

# “Ross Bridge” Goes On the Record

Today, the Civil War-era “Ross Bridge” is the centerpiece of the Historic Park at Ross Bridge on Ross Bridge Parkway. A trail system connects the park to the Ross Bridge community of more than a thousand homes in Hoover, Alabama.

For generations, residents of this sparsely settled part of western Shades Valley have told tales of iron being hauled over the bridge to the Confederate arsenal at Selma. They told these stories to Samford University historian Dr. James Brown, and Brown told them to Birgit Kibelka and me and took us to see the site. We were amazed and called Richard Anderson, former chief of the Historic American Engineering Record (HAER), now living in South Carolina, to see if he would lead a team to document the stone structure to HAER standards. HAER is a long-range program of the National Park Service that documents and interprets historically significant engineering sites and structures throughout the United States. HAER documentation is held at the Library of Congress, Prints and Documents Division.

Anderson agreed to take on the project, as did Jet Lowe of Baltimore, Maryland, who recently retired as HAER photographer. With Anderson as the principal investigator and responsible for the measured and interpretive drawings and Lowe providing large-format photographs, we thought we were set to produce HAER-standard documentation for the Library of Congress. The volunteer team for the multiday field work in February, in addition to Anderson and Lowe, included Betty Anderson, Jim Brown, Birgit Kibelka, Carol Slaughter, Katie Tipton, and me. Then, Anderson said that a written historical report would also be needed.

Solving the history mystery of who built the bridge (in reality a stone arched railroad culvert), and when, put the experienced researchers to the test. Why would anyone build such a substantive



The Ross Creek Culvert, elevation from the east. Jet Lowe, 2017. HAER AL-214-1.

structure in the wilderness when they could not get their railroad through Brock’s Gap in Shades Mountain? Who built it? And when? Every historian of note is on record that the railroads arrived to form Birmingham in 1871. How could the tales told at Ross Bridge be true?

The Ross Creek Culvert, also known as the Ross Bridge, is a rare surviving remnant of Civil War-era railroad construction.

Gerry Waters led the “who done it” search through deeds, sales, and census records that led to the heavily footnoted copy of this report that Birmingham Historical Society will submit, with Anderson’s drawings and Lowe’s photographs, to HAER. Katie Tipton edited the report.

Marjorie L. White



Entrance, Historic Park at Ross Bridge. Birgit Kibelka, 2017.



Left: Richard Anderson checks his calculations. Right: Jet Lowe sets up his large-format view camera. Birgit Kibelka, 2017.



Katie Tipton and Richard Anderson measure a south-facing wing wall. Birgit Kibelka, 2017.

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# THE ROSS CREEK CULVERT

## The South & North Alabama Railroad, John T. Milner, and the Development of Alabama's Mineral Region

The South & North Alabama Railroad was chartered on February 17, 1854, by the Alabama legislature. The railroad was intended to link Alabama's capital city of Montgomery with the Tennessee River in the northern part of the state. The legislative charter for the company stated that the company could raise \$3 million in stock, but that it must complete 30 miles of grading within two years and the entire 180-mile line within 15 years. A principal in the organization of the company was Tennessee-born Frank Gilmer Jr. of Gilmer & Company, cotton merchants in Montgomery.

Alabama was a cotton state at this time, and few legislators were interested in the development of North Alabama's mineral resources, especially its coal and iron, which an 1850 geological survey had identified. Furthermore, there were other, competing railroads attempting to capture Alabama's mineral resources and direct them to manufactories in other states. Another railroad sought to link Selma and Montgomery. These interests had sufficient legislative influence to delay the start of Gilmer's enterprise, Alabama's "Great Central Railroad"—often referred to as the Alabama Central Railroad or the Central Railroad. On February 15, 1856, the South & North's incorporation documents were amended to give the railroad five years to get started (i.e., until February 17, 1859).



John T. Milner. John Witherspoon DuBose, *Jefferson County and Birmingham; Alabama Historical and Biographical*, 1887.

Four years after initial incorporation of the South & North, on March 27, 1858, Alabama Governor Andrew Barry Moore selected the 32-year-old Georgia-born and -trained railroad engineer John Turner Milner to survey routes to develop the state's mineral resources. Milner's education included study at the University of Georgia and extensive field experience working on railroads in Georgia with his father, a railroad contractor. The state appropriated \$10,000 for the Alabama Central Railroad survey. Milner reported back to Governor Moore that

same year. His *Report to the Governor of Alabama on the Alabama Central Railroad* originally included a report (in Mrs. Milner's handwriting) with "maps, profiles, plans and books of the survey numbers and plainly designated." Only the report was published as a 144-page document in 1859.

In the report, Milner plans a railroad to run through the center of the state with spur lines running through the valleys to access the North Alabama mineral regions while connecting the navigable waters of the Gulf of Mexico with the Tennessee River to the north. The line will do so by creating the very hilly missing link from Montgomery—via Wetumpka, Montevallo (this location later changes to Lime Kiln–Calera), and Blount Springs—to Decatur on the

Tennessee River, a terminus decided by Milner and favorable interests in that city led by James Withers Sloss. Before construction of the Alabama Central Railroad is finally started, other railroads will run from the Gulf to Montgomery and from Decatur to Nashville and Louisville. Another will link Selma to Montgomery. Indeed, by 1860 Alabama had 800 miles of shortline railroads built by many competing interests during the 1850s.

Milner's report included prescient forecasts about the future value of coal and showcased the success of Georgia railroads with which he had firsthand experience in developing entire regions by extending railroads to them. Milner's preferred route for his railroad traversed the wilds of western Shades Valley before arriving in the farming region of Jones Valley about Elyton, then the county seat of Jefferson County. In 1858, his preferred route continued across Jones Valley, across Sand Mountain and "the Warriors" (branches of the Warrior River), to Blount Springs, and on to Decatur. Milner stated "from Montevallo to 30 miles South of Decatur is on a succession of ridges, mountains, and valleys, running northeast and southwest." Railroads of the era found grades of 1 percent to be steep; mountains that rose 400 and 500 feet above their valleys presented significant challenges, as did the many intervening ridges and the rivers and creeks that flowed from them. In addition to engineering talent, manpower, and money, blasting powder was an essential ingredient in the construction of such a railroad.

Milner estimated the cost for a 121-mile Montevallo-to-Elyton-to-Decatur segment at \$2,806,905.75, or \$23,197.57 per mile. He also noted that the railroad would receive "400,000 acres of public land, which at \$2 per acre will be \$800,000 or 28½ percent of the amount necessary to build and equip the road, saying nothing of the immense value of the coal, 100,000 acres of which the Company will get." Of the \$2.8 million cost, \$1.26 million—the largest category of expense—was for Grading, Masonry, and Bridges. Other expense categories included Superstructure (iron, cross ties, spikes, frogs, castings, and track laying); Depots and Water Stations; Equipment, including locomotives and passenger, freight, baggage, and mail cars; and Engineering. Milner's cost estimates were to build the railway, depots, machine shops, and engine houses and to acquire rolling stock and tools to repair everything. He argued that the state legislators would receive returns of at least 7½ percent of any appropriation made to build and equip the railroad, based on the most conservative projections of cost and revenue from the enterprise.

With three rivers and many creeks to cross, Milner developed cost scenarios for culverts and bridges. Arch Culvert Masonry was estimated at \$700 per cubic yard. Box Culvert Masonry was less expensive, at \$350 per cubic yard. Bridge Culvert Masonry was the most expensive and was



Box culvert, east side of the railbed, east of the arched culvert. Jet Lowe, 2017. HAER AL-214-B-1.

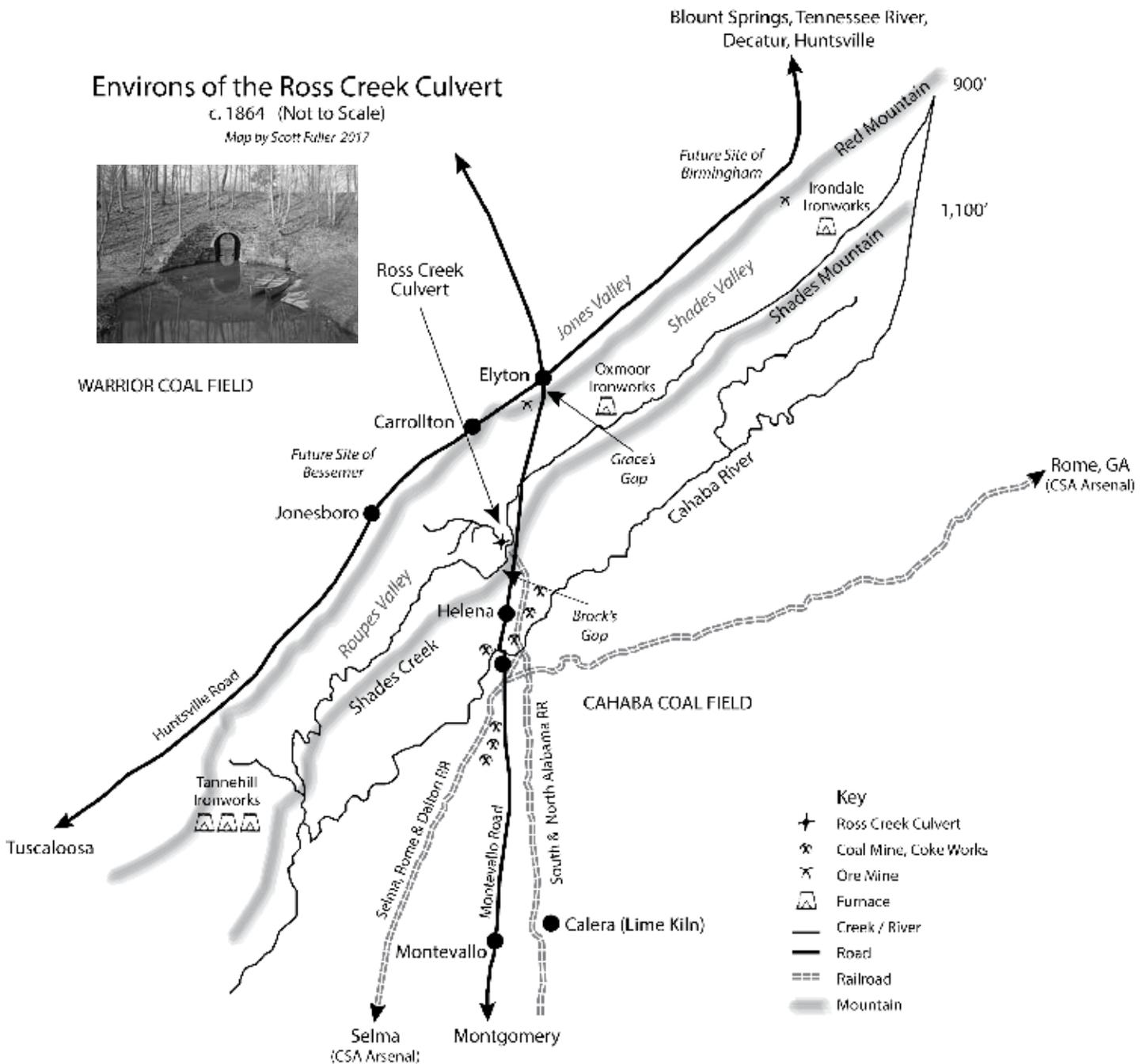
## Environs of the Ross Creek Culvert

c. 1864 (Not to Scale)

Map by Scott Fuller 2017



WARRIOR COAL FIELD



estimated to cost \$1,200 per cubic yard, with bridge abutments at \$500 per cubic yard.

Milner closed his report by saying that this railroad “would build up our state more than any other.” With that statement, the enthusiastic young engineer became the railroad’s chief advocate, a role in which he would work harder, longer, and more successfully than he could have imagined. Principal and assistant engineers for the 1858 survey and report were his cousin John A. Milner, N. W. Long, John T. Elmore, and R. B. Harris.

Milner had wanted to cross Shades Mountain where Shades Creek cuts through it and then head directly to the center of the

Warrior coal field, but he abandoned this route as too costly. The least expensive of the six routes he explored crossed Shades Mountain at today’s Brock’s Gap and crossed Red Mountain at Grace’s Gap, both natural mountain gaps. This route hugged the topography and paralleled the Montevallo Road, the only north/south road crossing this portion of the then largely undeveloped wilderness with its scattered farms. Elyton resident Baylis Grace had a farm at Grace’s Gap on Red Mountain and observed as horse and oxen hooves and wagon wheels crushed the red rock there into a fine red dust. In the 1840s, Grace had a wagonload of this red rock tested in a Bibb County forge, and it did indeed produce iron.

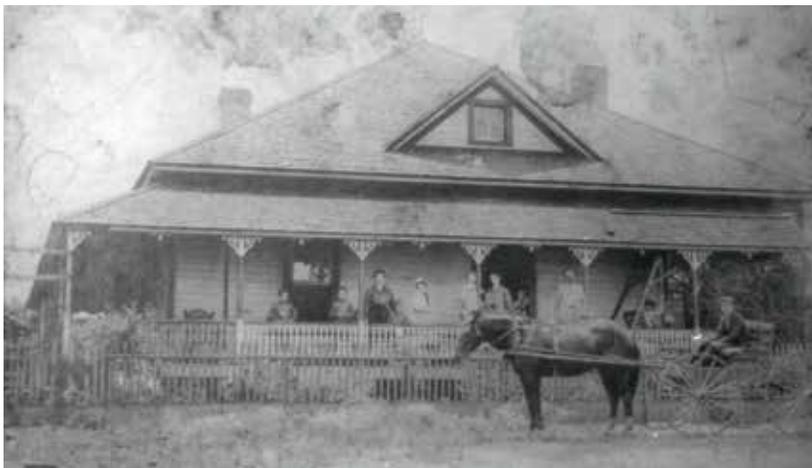
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## James Taylor Ross, Pinckney Brock, and George Coward Get Key Patent Lands in Shades Valley

On June 1, 1858, James T. Ross purchased 120 acres along the Montevallo Road as it crossed Ross Creek; Pinckney L. Brock purchased 160 acres at what became known as Brock's Gap; and nearby George W. Coward purchased 80 acres of very rocky Shades Mountain land. The Rosses, Brocks, and Cowards were Jefferson County residents who had migrated from South Carolina. They farmed, raised livestock, and did not own slaves. The lands they acquired in 1858 in this then very sparsely settled and remote area of Shades Valley (Township 19 South, Range 3 West) were U.S. Government patent lands made available at a reduced cost. Ross and Brock had acquired other lands in the same township in the early 1850s. By 1858, Ross owned 240 acres of land, having entered 120 acres in December 1854, parcels in the vicinity of Ross Creek. Ross was among three large landholders in this area; however, he did not live here.

In 1858, James Taylor Ross was 55 years old. He was born in 1803 in Yorkville (today's York) in the South Carolina uplands near today's Charlotte, North Carolina. With his wife, Mary Louisa Coward, Ross had migrated to Alabama by 1839. In 1840, the Rosses lived in Cherokee County with their two young sons. The couple ultimately had four sons: William Elias (1839–1915), Andrew Campbell (1840–1904), John M. (1844–1862), and Albert Alexander (1845–1926). By 1850, the family lived on a farm in Jonesboro near the future town of Bessemer. Ross was of Scotch-Irish heritage, his forbearers having immigrated to Frederick County, Virginia, in 1744.

By 1860, Ross was heading a successful agricultural enterprise. He had acquired 400 acres of real estate valued at \$1,000 and farming implements and machinery valued at \$100. With his wife and four sons (then ages 21, 20, 15, and 14), the entrepreneur had made 70 acres of his lands productive, as he reported to the agricultural census taker in that year. Ross's report further indicated that he raised 50 bushels of Indian corn and 3 bales of cotton, spun 30 pounds of wool from his 16 sheep, and churned 200 pounds of butter with cream from his 4 milk cows. He also owned a horse, 2 mules, 2 oxen, and 40 pigs. In addition to his land in the Ross Creek area, Ross held acreage in Jonesboro, his place of residence at this time.



Ross House, Little Shades Creek. Collection of Robert Curren. The Ross family pictured may be Alec and Nettie Ross, their children and, dressed in black, Mary Louisa Coward Ross, widow of James Taylor Ross.

## 1859: Contractor and Labor Are Acquired

Physical work on the South & North Alabama Railroad appears to have been set in motion by January 1859, when chief engineer John T. Milner placed a "Notice to Contractors" for grading and culvert masonry for the first 30 miles of the railroad. Bids were to be presented to the South & North office "above F. M. Gilmer Jr.'s" cotton warehouse in Montgomery. On September 16, 1859, the *Daily Confederation* reported "glorious news": work on the railroad had begun. The paper noted that Dr. William H. Rives had gone "east to purchase slaves" and had returned the day before with 85 negroes whom he had "delivered to Mr. Boyle, the contractor, who will put them to work" staking the railroad between Montgomery and Wetumpka.

Bartholomew ("Bartley") Boyle (1826–1875) was an Irish-born railroad contractor active in building railroads across Alabama. In the 1860 census, the 35-year old Boyle was living in Wetumpka with numerous other men whose occupations were principal surveyor, assistant surveyor, laborer, and overseer. By the time of his death in 1875, Boyle had acquired 2,000 acres of mineral lands in the North Birmingham area that were later developed as the Lewisburg and New Castle coal mines. These lands probably included the gap still known as Boyles Gap, as well as the future location of the L. & N. (now CSX) shops and yards at Boyles, established 1904.

## Fall 1860: The South & North Acquires a Construction Loan

In 1860, the Alabama legislature officially adopted John Milner's recommendations as to the best route for a railroad that would run through the center of the state, granting a loan of \$663,135 "on condition that the entire line be graded and prepared for iron by the end of five years." By this time, cotton planter Frank Gilmer controlled three-quarters of the railroad's stock, other investors having withdrawn their support. Alabama's major industrialist, Daniel Pratt of the Continental Gin Company in Prattville (HAER AL-5), the nation's largest maker of cotton gins, also became a major investor. Milner finally had funds to begin work on the railroad, albeit half of his 1858 estimate.

## January 1861: Alabama Secedes from the Union

On January 11, 1861, Alabama seceded from the Union. Montgomery became the capital of the Confederate states. Shortly thereafter, the state set up the Alabama Arms Manufacturing Company to mine ore and manufacture iron for Confederate ordnance. Frank Gilmer Jr. and John T. Milner were involved in this company.

That the South & North had hired workers and had started on its line is attested by an April 18, 1861, notice in the *Southern Confederacy* of Atlanta, Georgia, that the company had "sent down fifty hands to assist in completing the Montgomery and Pensacola Railroad." By early 1861, the South & North had extended track to the borders of the Cahaba coal field in Shelby County, just south of Shades Valley where today's Ross Creek Culvert lies, and was approaching the mineral regions of Jefferson County.

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## 1861–1862: The South & North Acquires Key Lands in Shades Valley

From May 1861 to October 1862, railroad contractor Bartholomew Boyle and chief engineer John T. Milner acquired the strategic land to enable the future South & North Railroad to cross Shades Mountain and a major creek, reach the Red Mountain ores, and enter the mineral regions beyond.

On May 22, 1861, Pinckney Brock sold five tracts (approximately 300 acres) of his land at Brock's Gap to Boyle. Brock subsequently moved to Winston County, where residents were known for their opposition to the war. He took an oath of allegiance to the United States there on July 31, 1864.

In July 1861, James Ross's eldest son, William Elias Ross, enlisted in the 18th Alabama Regiment. He would serve until May 12, 1865.

On December 9, 1861, the Alabama legislature passed an act giving the South & North nine months to "locate, select and designate the portions of the public lands in this State granted to said company by the government of the United States," these lands having been "withdrawn from the market for the benefit of said railroad." The South & North did not exercise this option for additional land until 1871.

On May 10, 1862, John Taylor Ross's second son, Andrew Campbell, volunteered (to avoid conscription) for three years in the 43rd Alabama Regiment, organized in May 1862; he served as a teamster before deserting at Petersburg on September 16, 1864. Andrew's younger brother, John M. Ross, enlisted with him but died in a Confederate hospital in Montgomery on August 3, 1862. Fourth son Albert Alexander (Alec) would remain on the Jonesboro farm with his parents until March 4, 1864; he served in the 8th Alabama from March 1864 until May 1865.

In September 1862, Baylis Grace granted a right of way for the South & North Alabama Railroad to cross his farm at Grace's Gap on Red Mountain near today's Red Mountain Park.

With three of his four sons gone to fight in the Civil War, including one who would not come home, Ross reasoned it was time to sell most of the lands he had been accumulating in Shades Valley. On October 10, 1862, James Taylor Ross and his wife Mary Coward Ross sold four tracts of land (approximately 490 acres) in the area of Ross Creek to John T. Milner for \$1,500.

The James T. Ross and Wife Land Deed to John T. Milner of October 10, 1862, is witnessed by R. H. Kelly, indicating that Richard Hamlin Kelly, an Irish-born railroad engineer, is in Alabama, is associated with the South & North Alabama Railroad, and is consulted on the location of a culvert to be built across a major creek in this portion of Shades Valley, through which the future railroad would soon be graded. Initial procedure for the construction of 19th-century railroads, as noted in the advertisements for workers, included clearing the land, grading, and building bridges and culverts.

Richard Hamlin Kelly (1832–1878) was born in Northern Ireland in 1832. According to an unsourced profile, Kelly was a civil engineer "of great talent," who first located in Iowa, where he married. He went south shortly before the Civil War to work on the South & North railroad and was "stranded" in Alabama when the

war broke out. Kelly is said to have designed the 1856 Rock Island Railroad bridge at Davenport, Iowa, the first bridge to span the Mississippi River. The 1860 census lists Kelly as a 30-year old engineer living in Iowa City, Iowa; the 1870 census lists him as an engineer living in Union Springs, Alabama. Kelly is on the job with the South & North by October 10, 1862, and is party to the acquisition of the gap and culvert properties in 1862 and 1863.

James Taylor Ross moved to Shades Valley sometime in the 1860s as he is listed as living in Township 19 Range 3 West in the 1870 census. His youngest son, Alec, then age 24, had returned from the war and lived with his parents. Neither male gave an occupation to the census taker. The 1880 census notes that Alec and his wife Mary Antoinette ("Nettie") Nabors continued to live with the senior Rosses. After living on a ridge overlooking Shades Mountain, the Rosses are said to have moved to a site on Little Shades Creek near the Woodward Iron Company's ore mines at Redding on Red Mountain (*see photo page 4*). James Ross became a respected member of the Shades Valley community. At age 85, he was elected Justice of the Peace for Jefferson County. He died in 1890 and is buried with other members of the Ross family in Union Baptist Cemetery in Lipscomb. By then, Alec Ross had migrated with his family to the new town of Bessemer, just west of the cemetery; several of his sons became lawyers.

## 1862: The Red Mountain Iron & Coal Company Is Established

On April 11, 1862, the Confederate government established the Nitre and Mining Bureau to encourage the production of war materials for its arsenals. The government quickly backed the construction of 13 furnaces in Alabama with funds of up to \$100,000 per furnace to produce iron for shot, shell, and warships. It also provided funds to railroads to haul the iron to its arsenal at Selma. Iron was also shipped to the Confederate arsenal at Rome, Georgia.

In late 1862, as related by John Milner's biographer Dorothea Warren, "Colonel Frank Gilmer and Mr. Milner went up to Richmond, and from Secretary of War [James] Seddon succeeded in getting a contract drawn up with the Confederate Government to erect a furnace and rolling mills and to build a railroad to them." Ethel Armes, writing in her 1910 history of the development of coal and iron in Alabama, footnoted the deal between Gilmer, Milner, and Seddon, crediting "Milner's Address to Georgia Society." (A copy of the address has not been located.)

On November 5, 1862, a group of 25 Alabama planters and business men—including cotton planter Frank Gilmer Jr., his brother William Gilmer of Montgomery, industrialist Daniel Pratt, and railroad engineer John T. Milner—incorporated the Red Mountain Iron & Coal Company, the successor firm to the Alabama Arms Manufacturing Company, and capitalized it with an astonishing \$1.25 million in stock options. Thus, demand for Confederate armament prompted formation of Jefferson County's first iron manufactory and iron ore mines.

## Winter 1862: Land and Labor Acquired to Push Forward

Chief engineer John Milner quickly began newspaper advertising for more railroad workers to build the road to access the industrial sites. On December 12, 1862, editors of the *Montgomery Mail* endorsed the campaign to build the South & North:

### The Central Rail Road Company

The advertisement calling for six hundred negroes to work on the South & North Alabama (or Central) Rail Road shows that the efforts of the company to connect Montgomery with the Tennessee river at Decatur are not flagging. We need hardly say that we are rejoiced at this new evidence that the company is determined to push the good work forward to a speedy completion. Knowing the character of the President [Frank Gilmer Jr.], Engineers, contractors, &c. for energy and perseverance, we have never doubted that the road would be built, the croakings of those who did not choose to join the company to the contrary notwithstanding. The public may rely upon the assertion that North and South Alabama will be within a reasonable time united by a first class rail road, and thousands of acres of land now uncultivated [will] be in demand. And the coal and iron that will be thus developed! Words cannot convey an idea of their extent and value along the line of the road which is to be to Alabama what the Western & Atlantic road is and has long been to Georgia. Speed the day!

On December 20, 1862, another *Montgomery Mail* editorial noted that “the laboring force of the company will be increased to one thousand negroes within a very short period, several hundred being now and for nearly two years past engaged upon the work. The Chief Engineer is yet advertising for six hundred more negroes, to work on the road.”

In January 1863, Milner’s advertisements appeared in the *Mobile Register*, the *Selma Morning Reporter*, and the *Vicksburg Whig*. Milner sought “600 Negroes” and “800 Negroes” to work “in getting ties, track laying, bridging, &c., near Elyton and Montevallo.” Workers would live in camps of ten with housing and sustenance, supplied by the railroad and prepared for each group of 10 by their “woman” (cook) and “boy.” Parties sending 50 or more workers could send an overseer to assist with proper management.

In January and March 1863, the Red Mountain Iron & Coal Company acquired the land to build the railroad into Shades Valley and access the future Oxmoor Furnace land and future city of Birmingham. The company purchased 1,920 acres that included James Ross’s 490 acres in the Ross Creek area and 300 acres of Pinckney Brock’s land at Brock’s Gap, properties South & North officials Milner and Boyle had acquired from Ross and Brock in 1862 and 1861, respectively. R. H. Kelly witnessed the 1863 sale of the Ross land.

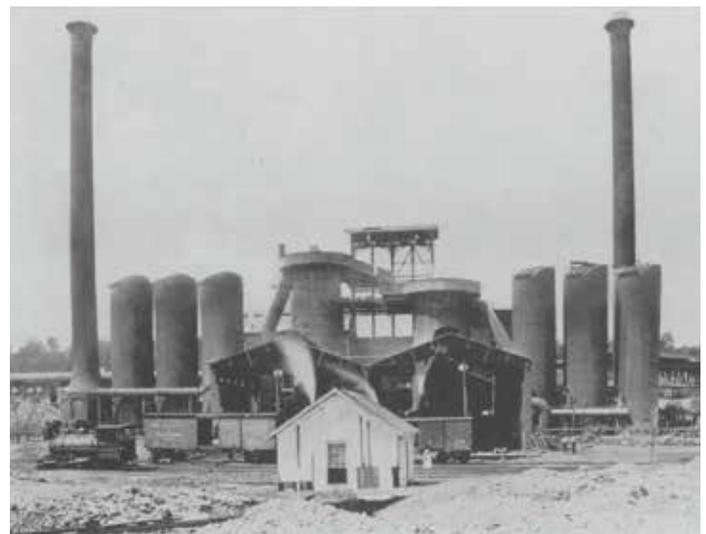
“Confidently expecting that the railroad would soon reach the ore lands,” as Milner’s biographer Dorothea Warren records, work forged ahead on the South & North railroad and a new furnace in Shades Valley. The Red Mountain Iron & Coal Company acquired a total of 7,340 acres and selected a site for the furnace. The construction of a 32-foot-high circular stone furnace, blown in in October or November 1863 (the first of two at the site), began a new



“Wanted to Hire 600 Negroes.” Advertisement, *Sunday Mississippian*, January 24, 1864. Alabama Department of Archives and History.

community along Shades Creek that became known as Ox Moor. Ox Moor (eventually spelled “Oxmoor”) was named for company lawyer Daniel Shipman Troy’s North Carolina plantation, which was named after the family homestead in Ireland. Tramways were extended to the soft ore on Red Mountain’s crest near Grace’s Gap. (Baylis Grace had made the first sale of Red Mountain’s ore lands to the Oxmoor enterprise in 1862.) The near 70-year-old ironmaster Moses Stroup was hired away from the Tannehill furnaces (HAER AL-122) to supervise the enterprise. Forests surrounding Oxmoor were timbered for railroad construction and burned for charcoal to fire the furnace.

With 60 furnace men and 200 to 300 slaves (hired for an estimated \$125 to \$175 each annually) to cut the timber and haul wood, the furnaces at Oxmoor were a continuously successful operation, pouring out at least five to six tons of iron per day. As historian Ethel Armes reported, the Oxmoor furnaces “kept up to the mark, steady and true, and everyone knew it was because ‘Old Man Stroup was on the job.’” Teamsters drove ox carts, heavily laden with three to four tons of charcoal iron, over the Montevallo Road through Brock’s Gap to the South & North’s railhead on the other side of the gap. Here, the iron was loaded onto railcars and transported to the Selma arsenal, where 900 men turned it into shot and shell.



Oxmoor Furnaces, after being rebuilt after the Civil War. Joseph H. Woodward III, *Alabama Blast Furnaces*, 1940. They continued in blast until 1927.

## The Long Haul to the Railhead



"The Piney Woods Express—Hauling timber for charcoal in antebellum days." Ethel Armes, *The Story of Coal and Iron in Alabama*, 1910. Similar oxen teams hauled iron bars over the Ross Creek Culvert to the Confederate arsenals at Selma and Rome.

Furnaces were located near ore supplies, not expedient transportation routes. The haul of iron over the deeply rutted and often muddy and impassable Montevallo Road to the railhead was arduous travel. The road was made more passable through the spreading of slag from the furnaces.

By the time the furnaces began production in 1863, thanks to infusions of Confederate funds, Milner had built up the South & North Railroad from Calera through the Cahaba coal field to Billy Gould's Coal Mine and Coke Ovens (HAER No. AL-16) just south of Brock's Gap. In December 1863, Gould's partner, Fred Woodson, wrote to J. S. White at the Selma Arsenal requesting 75 pounds of blasting powder to put his coal mines "in a condition to throw out fifty tons coal per day." White directed the military store keeper to "please sell the Blasting Powder at customary rates, as . . . requested; provided the same be on hand to spare." The Red Mountain Iron & Coal Company also opened coal mines at Helena, and the railroad was busy transporting this coal for use by Confederate industries.

By 1863, Milner had also laid six miles of railroad, with toiling curves and extreme grades, across the southern flank of the steep, rocky Shades Mountain, to establish a railhead at the southern foot of Brock's Gap. He maintained this railroad during the years from 1863 to 1865, when substantial quantities of iron and coal were hauled to Selma and to Rome.

Although the Red Mountain Iron & Coal Company had acquired the land at Brock's Gap in the spring of 1863, the mountain remained, and, as historian Armes reports, there was no gunpowder to blast through it. Men were put to work with hand tools to attempt to chisel through the hard sandstone rock, but the mountain won the contest. The railhead remained on the south side.

### 1864: Milner Gets 600 More Railroad Workers

In December 1863, chief engineer Milner again advertised for 600 negroes to work on the South & North Railroad between Montgomery and Elyton. Tasks listed for the year 1864 included "Bridging, Track-laying, Grading, getting ties, timbers, &C." Applications were to be directed to Geo. O. Baker, Selma; R. H. Kelly, Lime Station [Calera], Shelby County; or John T. Milner in Montgomery.

In 1864, Milner was engaged in maintaining the railroad as it existed from Calera to Brock's Gap and completing the grading on to Grace's Gap, the farthest point north to which grading was extended during the war years. The "Willis J. Milner," a wood-burning loco-

motive named for Milner's father, hauled the majority of the Red Mountain Iron & Coal Company's iron and coal over a "patchwork line," made, according to Milner, of "every sort and kind of rail from 60 pounds T to 30 pounds T and strap rail and stringer!"

According to all historians, the railroad was graded north of Brock's Gap to Grace's Gap on Red Mountain. Whatever rails were laid did not remain after the Civil War.

### Red Mountain Iron & Coal Company Builds the Culvert

The Oxmoor furnace had been blown in in October or November of 1863. The company had also opened its coal mine at Helena at this time. With ownership of the Ross Creek site by January 1863 and workers assigned to the railroad near Elyton and Montevallo for the years 1863 and 1864, it seems highly probable that the well-capitalized Red Mountain Iron & Coal Company under John Milner's and Richard Kelly's supervision built the Ross Creek Culvert. The labor force advertised for in each of these years was hired to get ties, lay tracks, and build bridges and culverts.

Although no sources have been located that document the construction of the Ross Creek Culvert during 1863 or 1864, the physical evidence of the stone culvert itself reflects a well-engineered structure built for the ages by significant manpower and financial resources. Stories in the Coward-Curren family passed down through many generations state that the culvert was built during the war and iron hauled over it to Selma.

Robert Curren states that stone for the 1863 Oxmoor Furnace and the Ross Creek Culvert came from the Coward quarry on the north slope of Shades Mountain about two miles from the culvert site. Curren's sources include his great-grandfather, Peter Curren, who operated the Coward quarry after the Civil War; his grandfather, John C. Curren; many uncles; and Green Avery, a slave and later freeman who drove ox carts to haul the sandstone blocks across a ford at Shades Creek to the nearby construction sites. The quarry remains today along Shades Crest Road. (George Coward, a relative of the Rosses, acquired the quarry site in 1858 and did not sell it to the railroad engineers when his fellow South Carolinians sold their lands.) The Curren and Urie families operated the quarry through the 1880s, providing construction materials for the railroad and early buildings in Birmingham.

If the culvert was not built during 1863, it surely could have been built in 1864 with new laborers reporting directly to engineer R. H. Kelly in Calera.



Shades Mountain sandstone block remaining at the Coward-Curren quarry site, north of Shades Crest Road. Birgit Kibelka, 2017.

## Constructing the Culvert

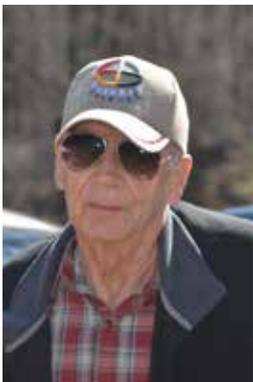


Engineers directing the building of a stone culvert. Dave Rathfon, *The Story and History of the 1864 Stone Arch Culvert Railroad Bridge*, [www.backtobradford.com](http://www.backtobradford.com).

James Gage, an authority on stone structures in the Northeastern United States (whose website, [www.stonestructures.org](http://www.stonestructures.org), presents detailed analyses and photographs of stone bridge and culvert construction), assessed a similar stone arched railroad culvert built in 1864 and still remaining in a remote area of McKean County, Pennsylvania. Gage described how the Pennsylvania culvert would have been built. His description appears also to apply to the well-designed, superbly built, and once remote Ross Creek Culvert:

The stones were cut, shaped, and finished by skilled artisans. The assembly of the culvert would have been overseen by a master stonemason. Carpenters would have been needed to construct the support framework to hold the arch in place during placement of the stones. Laborers would have been needed for transporting, hoisting, and positioning the stones.

The standard practice of 19th century railroads was to reserve the best quality construction work for bridges and culverts in the most remote areas. The logic being that the most remote and difficult-to-access structures needed to be built to minimize maintenance and repairs.



Robert ("Sam") Curren.  
Birgit Kibelka, 2017.



A sandstone block at the Coward-Curren quarry, split by skillfully driving wedges along a line of fracture in the rock face. Birgit Kibelka, 2017.

## March–April 1865: Wilson’s Raiders Destroy Furnaces and Railways, But Not the Culvert

In the spring of 1865, the 28-day, 525-mile cavalry campaign of Union General James Harrison Wilson (1837–1925) across Alabama and Georgia concentrated on destroying the Confederate government’s ability to make weapons of war. It was, according to historian Jim Bennett, “the largest cavalry raid and last major engagement of the war” and a major success. On March 28, Wilson’s troops torched wooden structures and destroyed machinery at the Oxmoor and Irondale furnace operations in Shades Valley. They destroyed the munitions-making facilities at Selma April 2–9. Troops dismantled rails and railroads wherever they found them. Per Robert Curren, they did not damage the culvert at Ross Creek; the local militia of old men and boys fired one shot, then surrendered the culvert.

## 1869: Work Resumes on the South & North Railroad

After the close of the war, efforts to build the South & North Alabama Railroad resumed. In April 1868, the Montgomery City Council granted the railroad a \$500,000 bond to build and equip the road from Montgomery to Calera. The state legislature approved this aid on December 7, 1866. The Council records mention a contracting company that was formed by partnership of Bartholomew Boyle, Richard H. Kelly, John T. Milner, and others as having control of “the labor of the penitentiary convicts.” The state of Alabama may have put up a \$2 million bond to finance the railroad.

On April 12, 1869, the South & North contracted with Sam Tate & Associates to complete the line from Calera to Elyton by April 1871 and to Decatur by December 1871. The cost was now \$16,000 per mile, significantly less than Milner’s estimate. Tennessean Sam Tate had been a major railroad promoter, manager, and contractor for the Decatur & Tusculumbia line, a very high-volume railway, and had also built the Memphis & Charleston Railroad.

Frank Gilmer Jr. was still a major stockholder and the driving force in making the South & North Alabama Railroad happen. Milner had produced a new routing survey in November 1866 (Ethel Armes was shown a copy); this became the plan to rebuild the railroad. However, as Armes relates, those building the railroad were instructed to build it as cheaply as could be, “and more cheaply if possible,” substituting long grades and curves for costly tunneling and bridgework.

There was another reason Milner acted with expediency. A well-financed and politically powerful competing railroad company, the Alabama & Chattanooga, headed by a pair of Northern businessmen, was attempting to undermine Milner’s 1858 plans to build a city on 7,000 well-chosen acres in the center of the Alabama mineral region. Stockholders of the competing company, “backed by predatory bankers of the East” (as the contemporary writer Mary Gordon Duffee put it), wanted to divert Alabama’s mineral resources and iron-making potential to Chattanooga, Tennessee, where they held major interests. The Alabama & Chattanooga owners had bought the vote of every Alabama legislator. They also tried to gain control of Gilmer and Milner’s railroad, and briefly did so, as well as control of the point at which their railroad and the South & North would cross, creating a new city. (Milner outwitted the Yankees, but that is another story.)



Brock's Gap, aerial view. Hunter Nichols, 2017.

Left to right: The 1908 Parkwood Tunnel (CSX), the railbed of the South &

North Alabama Railroad (now filled with trash), the CSX tracks, and the Wilcox Lakes neighborhood.

## Bridging Brock's Gap

The final remaining obstacle to completing the railway across Shades Valley was the lengthy cut through Shades Mountain at Brock's Gap. During 1871, this feat was engineered and completed by Colonel J. F. B. Jackson (1830–1912) using State of Alabama convicts. According to monthly reports by the state inspectors of convict workers, 111 convicts worked under Jackson's supervision in February 1871 and "appear[ed] to be well cared for." Mary Ellen Curtin, writing about the Alabama convict-lease system for the *Encyclopedia of Alabama*, states that since antebellum times, prisoners "had been put to work under the authority of a state warden." Curtin states that in the 1870s, "state prisoners convicted of felonies worked on railroads, where they suffered extremely high rates of death." During this period, railroad companies housed and fed the labor force but did not pay the state for the labor received.

The July 1871 report of the state inspectors notes that convicts working on the South & North Railroad were well cared for, but that 15 convicts died at Brock's Gap and Tate's mills (including two killed accidentally, by a falling rock and a blast). Jackson's workers used nitroglycerin to blast the 75-foot-deep channel through the hard sandstone rock of Shades Mountain and achieve the desired railway bed.

## November 1871: A Train Rolls Over the Ross Creek Culvert

Coming from Montgomery, the first train to run over the tracks of the South & North Alabama Railroad north of Brock's Gap into Shades Valley and across the Ross Creek Culvert did so in November 1871. It arrived in the cornfields that filled the future city of Birmingham on November 11, 1871. The city was chartered a month later on December 19, 1871. Streets were laid out parallel to the tracks of the South & North Alabama Railroad and lots sold.

Milner completed the South & North over arduous terrain to within 66 miles of its destination at Decatur on the Tennessee River during 1871. But it was not until late 1872 that North Alabama merchant and railroad promoter James Withers Sloss helped negotiate a deal with officers of the Louisville & Nashville Railroad to finish the line to Decatur and subsequently link it within the L. & N. (now CSX) system north to Nashville, Louisville, and beyond. Due to the hilly terrain, the link was very difficult to construct and very expensive.

Sam Tate sold his construction contract, and neither Milner nor Gilmer, the visionaries who worked for more than a decade to

complete the railroad, were involved in the L. & N. Gilmer died in poverty; Milner made a fortune investing in coal mining in the Birmingham area.

As Milner had envisioned in his 1859 report, the L. & N. extended spurs, beginning in 1886, that encircled Birmingham's mines, mills, and foundries. The loop became known as the Birmingham Mineral Railroad. An Alabama Mineral Railroad followed by 1904, linking industrial sites across the state. Thus, the L. & N. quickly became the principal purveyor of Alabama's mineral resources, iron and steel, pipe, and foundry products and a major Southern railroad. In 1908, the L. & N. re-laid the cheaply built and very expensive to operate original South & North Alabama line built in the 1870s.

## Oxmoor Rebuilds

The Oxmoor furnaces were rebuilt after the war with Daniel Pratt as the major investor and his son-in-law, Henry DeBardeleben, as manager. It was here in 1876 that Birmingham coke, made from coal, was first used to make iron from Birmingham ores. The successful experiment led to the great expansion of the Birmingham District mines and mills. Only coke iron could compete with Northern iron makers, as it yielded superior output to charcoal iron. The vast Oxmoor site that included ore and coal mines was acquired by several interests and later merged into the local Tennessee Coal, Iron & Railroad Company. U.S. Steel acquired this successful enterprise in 1907. This acquisition included the Ross Creek Culvert, the centerpiece of today's Ross Bridge community.

The South & North Alabama, the original line of the Louisville & Nashville in Alabama, retained its name for many years and ran over the Ross Creek Culvert until 1927 when the Oxmoor furnaces closed.

In 1872, the 180-mile line extending from Montgomery to Decatur, Alabama, became a branch of the Louisville & Nashville Railroad. From 1872 to 1908, the mainline of the L. & N. ran across the Ross Creek Culvert, transporting minerals, iron, pipe, and foundry products as well as passengers. In 1908, the L. & N. double-tracked this section of its original route and eliminated the Brock's Gap passage through Shades Mountain by building the Parkwood Tunnel. After 1908, the line across the culvert remained in use as a spur track to the Oxmoor furnaces until their closing in 1927. The Shannon Red Ore Mine operated nearby from 1919 to the late 1930s. Oxmoor's red ore mines (later called both the Eureka Mines and the Ishkooda group) operated until 1955.

## From Neighborhood Swimming Hole to City Park

While small communities remain to this day near the furnace and mine sites, the abandoned Ross Creek railroad culvert originally stood in a section of Shades Valley that was undeveloped but for the red ore mines that extended in underground rooms beneath it. The culvert's wing walls enticed area children to see how high they would jump from the ascending stones of their "Arched Culvert" into the four-foot waters of Ross Creek below. Oxmoor and Shannon Valley residents recalled accounts of the days when ox carts rolled over the bridge, heavily laden with iron destined to be made into Confederate shot and shell.



James Brown and Henry Hughes explore the culvert. *The Birmingham News*, 2001.

In the 1970s, these individuals shared their understanding with Samford University historian Dr. James Brown. In 2001, Brown led fellow Friends of Shades Creek members Michelle Blackwood, Randy Haddock, and Henry Hughes a few miles from the Shannon-Oxmoor Road along the abandoned railroad right of way to the then remote and overgrown culvert site. Amazed with the structure they found, the group advocated successfully with the Hoover City Council to save the bridge within a park-like setting. They asked for a 50-acre park. At the same time, Birmingham's Daniel Corporation, the developer of a proposed new master-planned community in the Ross Creek area, was searching for a name for its new venture as well as its annexation into the City of Hoover. Given



South & North Alabama Railroad right of way, now the park trail at the Historic Park at Ross Bridge. Jet Lowe, 2017, HAER AL-214-9.

that the active mainline of the L. & N. ran close by the culvert, the developer had not viewed the culvert as a positive. However, that view changed, and the culvert became a "bridge" and the new community Ross Bridge.

Daniel Corporation, USS Real Estate, and the Retirement Systems of Alabama named their new 1,600-acre community Ross Bridge for the culvert, adopting its central arch as the community's logo and designing its resort hotel, residences, and community buildings in the style of a late 19th- to early 20th-century railroad town. In 2002, the City of Hoover annexed the land upon which the Ross Bridge community would be built. In 2008, the physical culvert, causeway, and historic railway bed became part of a two-acre park, the Historic Park at Ross Bridge, now heavily frequented and enjoyed by residents of Ross Bridge. In 2017, the Ross Bridge community of 1,888 homes and 490 apartments is nearing the final stages of development.



East archway in elevation. Jet Lowe, 2017. HAER AL-214-4.



The Ross Creek Culvert, elevation from the west. Jet Lowe, 2017. HAER AL-214-5.



Concrete culvert on the 1908 L. & N. line (today's CSX). Jet Lowe, 2017. HAER AL-214-A001.

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## HISTORIC AMERICAN ENGINEERING RECORD

### ROSS CREEK CULVERT

(Ross Bridge)

HAER No. AL-214

*by Richard K. Anderson, Jr.*

- Location:** On the west side of Ross Bridge Parkway, about 2.7 miles north of the intersection of Ross Bridge Parkway with State Route 150 in the City of Hoover, Jefferson County, Alabama. The culvert lies at latitude 33.386158 and longitude -86.868086 under the embankment of the old South & North Alabama Railroad (the Louisville & Nashville Railroad mainline from 1872 to 1908) inside the Historic Park at Ross Bridge. These coordinates are estimated to be accurate to +/- 3 meters (10 feet). These coordinates were obtained from Google Earth in February 2017. The Ross Creek Culvert location has no restrictions on its release to the public.
- Date of Construction:** 1863 or 1864
- Engineers:** Chief Engineer John Turner Milner (1826–1898), Bartholomew Boyle (1826–1875), Richard Hamlin Kelly (1832–1878)
- Builder:** Red Mountain Iron & Coal Company
- Original Owner and Use:** South & North Alabama Railroad (chartered in 1854, completed in 1871, and since 1872 a part of the Louisville & Nashville Railroad, today's CSX System). The culvert conducted Ross Creek under the embankment for the railroad mainline from 1871 to 1908; the route served as a spur line to the Oxmoor Furnaces from 1908 to 1927.
- Present Owner and Use:** Ross Bridge Master Association; central feature of the Historic Park at Ross Bridge
- Significance:** The Ross Creek Culvert is a rare surviving remnant of Civil War–era railroad construction serving a nascent iron industry prior to the founding of Birmingham, Alabama, in 1871.
- Description:** The Ross Creek Culvert is oriented roughly east to west and built of Pennsylvania-era Shades sandstone laid as coursed dressed ashlar with margin draft. The culvert's 62-foot-long vault is of smooth dressed sandstone above the spring line with coursed ashlar masonry below. The round arches at the vault ends are 9'-10" between spring stones and feature a projecting keystone and dressed voussoirs. The top of the vault lies approximately 10'-6" above the water surface of Ross Creek and about 16 feet below the top of the roadbed above. The ends of the vault are flanked by curved retaining walls of coursed dressed sandstone ashlar, stepped to follow the angle of repose in the railroad embankment. The retaining walls have a radius of about 16'-8" (in plan view) on their exposed faces. Behind the ashlar walls and above the vault lies rubble of undetermined depth, surmounted by embankment soil, typical of this kind of construction. The rubble backing can be observed in places where original stones have fallen out of place. The condition of the culvert is fair. The vault is intact, but numerous stones in the southeast arch opening have fallen out, and the arch and attached wing wall have settled noticeably. This highly finished structure speaks of a railroad project backed by considerable funding with expectations of a long and profitable future.



West archway in elevation. Jet Lowe, 2017. HAER AL-214-6.

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James Brown, retired European historian from Samford University in Birmingham, led us to the culvert's location and provided documentation about the site and the efforts of the Friends of Shades Creek to get it dedicated as a park in 2002. Brown also provided his canoes and gaiters to facilitate and assist with field research at the site.

Carol Slaughter, geologist, helped analyze the stone structure of the quarry and reviewed the Official Records of the Confederacy for mention of the culvert and the railroad.

Robert (“Sam”) and Evangeline Curren provided written and oral information documenting the stories told in their family since the Civil War. The Currens led us to the Brock’s Gap site (through which three railroads currently run) and to the Coward-Curren Quarry on Shades Mountain.

Carolyn Kolar of the Hoover Historical Society contacted members for information about the culvert via Facebook.

Jim Hahn, son of the Hoover, Alabama, historian Madge Hahn Barefield, emailed tales of exploring Brock’s Gap in his childhood and contacted the Brock family for information.

Janice Crumpton responded to the Hoover Historical Society’s Facebook post and led us to Robert Curren, the Curren family historian. Steve Winfield also responded with information.

Katie Reinhardt of the Richardson-Sloane Special Collections Center of the Davenport Public Library, Davenport, Iowa, assisted with research on the 1856 bridge over the Mississippi. The library helped the attempt to track down links between the engineer who designed the culvert over Ross Creek and the first bridge over the Mississippi River for the Rock Island Railroad in 1856.

Betty Anderson provided moral and other support and encouragement to the field research team that documented the culvert.

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Carol Slaughter and Jim Brown, testing the sandstone block of the east archway. Birgit Kibelka, 2017.

**SOURCES:** Alabama Civil War Service Database. Alabama Department of Archives and History; Alabama Session Laws, 1853–1854, 1855–1856, 1861, 1862. State of Alabama, 1854, 1856, 1862; Alabama State Census, 1866. Alabama Department of Archives and History; *Annual Report of the Inspectors of the Alabama Penitentiary: From October 1, 1870, to October 1, 1871*. Montgomery, AL: W. W. Screws, 1871; Armes, Ethel. *The Story of Coal and Iron in Alabama*. Facsimile edition, Birmingham, AL: Book-Keepers Press, 1972; Barefield, Marilyn Davis. *A History of Hoover, Alabama and Its People*. Hoover, AL: Hoover Historical Society, 1992; Bennett, Jim. “Wilson’s Raid.” *Birmingham Historical Society Newsletter*, March/April 2015; Bhamwiki.com. “Bartholomew Boyle.” [http://www.bhamwiki.com/w/Bartholomew\\_Boyle](http://www.bhamwiki.com/w/Bartholomew_Boyle); Boyd, Gregory A. *Family Maps of Jefferson County, Alabama, Deluxe Edition*. Norman, OK: Arphax Publ. Co., 2007; Brock, Pinckney L. Oath of Allegiance, July 31, 1864; Burden, Greg. *Blount Springs: Alabama’s Fountain of Youth*. Blountsville, AL: Fifth Estate, 2014; “The Central Rail Road Company,” *Montgomery Mail*, Dec. 12, 1862; Civil War Service Records, Confederate Records. Fold3, <http://www.fold3.com>; *The Code of Ordinances of the City Council of Montgomery, with the Charter*, Montgomery City Council, 1875; Curren, Robert. Interviews by Marjorie White, March 2017; Curren, Sam. *The Stage Road to Montevallo*. Typescript, n.d., BHS Collection; Curtin, Mary Ellen. “Convict-Lease System,” <http://www.encyclopediainfofAlabama.org/article/h-1346>; *The Daily Confederation*, Jan. 7, 1859, Sept. 16, 1859; Duffee, Mary Gordon. *Sketches of Alabama*. Tuscaloosa, AL: University of Alabama Press, 1970; Dunham, Martha Ella Ross. Typescript, 1951, BHS Collection; Find a Grave, “Bartholomew Boyle” and “Richard Hamlin Kelly,” <https://www.findagrave.com>; Gilmer Jr., F. M., South & North Alabama Railroad Co., to Maj. F. W. Sims, Richmond, VA, Feb. 4, 1864, National Archives, transcribed at <http://www.csa-railroads.com>; “Historical Society Honors Birmingham’s First Hotel [The Relay House],” *L. & N. Magazine*, 1946; “The History of Ross Bridge,” Ross Bridge: A Classic American Resort Town, <http://www.rossbridge.com/2015/09/history-ross-bridge>; Jefferson County Deed Books 13 (May 22, 1861, p. 535), 14 (Oct. 10, 1862, p. 157; Jan. 31, 1863, p. 114; Mar. 21, 1863, p. 155), and 22 (Aug. 26, 1869), 506; Jefferson County Tract Book, Township 19 South Range 3 West (Mar. 3, 1871), 197–202; Lee, J. Lawrence. “Alabama Railroads,” [Encyclopedia of Alabama](http://www.encyclopediainfofAlabama.org/article/h-2390), <http://www.encyclopediainfofAlabama.org/article/h-2390>; Mabry, Sherri. “Civil War Structure Found in Parkwood,” *The Birmingham News*, n.d., c. 1980, from the collection of Robert Curren, copy in BHS Collection; Milner, John T. *Report to the Governor of Alabama on the Alabama Central Railroad*. Montgomery, AL: Advertiser Book and Job Steam Press Print, 1859; Moore, A. B. “Railroad Building in Alabama During the Reconstruction Period,” *The Journal of Southern History* 1, no. 4 (Nov. 1935); Rathfon, Dave. *The Story and History of the 1864 Stone Arch Culvert Railroad Bridge* (James Gage quote), <http://www.civilwaralbm.com/misc18/mckean1.htm>; “The South & North Alabama (or Central) Rail Road,” *Montgomery Mail*, Dec. 20, 1862; *Southern Confederacy* (Atlanta, GA), Apr. 18, 1861; U.S. Bureau of Land Management, General Land Office Records. Land Patent Search (Township 19 South, Range 3 West, Apr. 24, 1820); U.S. Federal Census, 1820, 1830, 1840, 1850, 1860, 1870, 1880, 1900, 1910; U.S. Selected Federal Census Non-Population Schedules, 1860, Carrollville [Carrollsville], Jefferson, AL, Schedule Type: Agriculture; U.S. Southern Claims Commission, Disallowed and Barred Claims, 1871–1880. National Archives, Washington, DC; Velasco, Eric. “Hidden History,” *The Birmingham News*, June 26, 2002; “Wanted to Hire 800 Negroes,” *Vicksburg Whig*, Jan. 13, 1863; “Wanted to Hire 600 Negroes,” *Selma Morning Reporter*, (Jan. 16, 1863), *Mobile Register* (Jan. 7, 1863, Jan. 10, 1863), *Daily Mississippian* (Jan. 24, 1864); *The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies*. Washington, DC: Government Printing Office, 1880–1901; Warren, Dorothea Orr. *The Practical Dreamer: A Story of John T. Milner, His Family and Forebears*. Birmingham, AL: Southern Family Press, 1959; White, J. S., to Military Store Keeper, Selma Arsenal, Dec. 12, 1863, National Archives, transcribed at <http://www.csa-railroads.com>; White, Marjorie L. *The Birmingham District: An Industrial History and Guide*. Birmingham, AL: Birmingham Historical Society, 1981; Woodward II, Joseph H. *Alabama Blast Furnaces*. Woodward, AL: Woodward Iron Co., 1940.