehistory or history.

**Criteria considerations**

(mark "x" in all the boxes that apply.)

Property is:

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

**Narrative Statement of Significance**

(Explain the significance of the property on 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 # \_\_\_\_\_

**Areas of Significance**

(Enter categories from instructions)

Engineering  
Transportation  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Period of Significance**

1857  
\_\_\_\_\_  
\_\_\_\_\_

**Significant Dates**

1857 (construction date)  
\_\_\_\_\_  
\_\_\_\_\_

**Significant Person**

(Complete if Criterion B is marked above)

N/A

**Cultural Affiliation**

N/A  
\_\_\_\_\_  
\_\_\_\_\_

**Architect/Builder**

Unknown  
\_\_\_\_\_  
\_\_\_\_\_

**Primary location of additional data**

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

Name of repository: Hunterdon County Division of Engineering

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Name of Property

Hunterdon County, New Jersey  
County and State

## 10. Geographical Data

**Acreage of property** 0.078 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.)

1. Lat 40. 423457 Long -74.934565

(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 Carla Cielo, Historic Preservation Consultant  
organization None date 10/31/23; revised 4/22/24  
street & number 548 County Road 579 telephone 908-310-2505  
city or town Ringoes state New Jersey zip code 08551

### 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 Hunterdon County Department of Public Works  
street & number 314 NJ-12 (Mailing P.O. Box 2900) telephone 908-788-1227  
city or town Flemington state NJ zip code 08822

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

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

Direct questions regarding the proper completion of this form or questions about related matters to the Registration Section, New Jersey Historic Preservation Office, Mail code 501-04B, PO Box 420, Trenton, NJ 08625-0420.

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# National Register of Historic Places Continuation Sheet

Buchanan Road stone-arch bridge  
over a tributary of Alexauken Creek  
Hunterdon County, NJ

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## Description

### Summary

Buchanan Road stone-arch bridge over a tributary of Alexauken Creek is a single-barrel stone-arch bridge located in a rural, agricultural valley in the southwestern end of Delaware Township in Hunterdon County, New Jersey.<sup>1</sup> Constructed in 1857 using native sandstone, it carries Buchanan Road over a small, unnamed tributary of the Alexauken Creek.<sup>2</sup> The arch-barrel has an 8-foot semi-circular span set on raised bearing seats with a skew angle of 85 degrees. Dressed sandstone arch rings set in an inset panel adorn both sides of the bridge. (Photos 3 and 6) The overall bridge length, measured to the ends of each wingwall, is roughly 33-feet on the northeast (upstream) side and 44-feet on the southwest (downstream) side. The bridge is 18'-6" wide, when measured to the outside face of each parapet in the center of the bridge. (Illustration 8a and 8b) Buchanan Road stone-arch bridge is overall in fair condition. Despite some alterations and reconstruction, the bridge retains integrity.

### Location and Roadway

Buchanan Road is just 9/10 of-a-mile long. It remains rural, agriculturally-oriented and sparsely settled. The Delaware Township Dilts Farm Park is adjacent to the bridge on the northeast side. The creek starts a few hundred feet north of the bridge to drain farm-fields. (Illustration 9) It has formed a small ravine at and beyond the bridge. The high-rise semicircular arch-barrel and raised bearing seats, were intentionally utilized in the bridge design to elevate the roadway to a height that was originally over 9-feet above the streambed on the southwest (downstream) side and over 7½-feet above the streambed on the northeast (upstream) side to connect the embankments on each side of the water course.

This single-lane, 18'-6" wide bridge currently serves two-way traffic with a 14'-7" width between guide rails and a roadway width of 10-feet and soft shoulders on each side. (Illustration 8a and 8b) The northwestern approach is roughly 18½-feet wide and the southeastern approach is roughly 20-feet wide (measured to the inside face of each wingwall).

### Narrative Description

For terminology reference, please see the "Stone Arch Bridge Components" diagram located in the "Accompanying Documentation" section of the *Historic Bridges of Delaware Township, Hunterdon County, New Jersey* Multiple Property Documentation Form (MPDF).

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<sup>1</sup> Buchanan Road stone-arch bridge over a tributary of Alexauken Creek will be simply referred to as Buchanan Road stone-arch bridge throughout the nomination.

<sup>2</sup> Although the bridge does not have a datestone, the assumed 1857 construction date is based on the fact that the associated road was charted in September 1857 and the presence of inset panels - a detail that is characteristic of most third quarter 19th century stone-arch bridges that remain today in Delaware Township; Hunterdon County, New Jersey. "20-9-5," Road Records; Record Room of the County Clerk's Office, Flemington Borough.

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### Parapets and wingwalls

The capped wingwalls and parapets are constructed with undressed semi-coursed sandstone with flush pointing. (Photos 3, 7 and 8) The east (upstream) and south and west (downstream) wingwalls appear to remain original and flair at each end to widen the approaches (*see alterations below*). (Illustration 8a and 8b) The top surfaces of the parapet and wingwalls are heavily covered with vegetation. Where visible, the capstones are approximately 4" thick, up to 2'-2" long and match the wall thickness. (Photos 1 and 2) At the highest point, the parapets are 11½-feet above the streambed on the southwest (downstream) side and 10-feet above the streambed on the northeast (upstream) side. A tapering stone buttress is in front of the east (upstream) wingwall. (Photo 4)

### Arch Barrel and arch ring

The 8-foot-wide arch-barrel is a perfect semicircle set on an oblique angle (85-degree skew) to that of the wingwalls. (Photos 3 and 6) It is formed with longitudinally-oriented sandstone blocks that are keyed to the arch ring. The vault rises 4-feet above the spring-line at the bearing seats.<sup>3</sup> The depth of the arch-barrel is 18-feet at the northwest abutment, 17'-6" at the southeast abutment, and 18'-8" at the central keystones. The offset is due to the skew angle.

The original stone bases are 1'-5" high on the northeast (upstream) side and 3' to 3'-4" high on the southwest (downstream) side. The bases serve to raise the vault to a height of 5'-9" above the stream on the northeast (upstream) side and a height of 7'-1" above the stream on the southwest (downstream) side. The bases are built with coursed ashlar sandstone. A concrete coating can be seen on the base of the arch akin to a knee wall. They extend 3 to 4-inches in front of the arch ring to align with the wingwalls and 6-inches in front of the arch-barrel and reduce the hydraulic width of the creek-bed to 7'-5". At some point, trap rock was brought in and fills the streambed through the length of the arch barrel. (Photo 6)

Both arch rings are faced with 23 hand-dressed sandstone voussoirs set with radially aligned mortared joints. Instead of a true singular keystone, two identical voussoirs separated by a mortared joint are at the apex of each arch. On the northeast (upstream) side of the bridge, the two-part "keystones" are 3" wide at the base; 7½" wide at the top, and 1'-5" high. (Photo 5) On the southwest (downstream) side of the bridge, the two-part "keystones" are 4½" wide at the base; 8" wide at the top, and 1'-5½" high. (Photo 9) The side-flanking, wedge-shaped voussoirs are fairly uniform in size and character. The smallest voussoirs are 4" wide at the base to 6" wide at the top and the larger voussoirs are up to 7" wide at the base and 9" wide at the top. There are also one or two non-tapered rectangular face-stones on each side. The height of each voussoir varies from 1'-3" to 1'-5½". The first

<sup>3</sup> For reference, please see "Stone Arch Bridge Components" diagram in the *Historic Bridges of Delaware Township, Hunterdon County, New Jersey* Multiple Property Documentation Form (MPDF).

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voussoirs (springers) are trapezoidal and sit flush on the bearing seats. (Photo 6) The stonework of the spandrels is roughly tapered to meet the outer curvature of the arch ring. (Photo 4)

As mentioned above, the wingwalls are built in the plane of the bases, 3 to 4-inches in front of the arch ring and spandrels. (Photos 6 and 8) This creates vertical seams in the masonry and the side components of the inset panel. The parapets are 3-feet high above the arch crown. They are built in the plane of the wingwalls with a 3-inch cantilever above the arch ring to create the upper horizontal component of the inset panel. (Photo 6) The inset panel is 11-feet wide and roughly 5½-feet high above the bases. On the northeast (upstream) side, the first row of cantilevered stonework is uniformly 3½-inches high. (Photo 3) The 3 to 4-inch cantilever above the inset panels creates the 18'-6" overall bridge width at the parapets. (Illustration 8a and 8b)

## Alterations

The original roadway was dirt and is visible in the early-to-mid 19<sup>th</sup> century photographs. (Illustrations 5-6) It was paved prior to the 1980s. The circa 1930-50 photographs, show the parapets and wingwalls above the roadway and tapered in each direction in a squat triangular configuration to a height that was at or slightly below the roadway. (Illustrations 5-6) The roadway has been surfaced with bituminous concrete pavement with an oil and chip wearing surface and an estimated combined depth of 3-feet over the arch crown. This is substantially higher than the original dirt road.<sup>4</sup> Due to the presence of road fill, the highest portions of the parapets are currently level with the road and the original flared and tapered wingwalls remain a few feet below the roadway. The parapets and wingwalls are therefore no longer visible from the roadway. (Photos 1 and 2; Illustration 7)

The first known guide rails were wooden and are shown lashed together in a circa 1930-50 photograph. (Illustration 6) Poured concrete posts that supported wooden rails were added in 1949. A few of these posts remain on both sides of the bridge between the tops of the parapets and the current metal guardrails. They are spaced 10 feet apart. The current metal guardrails were extant by the 1980s. (Illustration 7) They are mounted in fill above the arch on both sides of the bridge.<sup>5</sup>

The northwest wingwall was reconstructed of non-native sandstone with weep holes prior to 1997.<sup>6</sup> (Photo 3) It extends straight and level with the highest part of the remaining parapet. It has no capstones or a flare at the end. The inside face of the bases has been coated with a 3-inch layer of poured concrete.

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<sup>4</sup> Hunterdon County, New Jersey. "Bridge file D-441," Hunterdon County Engineer's Office, Raritan Township.

<sup>5</sup> Ibid.

<sup>6</sup> Hunterdon County, New Jersey. "Bridge file D-441," Hunterdon County Engineer's Office, Raritan Township. The sandstone used for the reconstruction has variegations in color and is foreign (non-native) sandstone.

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### Condition

This bridge remains in overall fair condition. On the upstream side, the upper portion of the east wingwall is displaced forward. (Photos 3 and 4) On the downstream side, there is a diagonal crack in the south wingwall and the stonework is displaced above the crack. (Photo 8) No adverse conditions were noted in the arch barrel and it remains properly keyed to the arch ring. The poured concrete base coatings are partially deteriorated and missing in places.

### Integrity

Buchanan Road stone-arch bridge retains its integrity of design, materials, and workmanship, and still functions as a vehicular bridge. Substantial original architectural fabric remains to convey the significance of the bridge. The key architectural features - the arch barrel, arch rings, inset panels, two-part keystones and three of the four spandrels - remain original. On the northeast (upstream) side the buttressed east wingwall, the east spandrel, and roughly half of the parapet remains original. The southwest (downstream) side of the bridge appears to be entirely original, but has been repointed with black-tinted mortar. The coursed ashlar stone bases remain original under the poured concrete coating. Both arch rings and the entire arch barrel are original. The greatest loss of original material occurred on the northeast (upstream) side of the bridge, where the north wingwall including the spandrel wall and roughly half of the parapet were reconstructed with non-matching, non-native sandstone and weep holes prior to 1997. (Photo 3, Illustration 8a and 8b) The bridge also retains its integrity of location and setting. It has not been moved, closed to traffic, re-routed, or replaced. Its setting remains rural, agricultural, and recreational, providing the appropriate setting for small-scale, stone-arch bridges.



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### Statement of Significance

#### Summary

Buchanan Road stone-arch bridge over a tributary of Alexauken Creek is significant at the local level under National Register Criteria A and C in the areas of transportation and engineering.<sup>1</sup> The bridge represents a major period of progress in the mid-19th century that was fostered by the introduction of new connector farm roads with permanent stream crossings. Smaller roads like Buchanan improved a previously established road network. The Buchanan Road stone-arch bridge is an excellent example of a type, period, and method of construction. Buchanan Road stone-arch bridge meets the registration requirements set forth in the *Historic Bridges of Delaware Township, Hunterdon County, New Jersey Multiple Property Documentation Form* (MPDF) and is therefore individually eligible to be listed in the New Jersey and National Registers of Historic Places. Additionally, it has enhanced significance because of its skewed construction.<sup>2</sup> The period of significance is 1857, when the road was chartered and the bridge was likely constructed.<sup>3</sup>

#### Buchanan Road and the Vicinity of the Bridge

Buchanan Road was chartered in Sept 1857 between what today is Sandy Ridge Road and Lambertville-Headquarters Road at Dilts Corner. In the charter, these roads are referred to as the “road leading from Head Quarters to Sandy Ridge” and the “road leading from Alexsaukin Creek to Head Quarters”.<sup>4</sup> The road followed the property lines between the lands of Edward and Wilson Hunt, Wilson Bray Rittenhouse, John P. Hunt, William Wilson, Abraham J. Hagaman and Samuel C. Barber. (Illustration 2) The Buchanan Road stone-arch bridge was likely built as part of its construction. It was continued to Sergeantsville in 1866 (with a section now known as Rittenhouse Road) and both sections were called “the road from Sergeantsville to Dilts Corner” prior to their renaming in the third quarter of the 20th century.<sup>5</sup> The introduction of the road reduced travel time for those traveling south to Lambertville from the Sandy Ridge area of Delaware Township and vice versa. Aside from a short-lived grist mill (see below), the area of Buchanan Road was rural and agricultural throughout the 19th and much of the 20th centuries.

Cornell’s 1851 *Map of Hunterdon County* shows “J. P. Hunt’s” grist mill by a mill pond along a creek on the northwest of what would become Buchanan Road, but does not show the road (Illustration 1). Little is known

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<sup>1</sup> Buchanan Road stone-arch bridge over a tributary of Alexauken Creek will be simply referred to as Buchanan Road stone-arch bridge.

<sup>2</sup> Caroline Charlese Scott and Carla Cielo. *Historic Bridges of Delaware Township, Hunterdon County, New Jersey*. National Register of Historic Places Multiple Property Documentation Form. Washington DC: US Department of the Interior, National Park Service, 2016, NRIS# 64501271; Section F, p4-5.

<sup>3</sup> 19th century bridges were almost always built when the road was built.

<sup>4</sup> Hunterdon County, New Jersey. “20-9-5,” Road Records; Record Room of the County Clerk’s Office, Flemington Borough.

<sup>5</sup> Marfy Goodspeed. “The Rittenhouse-Dilts Farm.” GOODSPEED HISTORIES, August 3, 2019. <https://goodspeedhistories.com/the-rittenhouse-dilts-farm/>.

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about Hunt's mill and the venture appears to have been short lived. It is not shown on the 1828 map entitled "*A Map of the State of New Jersey with part of the adjoining States Compiled under the Patronage of the Legislature of said State*" by Thomas Gordon suggesting that the mill was built after 1828.<sup>6</sup> In 1840, Barber & Howe recorded six gristmills, six sawmills, and one oil mill in Delaware Township.<sup>7</sup> "J. P. Hunt" was John P. Hunt (1787-1860) – the son of Samuel Hunt (1755-1825) and Mary Reeder (1752-1839). The 1850 Federal census shows Hunt working as a carpenter, suggesting that the mill was either a side venture or in decline.<sup>8</sup> The mill is not depicted on Lake and Beers' 1860 *Map of the Vicinity of Philadelphia and Trenton*, suggesting that it did not remain operational after Hunt's death. (Illustration 3) Lake and Beers' 1860 *Map of the Vicinity of Philadelphia and Trenton* and Beers' 1873 *Atlas of Hunterdon County* don't show mills in the immediate vicinity; therefore, it appears the bridge was built at the tail end of the period of mill use in the area. (Illustrations 3 and 4)

### Incidental History

In 1844, Wilson Bray Rittenhouse (1813-1879), son of Jonathan Rittenhouse and Delilah Bray (daughter of General Daniel Bray), purchased 63-acres along what would become Buchanan Road.<sup>9</sup> This farm was adjacent to John Hunt's mill property.<sup>10</sup> "W. B. Rittenhouse" is shown as the owner of the farm adjacent to the bridge on both the 1860 *Map of the Vicinity of Philadelphia and Trenton*, (Illustration 3) and the 1873 Beers Map of Delaware Township (Illustration 4). After the death of William Bray Rittenhouse in 1879, the farm past to his son Judson Rittenhouse, who married Martha D. Bodine.<sup>11</sup> This property remains today as Dilts Farm Park, and the Buchanan Road stone-arch bridge is adjacent to the southwestern corner of the park.

The namesake of Buchanan Road - Bertram Reading Buchanan (1886-?) - was a farm hand and a sixth-generation descendant from one of the earliest families to settle in Old Amwell Township. The 1910 census shows Bertram Buchanan (age 23) working as a hired man on the Judson Rittenhouse farm. Judson's daughter Miriam (1890-?) married Bertram and they purchased the farm in 1944 after renting it from Miriam's mother. Miriam and Bertram owned the farm until 1963 when they were in their 70s. In 1967, the road was named for this family.<sup>12</sup>

<sup>6</sup> Thomas Gordon. *A Map of the State of New Jersey with part of the adjoining States Compiled under the Patronage of the Legislature of said State*. Trenton: Thomas Gordon, 1828.

<sup>7</sup> Marfy Goodspeed. "The Mills of Delaware Township." GOODSPEED HISTORIES, June 2, 2010. <https://goodspeedhistories.com/the-mills-of-delaware-township/>.

<sup>8</sup> 1850, U.S. Federal Census, Hunterdon County, NJ, Schedule 1, Township of Delaware, Dwelling no. 183, John Hunt.

<sup>9</sup> Marfy Goodspeed. "Dilts Farm." GOODSPEED HISTORIES, May 24, 2012. <https://goodspeedhistories.com/dilts-farm/>.

<sup>10</sup> Marfy Goodspeed. "The Deremer-Wilson Farm." GOODSPEED HISTORIES, August 17, 2019. <https://goodspeedhistories.com/the-deremer-wilson-farm/>.

<sup>11</sup> Marfy Goodspeed. "Dilts Farm."

<sup>12</sup> 1910, U.S. Federal Census, Hunterdon County, NJ, Schedule 1, Delaware Township, Visited no. 113, Judson Rittenhouse; Marfy Goodspeed. "Dilts Farm."

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### Construction Details

The relatively small and utilitarian Buchanan Road stone-arch bridge exhibits many of the character-defining features that are typical of a mid-19th century stone-arch bridge in Delaware Township. It is a miniature version of the Cold Water Bridge on Pine Hill Road, which was built in 1849 and is similar to the former Stanford Road stone-arch bridge which was built in 1854 and demolished in 1980.<sup>13</sup> These three bridges were intentionally built with a high, semicircular arch barrel and raised bearing seats to elevate the roadway to suite site conditions. All three of these bridges also have a decorative arch ring set within an inset panel. The original tapering parapets of the Cold Water Bridge were also similar to those of the Buchanan Road stone-arch bridge.<sup>14</sup> These similarities support the 1857 construction date for this bridge.

Of the 15 stone-arch bridges which remain in Delaware Township today (on both active and inactive roadways), the Buchanan Road bridge is one of only four bridges built with a semicircular arch. The earliest remaining bridge – Croton Road stone-arch bridge has a semicircular arch that produced a substantial humpback in the roadway. At all subsequent bridges, the semicircular arch barrel was only used at specific site conditions involving a low streambed that formed a small gorge and created the need to elevate the roadway to reduce or remove a depression in the roadway. The high arch and raised bearing seats elevated the original dirt roadway of the Buchanan Road stone-arch bridge to a height over 9-feet above the streambed (it is now over 11-feet high). In comparison, the roadway of a bridge with a segmental arch may only rise 4 or 5-feet above a streambed.

A unique feature of this bridge is the absence of a keystone and the use of paired voussoirs separated by a mortared joint at the apex of each arch instead on each side of the bridge (Photos 5 and 9). The paired voussoirs are nearly identical. No other bridge in Delaware Township is known to have this detail.

The Buchanan Road stone-arch bridge is constructed of sandstone. Undressed stonework make up the wingwalls and parapets, longitudinally-oriented stonework make up the arch-barrel, and hand-dressed voussoirs make up the arch ring. Sandstone is the most commonly used stone in Delaware Township for stone-arch bridge construction due to the fact that the township is traversed by a belt of sandstone known as the “Stockton formation.” The dressed voussoirs of the arch ring are intended to hide the longitudinally-oriented stonework of the arch-barrel and decoratively contrast with the undressed stonework of the spandrel, parapet and wingwalls. This detail is present in all fifteen stone-arch bridges which remain in Delaware Township today.

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<sup>13</sup> The Cold Water Bridge is a contributing resource to the Covered Bridge Historic District, which is listed in the New Jersey and National Registers of Historic Places.

<sup>14</sup> A. G. Lichtenstein & Associates Inc. *The New Jersey Historic Bridge Database*. September 1994; Hunterdon County, New Jersey. “Bridge file D329,” Hunterdon County Engineer’s Office, Raritan Township.

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This bridge is categorized as a skew-arch which is a method of construction that enables the arch to span at an angle other than at a right angle. This bridge is 5 degrees off axis. The principles for skewed arch bridge construction were developed in the early 19th century for railroad construction because railroads needed to cross obstacles in as straight a line as possible. However, for slightly skewed bridges, where the skew angle is less than approximately 15 percent, the stonework of the arch barrel could still be laid with the courses parallel to the abutment, resulting in what is known as a “false” skew arch. This bridge falls into this category of construction.<sup>15</sup>

Thomas Boothby considered this bridge to be an excellent example of a ‘type 3’ bridge in the southern portion of Hunterdon County. The “type 3” bridge has an inset panel with a refinement found in the southern structures in which the arch ring and spandrel walls are on a different plane from the parapet and wingwalls. Thus, the bridge falls under the bridge stylistic category of “Inset”, as described in the *Historic Bridges of Delaware Township, Hunterdon County, New Jersey* Multiple Property Documentation Form.<sup>16</sup>

### MPDF requirements

The Buchanan Road stone-arch bridge is listed in the inventory of stone-arch bridges in Delaware Township in the *Historic Bridges of Delaware Township, Hunterdon County, New Jersey* National Register of Historic Places Multiple Property Documentation Form. This bridge meets the registration requirements established by the MPDF under Criterion A. It contributed to the expansion of the rural road network and the ability of dispersed local farmers to transport crops to mills, markets, and urban centers. This stone-arch bridge reflects the growth and permanence of the local agricultural community.<sup>17</sup>

This bridge also meets the registration requirements established by the MPDF under Criterion C as it embodies the distinctive characteristics of a type, period, and method of construction. The bridge was constructed within the period of significance (1829-1882). The bridge shows a vernacular character in the construction of its parapets and wingwalls, and the arch ring shows a distinction in workmanship. The inset panel is visible. The arch-barrel and arch ring remain intact. Categorized as an inset arch bridge, the inset panels around the arch rings are intact and visible. The masonry changes, which included repointing and reconstruction of the northwest wingwall, is in keeping with continuous maintenance cycles.<sup>18</sup>

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<sup>15</sup> [https://en.wikipedia.org/wiki/Skew\\_arch](https://en.wikipedia.org/wiki/Skew_arch)

<sup>16</sup> Thomas Boothby et al. *Stone Arch Bridge Inventory, Phase II Hunterdon County, New Jersey*. University Park, PA: The Pennsylvania State University, 1998; Scott and Cielo, Section F, Page 1-2.

<sup>17</sup> Scott and Cielo, Section F, Page 1-5; Ibid, Section E, p 4-10.

<sup>18</sup> Scott and Cielo, Section F, Page 1-5; Ibid, Section E, p 10-17.

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## Conclusion

Buchanan Road stone-arch- bridge over a tributary of Alexauken Creek represents a local construction typology reflecting both the area's abundant supply of sandstone and the Euro-American population which settled the region in the 18th and 19th centuries. These humble stone-arch bridges are unassuming – built as utilitarian structures for the rural, agricultural community of Delaware Township, but built with pride of craftsmanship.

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## Boundary Description

The boundary of the nominated resource consists of the main body of the bridge (arch barrel, parapets, abutments and wingwalls) extending to the end of its wingwalls in all directions. It also includes the bridge right-of-way.

## Boundary Justification

Hunterdon County owns the bridge and the bridge right-of-way. The boundaries of the nominated resource are the same as the boundaries of the bridge and the bridge right-a-way property. There is no deed which records the boundaries of that property.

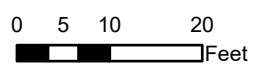
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**Buchanan Road stone-arch bridge  
over a tributary of Alexauken Creek**







New Jersey and National Registers Nomination  
Delaware Township, Hunterdon County, New Jersey



Datum: NAD 1983 State Plane New Jersey

Boundary and tax map

**Legend**

-  SR & NR Nomination
-  Parcels Data (Block and Lot)
-  Coordinates
-  Roads NJ (Centerlines)
-  Stream/River
-  Connector

0.078 Acres



NJDEP  
Historic Preservation Office  
April 2024

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## Photo Log

Name: Buchanan Road stone-arch bridge over a tributary of Alexauken Creek

Location: Delaware Township, Hunterdon County, NJ

Photographer: Carla Cielo

Date(s): April 6, 2023; October 27, 2023

Repository: 548 County Road 579, Ringoes, New Jersey 08551

Photo 1: View facing southeast towards the intersection of Lambertville/Headquarters Road

Photo 2: View facing northwest towards the intersection of Sandy Ridge Road.

Photo 3: Northeast (upstream) side of the bridge, view facing south.

Photo 4: Northeast (upstream) side of the bridge, view facing south showing buttress at the base of the northeast wingwall, the arch ring, spandrel, and the displaced parapet.

Photo 5: Northeast (upstream) side of the bridge. View facing southwest showing the split keystone and the cantilevered parapet wall.

Photo 6: Southwest (downstream) side of the bridge, view facing northeast.

Photo 7: Southwest (downstream) side of the bridge, view facing north showing the southwest wingwall.

Photo 8: Southwest (downstream) side of the bridge, View facing northwest showing the southeast wingwall.

Photo 9: Southwest (downstream) side of the bridge, view looking up at the apex of the arch ring and the cantilevered parapet.

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Illustration 1: 1851 map prior to the presents of Buchanan Road.<sup>1</sup>

<sup>1</sup> Samuel C. Cornell. *Map of Hunterdon County New Jersey: Entirely from Original Surveys*. Philadelphia: Van Derveer & Cornell, 1851.

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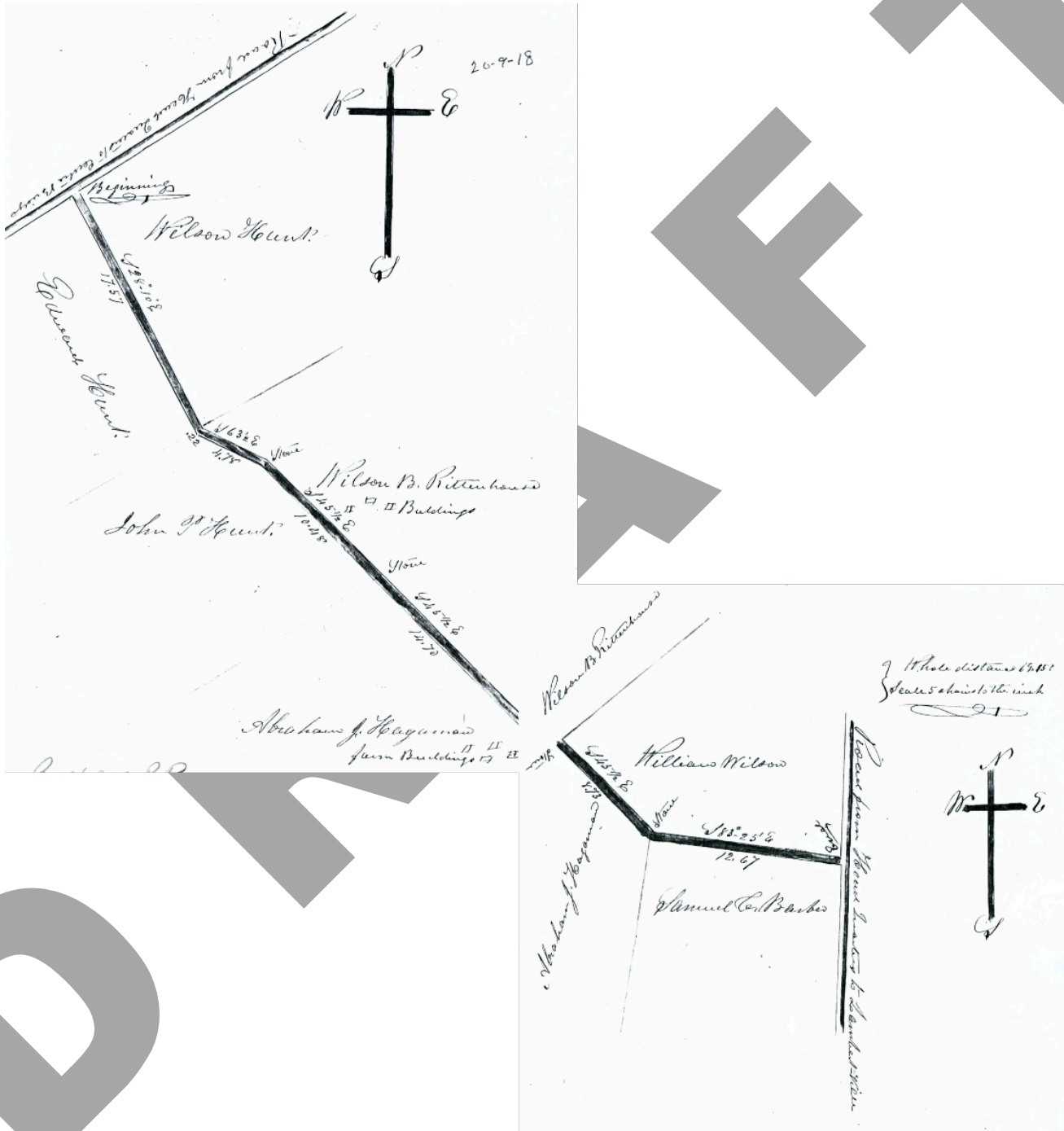


Illustration 2: 1857 survey of the road currently called Buchanan Road.<sup>2</sup> This survey is in two parts with a match line. The creek is not shown.

<sup>2</sup> Hunterdon County, New Jersey. "20-9-5," Road Records; Record Room of the County Clerk's Office, Flemington Borough.

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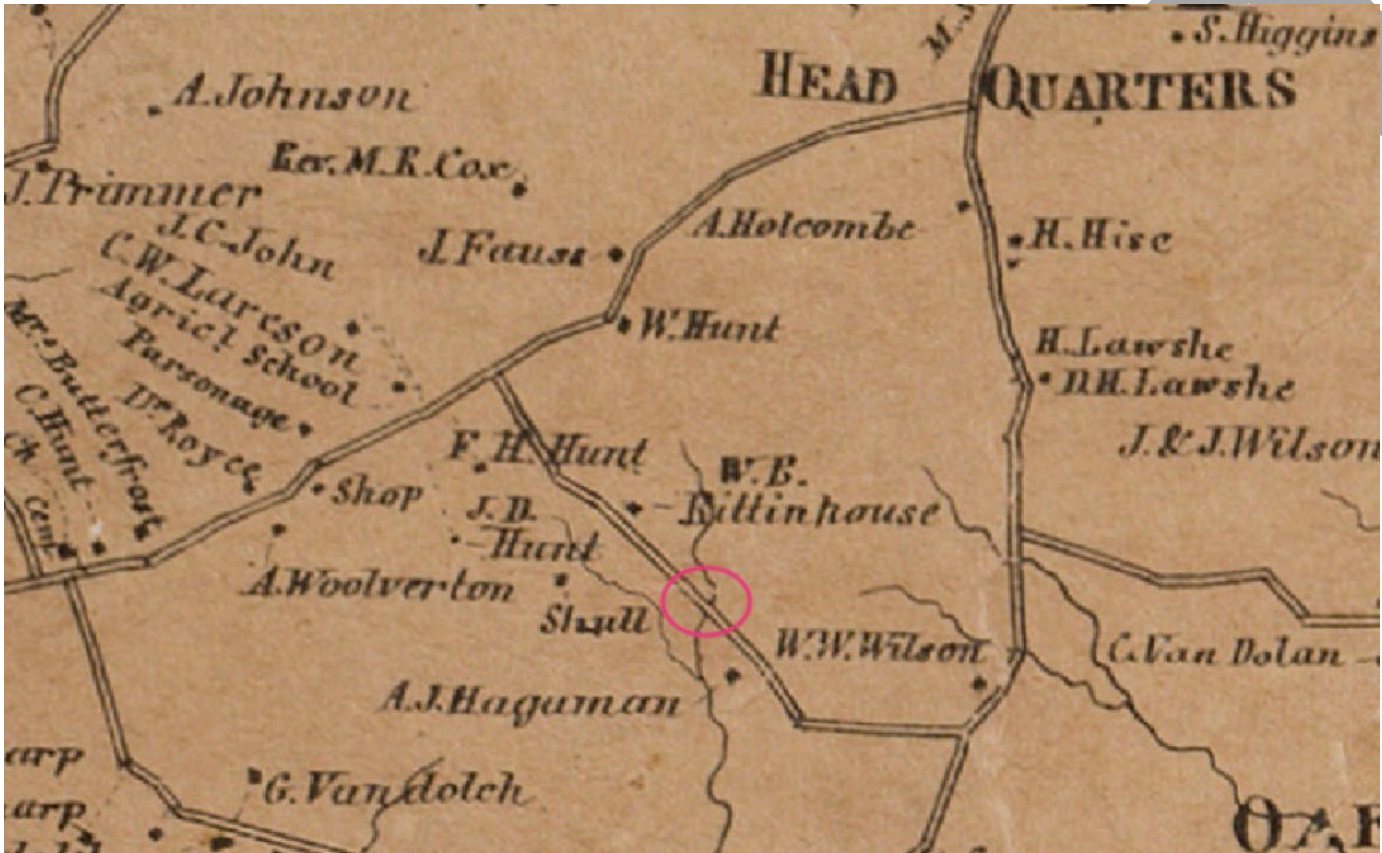


Illustration 3: 1860 Map showing Buchanan Road. The circle indicates the location of the bridge near the farms of Wilson B. Rittenhouse and Abraham J. Hagaman.<sup>3</sup>

<sup>3</sup> D.J. Lake and S. N. Beers. *Map of the Vicinity of Philadelphia and Trenton from actual Surveys*. Philadelphia: C.K. Stone & A. Pomeroy, 1860.

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Illustration 4: Beers' 1873 *Atlas of Hunterdon County* with bridge's location on Buchanan Road circled in red.<sup>4</sup>

<sup>4</sup> F. W. Beers. *Atlas of Hunterdon County, New Jersey: From Recent and Actual Surveys and Records*. New York: Beers, Comstock & Cline, 1873.

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Illustration 5: circa 1930-50. Buchanan Road stone-arch bridge.<sup>5</sup>

<sup>5</sup> Hunterdon County, New Jersey. "Bridge file D-441," Hunterdon County Engineer's Office, Raritan Township.

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Illustration 6: circa 1930-50. Buchanan Road at the stone arch bridge.<sup>6</sup>

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<sup>6</sup> Hunterdon County, New Jersey. "Bridge file D-441."



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Illustration 7: circa 1980 Buchanan Road stone-arch bridge.<sup>7</sup>

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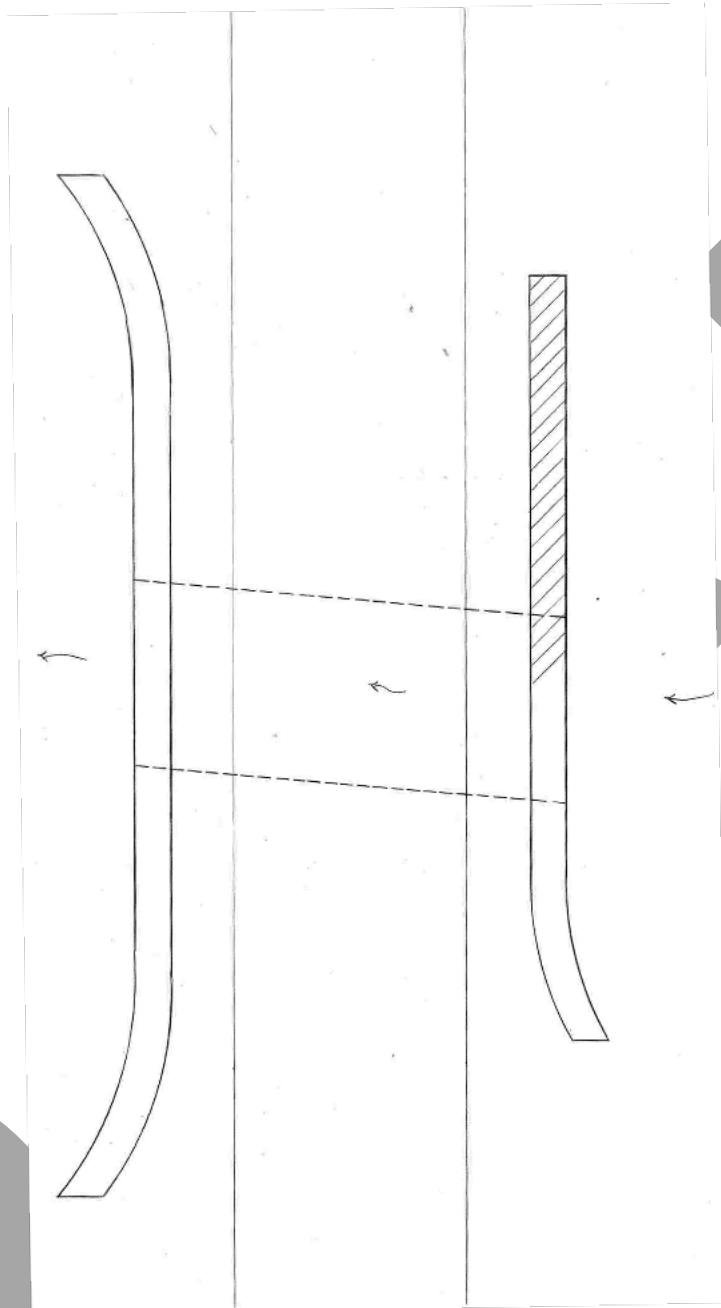
<sup>7</sup> Hunterdon County, New Jersey. "Bridge file D-441."

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Illustration 8a: Measured drawings, Plan view. Not to scale  
Drawn by Carla Cielo, September 2023

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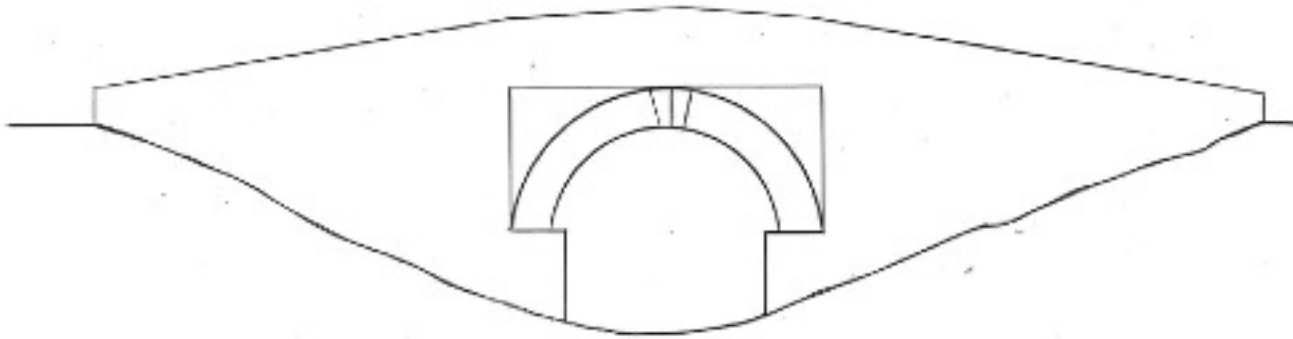


Illustration 8b: Measured drawings, Downstream (southwest) elevation. Not to scale  
Drawn by Carla Cielo, September 2023

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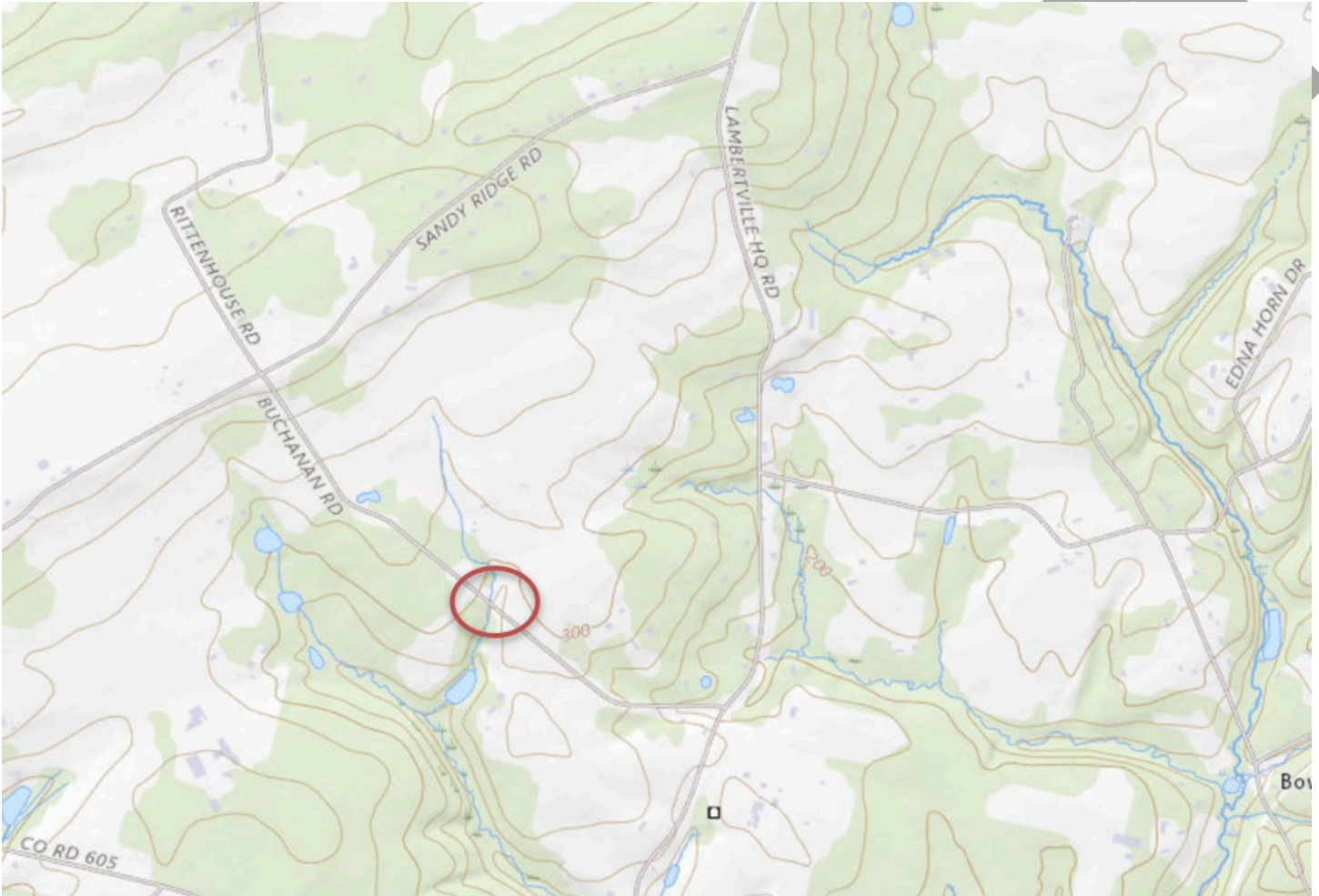


Illustration 9: Current location map.<sup>8</sup> (the circle indicates the location of the bridge)

<sup>8</sup> U.S. Geological Survey, 2023, Topographical Map, accessed December 2023 at URL <https://apps.nationalmap.gov/viewer/>.

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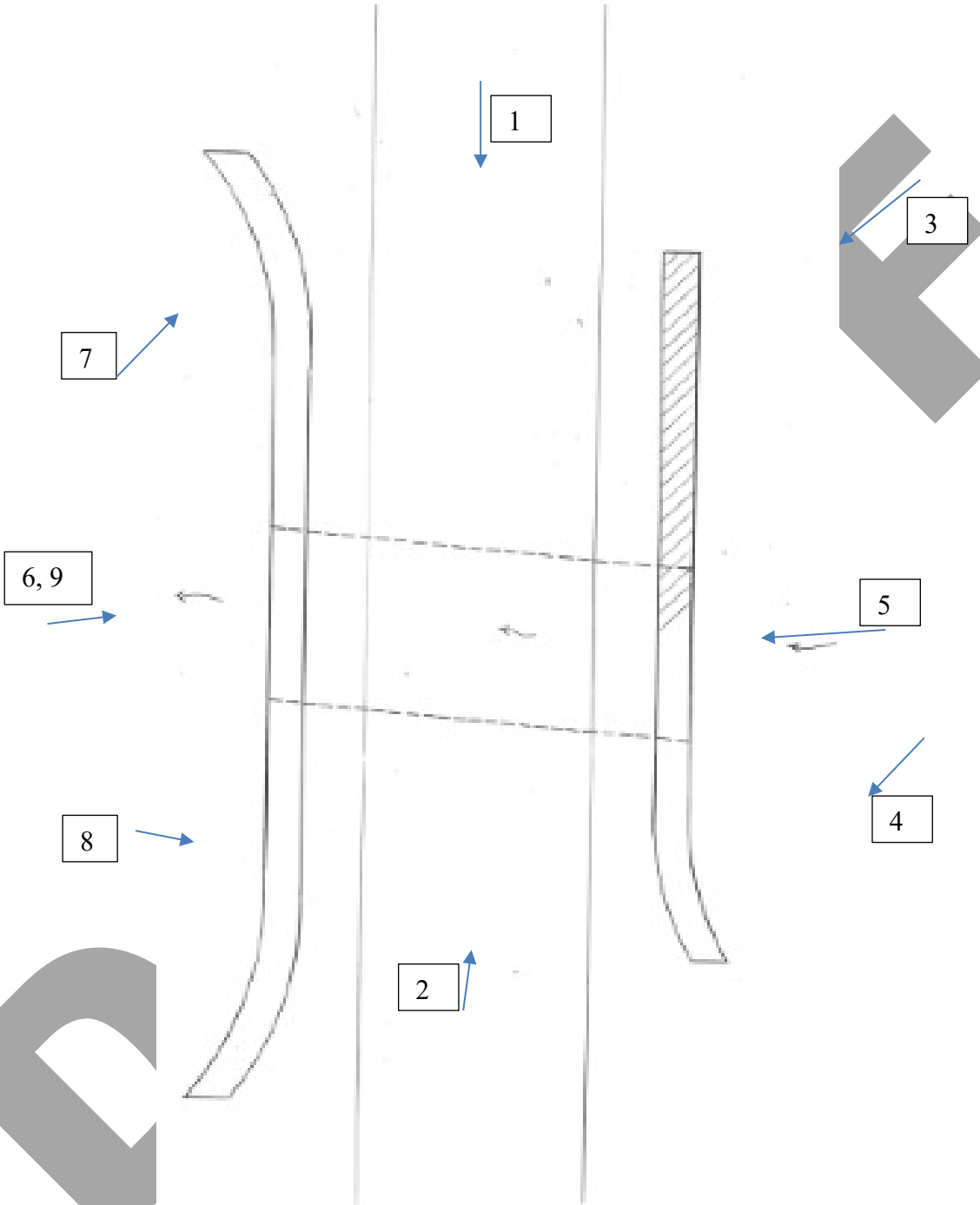
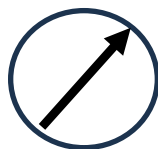


Photo Key



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Photo 1: View facing southeast towards the intersection of Lambertville/Headquarters Road

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Photo 2: View facing northwest towards the intersection of Sandy Ridge Road.

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Photo 3: Northeast (upstream) side of the bridge, view facing south.



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Photo 4: Northeast (upstream) side of the bridge, view facing south showing buttress at the base of the northeast wingwall, the arch ring, spandrel, and the displaced parapet.

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Photo 5: Northeast (upstream) side of the bridge. View facing southwest showing the split keystone and the cantilevered parapet wall.

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Photo 6: Southwest (downstream) side of the bridge, view facing northeast.

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Photo 7: Southwest (downstream) side of the bridge, view facing north showing the southwest wingwall

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Photo 8: Southwest (downstream) side of the bridge, View facing northwest showing the southeast wingwall

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Photo 9: Southwest (downstream) side of the bridge, view looking up at the apex of the arch ring and the cantilevered parapet.