Form No. 10-300 (Rev. 10-74)

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

# NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

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SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

## 1 NAME

NOTE: This property is called "Sloss Blast Furnace Site" in the NR inventory. That is a misnomer.

HISTORIC
Sloss Blast Furnaces

AND/OR COMMON
Sloss Blast Furnaces

## 2 LOCATION

STREET & NUMBER
1st Avenue at 32d Street — NOT FOR PUBLICATION

CITY, TOWN
Birmingham — VICINITY OF

CONGRESSIONAL DISTRICT
6

| STATE | CODE | COUNTY | CODE |
|---|---|---|---|
| Alabama | 01 | Jefferson | 073 |

## 3 CLASSIFICATION

| CATEGORY | OWNERSHIP | STATUS | PRESENT USE | |
|---|---|---|---|---|
| __DISTRICT | X PUBLIC | __OCCUPIED | __AGRICULTURE | __MUSEUM |
| __BUILDING(S) | __PRIVATE | X UNOCCUPIED | __COMMERCIAL | __PARK |
| X STRUCTURE | __BOTH | __WORK IN PROGRESS | __EDUCATIONAL | __PRIVATE RESIDENCE |
| __SITE | **PUBLIC ACQUISITION** | **ACCESSIBLE** | __ENTERTAINMENT | __RELIGIOUS |
| __OBJECT | __IN PROCESS | __YES: RESTRICTED | __GOVERNMENT | __SCIENTIFIC |
| | __BEING CONSIDERED | __YES: UNRESTRICTED | __INDUSTRIAL | __TRANSPORTATION |
| | | __NO | __MILITARY | X OTHER: |

## 4 OWNER OF PROPERTY

NAME
City of Birmingham (David Vann, Mayor)

STREET & NUMBER
710 North 20th Street

CITY, TOWN
Birmingham, — VICINITY OF

STATE
Alabama

## 5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC.
Office of the County Clerk
Jefferson County Courthouse

STREET & NUMBER
716 North 21st Street

CITY, TOWN
Birmingham

STATE
Alabama

## 6 REPRESENTATION IN EXISTING SURVEYS

TITLE
National Register of Historic Places;
Historic American Engineering Record

DATE
1972; 1976 — X FEDERAL X STATE __COUNTY __LOCAL

DEPOSITORY FOR SURVEY RECORDS
National Register; Library of Congress

CITY, TOWN
Washington

STATE
D.C.

945

## 7 DESCRIPTION

| CONDITION | | CHECK ONE | CHECK ONE |
|---|---|---|---|
| _EXCELLENT | _DETERIORATED | _UNALTERED | X ORIGINAL SITE |
| _GOOD | _RUINS | X ALTERED | _MOVED DATE_____ |
| X FAIR | _UNEXPOSED | | |

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

Although they have been extensively reworked, the Sloss Furnaces are among the oldest extant blast furnaces in the Birmingham iron and steel district, the famous Oxmoor and Alice Furnaces having been demolished. When James Sloss left his partnership with De Bardeleben and Aldrich and started his own company in 1881 he engaged Harry Hargreaves, a Swiss-English immigrant and engineer, to supervise construction of the blast furnaces. The first, which measured 65 feet high and 16 feet wide at the bosh or widest point, was begun in 1881 and blown on April 12, 1882. The second, which measured 75 by 16 1/2 feet, was completed that same year, but due to a shortage of raw material it could not be blown until 1884. These units were of metal plate construction, and although they had to be filled by hand, they employed vertical elevators to move raw materials from supply bins below to filling platforms at the top. Each furnace had three Whitwell recuperating hot blast stoves. Hargreaves, a friend of English inventor Thomas Whitwell, had introduced these devices into the United States in the 1870's, and these at the Sloss complex were the first such units installed in the Birmingham area. Completing the plant were two huge metal-covered casting sheds where the molten iron was sand-cast into "pigs," two 84-inch blowing engines fed by 10 boilers, 242 beehive coke ovens, and a series of stock bins for raw materials.

During the early years of their operation and on into the 20th century, the Sloss Furnaces probably produced no more than 100 tons of iron per day. In contrast, some northern plants could turn out 300 to 400 tons. The Sloss output was limited in part by availability of raw materials, in part by the preference of local foundrymen for sand-cast iron which required more time to produce, and in part by lack of automation and resultant dependence upon the physical capacities of human loaders and iron carriers. Significantly, most of the loaders and carriers at the Sloss Furnaces were black. Loaders worked on platforms at the top of the furnaces and emptied elevator carloads of raw materials into the furnace according to a formula. This work was arduous and quite dangerous due to almost constant leakage of gas from the furnaces. The furnaces were also tapped by hand, and the heat was so intense that men working at the furnace notches had to be spelled every 2 or 3 minutes during the 10-to-15-minute notching or tapping process. Iron carriers performed probably the most laborious work, though. They formed channels in the sand floors of the huge casting sheds, and after the molten iron had been permitted to run through these channels into hundreds of sand molds and had cooled, the men used crowbars and sledge hammers to break off the iron bars or "pigs" which they then carried across the loose sand to waiting rail cars. Each bar weighed 100 to 115 lbs.

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# 8 SIGNIFICANCE

| PERIOD | AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW | | | | |
|---|---|---|---|---|---|
| __PREHISTORIC | __ARCHEOLOGY-PREHISTORIC | __COMMUNITY PLANNING | __LANDSCAPE ARCHITECTURE | __RELIGION | |
| __1400-1499 | __ARCHEOLOGY-HISTORIC | __CONSERVATION | __LAW | __SCIENCE | |
| __1500-1599 | __AGRICULTURE | __ECONOMICS | __LITERATURE | __SCULPTURE | |
| __1600-1699 | __ARCHITECTURE | __EDUCATION | __MILITARY | __SOCIAL/HUMANITARIAN | |
| __1700-1799 | __ART | X ENGINEERING | __MUSIC | __THEATER | |
| X 1800-1899 | __COMMERCE | __EXPLORATION/SETTLEMENT | __PHILOSOPHY | __TRANSPORTATION | |
| X 1900- | __COMMUNICATIONS | X INDUSTRY | __POLITICS/GOVERNMENT | __OTHER (SPECIFY) | |
| | | __INVENTION | | | |

SPECIFIC DATES 1881-1970

BUILDER/ARCHITECT James W. Sloss, Harry Hargreaves, James P. Dovel

STATEMENT OF SIGNIFICANCE

The national importance of the Sloss Blast Furnaces is multifaceted. The structures are, first, outstandingly symbolic of post-Civil War efforts to industrialize the South and of the intense economic competition that existed between the predominantly agrarian section and the already industrialized North. Noted southern industrialist James Withers Sloss erected the original furnaces on this site in 1881-82, and just 2 years later, says distinguished scholar C. Vann Woodward, "during the depression of 1884 and 1885 Southern iron made its first successful invasion . . . into the Northeastern market. This precipitated a hard-fought struggle for sectional dominance in the iron industry that was almost as much discussed as that between Northern and Southern cotton mills."[1] This competition manifest itself particularly in regional freight-rate differentials and in the "Pittsburgh Plus" basing point pricing system which in the early 20th century, says economic historian George W. Stocking, "tended to retard the South's production and consumption of iron and steel and thus directly and indirectly retarded the South's industrialization."[2] This industrial retardation was subsequently reflected in the continued regionalistic character of national social and economic development.

Second, the Sloss Furnaces are especially representative of Alabama's early-20th-century preeminence in pig iron and cast-iron pipe production and, according to Historic American Engineering Record historian Gary B. Kulik, indicative of "the pace and extent of technological change in the Southern pig iron industry."[3] From the time they were initially fired until

(continued)

[1]C. Vann Woodward, Origins of the New South, 1877-1913 (Baton Rouge, 1951), 127.

[2]George W. Stocking, Basing Point Pricing and Regional Development: A Case Study of the Iron and Steel Industry (Chapel Hill, 1954), 62.

[3]Gary B. Kulik, "Birmingham: Old Iron Furnaces Still Central Element of Industrial City's Skyline," American Preservation, I (February-March, 1978), 22.

## 9 MAJOR BIBLIOGRAPHICAL REFERENCES

(See continuation sheets.)

## 10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY ca. 16 1/2 acres

UTM REFERENCES

| | ZONE | EASTING | NORTHING |
|---|---|---|---|
| A | 16 | 519600 | 3709000 |
| B | 16 | 519060 | 3708800 |
| C | 16 | 519140 | 3708570 |
| D | 16 | 519060 | 3708720 |

VERBAL BOUNDARY DESCRIPTION

(See last page of description.)

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

| STATE | CODE | COUNTY | CODE |
|---|---|---|---|
| STATE | CODE | COUNTY | CODE |

## 11 FORM PREPARED BY

NAME / TITLE

George R. Adams, Director, Historic Landmarks Project

ORGANIZATION — DATE

American Association for State and Local History — April 1978

STREET & NUMBER — TELEPHONE

1400 Eighth Avenue South — 615/242-5583

CITY OR TOWN — STATE

Nashville — Tennessee 37203

## 12 STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:

NATIONAL ___ STATE ___ LOCAL ___

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

STATE HISTORIC PRESERVATION OFFICER SIGNATURE

TITLE — DATE

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DATE

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

ATTEST: DATE

KEEPER OF THE NATIONAL REGISTER

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Before Sloss sold the furnaces he added four more blowing engines. President Maben made the next significant changes in the mid 1890's, rebuilding the number one furnace and adding two more two-pass stoves to the six already in place. Then in 1902 he erected a brick blowing-engine house, installed three new Allis-Chalmers blowing engines, and added more stoves, bringing the total to five per furnace. In 1904 he rebuilt the number two furnace and added a new casting shed.

No additional changes were made until 1921. In that year Sloss-Sheffield made its first response to the dwindling labor supply by installing a mechanical pig breaker. Such devices had been available since the 1890's, and this one, designed by furnace manager James P. Doval, was simply a modification of earlier technology. Continuing concern about the labor supply spurred the company to rebuild, upgrade, and fully mechanize both furnaces between 1927 and 1931. As reconstructed by Dovel, the new furnaces measured 84 by 21 feet and incorporated an improved hearth and bosh jacket, a modified cooling system, new interior lines with fewer bricks, a McKee automatic top, and an inclined skip hoist for mechanical loading or charging. The latter system utilized a 747-foot-long concrete charging tunnel set below new stock bins. This system was completed in 1927. Dovel also patented and installed a gas washer and heat recuperator during the modernization process. Finally, in January 1931 the company installed a Heyl & Patterson single-strand pig-casting machine. Ironically it was based on a design that Edward A. Uehling had developed while serving as furnace superintendent as the Sloss plant in the 1890's. His superiors had declined to use the invention at that time, however, and Uehling had sold it to Andrew Carnegie who utlized it first at his famous Edgar Thompson plant.

According to the HAER inventory, today the Sloss Furnace complex strongly reflects these 1927-31 changes which are in many respects indicative of the iron and steel technology of the 1890's. Many of the early structures are still in place, including the 3 1/2-story, red brick, gable-roofed, blowing-engine building of 1902. It still houses two of its original Allis Chalmers engines as well as six others built about 1900 and installed second-hand at the Sloss site in the 1920's.

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"They represent," says Kulik, "the first type of modern blowing engine used on a large scale by coke-fueled metal plate blast furnaces."[20] Other extant buildings include a three-story, flat-roofed, red brick powerhouse (ca. 1929) with some early equipment; a one-story, hip-roofed, red brick bathhouse; and a one-story, gable-roofed, red brick air conditioning building, also with some early machinery. Both furnaces are extant. They have been refitted, but their basic structure remains much as it was in 1927-31. The skip hoists, Otis elevators, gas cleaners, stock bins, charging tunnel, and Carey-Hedges boilers also remain. The foundation of the pig-casting machine is still in place, but the machine itself was sold in 1975. The recuperators are also gone, having been dismantled in 1956. Rust boilers remain from early in this century, as do the plant stoves, but the latter have been rebuilt so many times that they reflect no particular period. The coke ovens were dismantled or covered over many years ago. In 1976 the Historic American Engineering Record measured, photographed, and described the Sloss complex in detail. Other descriptive information is available in that report. The property was conveyed to the city of Birmingham in 1977, and voters have approved a bond issue to finance conversion of the complex into an industrial museum.

Boundary Justification. The boundary of the inventoried property follows closely the original boundary of the Sloss property on the west and south sides and coincides on three sides with the present boundary of the city-owned furnace property. Within the boundary are all extant furnace-related structures.

Boundary Description. As indicated in red on the accompanying maps [(1) U.S.G.S. 7.5' Series, Alabama, Birmingham North Quad., 1959, photorevised 1970; and (2) AASLH Sketch Map, 1978] and described in the Jefferson County, Ala., Statutory Warranty Deed for the property:

"A parcel of land lying South of First Avenue North, East of 28th Street, West of 32nd Street and North of what is known as the general or common railroad right-of-way; except that

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[20] Kulik, "The Sloss Furnace Company," 40.

part in Northwest corner, lying Northwest of the Southeast boundary line of the Louisville & Nashville Railroad right-of-way and except that part in Southwest corner lying Southwest of the Northeast boundary line of the Southern Railroad right-of-way."

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Stocking, George W., Basing Point Pricing and Regional Development: A Case Study of the Iron and Steel Industry (Chapel Hill: The University of North Caroling Press, 1954).

Taylor, Harrison A., "James Withers Sloss," in Dumas Malone (ed.), Dictionary of American Biography, Vol IX, Part I (New York: Charles Scribner's Sons, 1965).

Wesley, Charles H., Negro Labor in the United States, 1850-1925: A Study in American Economic History (New York: Vanguard Press, 1927).

Woodward, C. Vann, Origins of the New South, 1877-1913 (Baton Rouge: Louisiana State University Press, 1951).

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they were last tapped in 1970, the Sloss furnaces produced nothing but pig iron, and for years the Sloss-Sheffield Steel and Iron Company, which operated the furnaces after 1899, ranked as one of the chief pig iron makers in the South. In fact, according to iron-and-steel industry historian H. H. Chapman, "in 1898, Birmingham was said to be the third largest point of export of pig iron in the world."[4] Gradually a surplus of pig iron in the region encouraged the establishment of a number of cast-iron pipe companies, and by 1939, says Stocking, the city was the cast iron pipe center of the United States."[5] Interestingly, during most of this period of growth, operation of the Sloss furnaces was based on technology outdated since the turn-of-the-century. The Sloss-Sheffield Company was slow to modernize the facility because pig iron production did not require extensive mechanization so long as sufficient labor was available and willing to perform the arduous work of hand-filling and hand-tapping the furnaces and sand-casting the iron.

Most of this work was performed by blacks, and therein lies the third facet of the property's significance. The experience of these laborers at the Sloss Furnaces typifies that of many blacks in the postbellum South. "At the end of the Civil War," says Woodward, "Negro artisans are said to have outnumbered white by five to one," yet "they made up only a small proportion of the labor force in most crafts by 1890."[6] By then most blacks were following agricultural pursuits. Over the next 20 years, however, employment of unskilled black workers in nonagricultural endeavors increased by two-thirds. The timber and lumber industry claimed more of these than any other activity, and next came the iron and steel industry. This is noteworthy both because of the menial nature of most of the work and because before the war slaves had been the chief labor force at most Upper South ironworks. In the North, say historians of black labor, Sterling Spero and Abram L. Harris, "until the World War the principal source" of cheap labor for iron and steel mills "was the foreign immigrant. In the South it was the Negro."[7] According to the Immigration Commission, in 1907

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[4]H. H. Chapman, The Iron and Steel Industries of the South (University, Ala., 1953), 108.

[5]Stocking, Basing Point Pricing and Regional Development, 103.

[6]Woodward, Origins of the New South, 360.

[7]Sterling Spero and Abram L. Harris, The Black Worker: The Negro and the Labor Movement (New York, 1931), 246.

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almost 40 percent of all southern iron and steel workers were black.

Physically the Sloss complex today reflects major changes that were made in the late 1920's but which represent the technology of the 1890's. On approximately 16 1/2 acres of the original site are the 1902 blowing-engine house with two original 1902 Allis Chalmers blowing engines, the two Sloss Furnaces as modified in 1927-31, the 1927 storage bin and charging tunnel system, and numerous other structures. Idle only since 1970, the complex is presently owned by the city of Birmingham which is in the process of converting it into an industrial museum.

## History

Ironmaking in the Southeast dates at least from the 1790's when blacksmiths and mechanics operated bloomeries, foundries, and forges in a number of locations in Georgia, Tennessee, and the Carolinas. Despite this early start, however, the region made comparatively little progress in the industry prior to the Civil War. In 1860 the Southeast was producing only about 25 percent of the Nation's bar, sheet, and railroad iron and about 8 percent of its pig iron. The war spurred a boom in southern ironmaking, though, as gun forging works and arsenals were erected throughout the region. Eventually Federal troops destroyed nearly all these facilities, but not before the Red Mountain Iron Company built its famous Oxmoor plant in 1862 and made the first effort to utilize Alabama red hemitite ore in quantity. After the war southerners attempted to revive the iron industry, and eventually it became a major focal point for exponents of an industrialized "New South."

As a result of these promotional efforts and the continued use of red hemitite in addition to brown limonite ore, substitution of coke for coal in blast furnaces, and exploitation of large deposits of coking coal in Tennessee and Alabama, a significant pig iron industry gradually developed in those two States. The first coke-fired southern pig iron was produced

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at Rockwood, Tenn., in 1867, and for the next few years nearby Chattanooga reigned as the South's chief ironmaking center. Birmingham, founded in 1871, eventually took the lead, however, and held it. Transplanted New Hampshire industrialist Daniel Pratt and native Alabamian James Sloss were two of the key figures in the Alabama city's growth, and according to HAER historian Kulik, the furnaces that Sloss built "repeat in miniature the major themes of Birmingham's economic history from 1880 to 1930: rapid but unstable growth, increasing reliance on Northern capital, arcifically high transport costs and the slow development of regional markets, the strengths and limits of the area's mineral base and the existence of an independent, and at times unruly, working class."[8]

These themes were reflected in part in the city's efforts to rival Pittsburgh in steel production. Birmingham was frustrated on a number of fronts. The State's iron ores contained too much phosphorus for satisfactory use in standard Bessemer furnaces and too little for use in modified "basic" Bessemer furnaces; the South had too little scrap metal for combining with pig iron in open-hearth furnaces to make cheap steel; and artifically high freight rates hindered the development of strong regional markets for the steel that was produced. In spite of these hindrances, though, Birmingham did manage to become a major international center for the manufacture of pig iron and an important American center for the production of cast-iron pipe. Because the high phosphorus content of southern pig iron restricted its marketability in American markets outside the South, Birmingham producers turned to foreign markets in the 1890's and began shipping large quantities of surplus pig iron to Japan, Mexico, Canada, Germany, Holland, and other countries. By 1898, says Chapman, "Birmingham was said to be the third largest point of export of pig iron of the world--Middlesborough, England, being the first, and Glasgow, Scotland, second."[9] Because this southern pig iron was a satisfactory foundry iron, because the Nation's growing urban area demanded increased supplies of cast-iron pressure and soil pipe for

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[8]Kulik, "Birmingham," 22.

[9]Chapman, The Iron and Steel Industries of the South, 108.



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water and sewer lines, and because both pig iron and cast-iron pipe enjoyed relatively low freight rates, southern entrepreneurs found cast-iron pipe manufacture a profitable way to utilize southern pig iron. Rapid expansion of the pipe industry began in 1883, and "from 1900 to 1914," says Chapman, "almost the entire growth of the industry took place in the South, with Alabama leading as the center of development."[10] Of 12 new plants erected in the United States in those years, 7 were in Alabama. By 1939 the State was producing "almost 50 percent of the nation's output," says Stocking, and "Birmingham" had "become the cast iron pipe center of the United States."[11] Throughout this period the Sloss-Sheffield Steel and Iron Company--operator of the Sloss Furnaces after 1899--was one of the two chief southern suppliers of pig iron for pipe manufacture, and so the furnaces stand as monuments to both the pig iron and the cast-iron pipe industries and to the conditions that favored their development.

Probably the most widely publicized difficulties that the southern steel industry faced in trying to catch Pittsburgh and the North, or for that matter in trying to achieve as much national importance as the southern pig iron industry, were the system of regional freight-rate differentals and the "Pittsburgh Plus" basing point pricing system. The regional freight-rate system, adopted in the 1870's and 1880's by private railway associations and sanctioned by the Interstate Commerce Commission in 1887, incorporated traditionally higher southern rates and classifications and thereby handicapped southern manufacturers of numerous products in their efforts to compete successfully with northern producers. The "Pittsburgh Plus" basing point pricing system compounded this problem for southern steel makers. Originated in 1900 by the National Tube Corporation (later a subsidiary of United States Steel) and quickly adopted by other northern steel producers, "Pittsburgh Plus" was designed to keep primary steel prices stable or, as Stockman puts it, to insure "identical pricing by business rivals."[12]

(continued)

[10] Ibid.

[11] Stocking, Basing Point Pricing and Regional Development, 103.

[12] Ibid., 51.

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Generally the system provided that any steel manufacturer who delivered primary steel to a given destination sold it for a standard price--after 1903 this was usually a figure dictated by United States Steel--plus a freight charge roughly equivalent to railroad freight from Pittsburgh to that destination. "Pittsburgh Plus prices permitted plants in and near Pittsburgh," Stockman explains, "to sell in remote areas closer to other plants without the necessity of absorbing freight."[13] This enabled Pittsburgh firms to compete effectively with Birmingham firms in the South and prevented Birmingham firms from competing effectively with Pittsburgh firms in the North. Moreover, since steel product fabricators could buy primary steel cheaper in Pittsburgh than in the South, those companies usually located in the North. These factors, says Stocking, "tended to retard the South's production and consumption of iron and steel and thus directly and indirectly retarded the South's industrialization."[14]

Because the Sloss Furnaces site dates to 1881-82 and its history parallels the history of these rate and price systems, it is an outstanding symbol of both the restrictions that they placed on southern industrial development and of the long-standing efforts of southerners to overturn them. In fact, says Kulik, between 1910 and 1920 "Sloss-Sheffield became a leader in the effort to restructure freight rates. Along with other Alabama and some Tennessee iron companies, they initiated a case before the Interstate Commerce Commission on 7 November 1912. The companies argued that current rates discriminated against the South. The ICC decided in their favor on 7 July 1914 and rates were reduced anywhere from 35 cents to 75 cents per ton . . . . the company took advantage of the new rates and continued its efforts to market iron in the North. In 1920, they were selling enough in the North to justify the establishment of a permanent pig iron storage yard on the municipal wharf in Providence, Rhode Island."[15]

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[13] Ibid., 61

[14] Ibid., 62.

[15] Gary B. Kulik, "The Sloss Furnace Company, 1881-1951: Technological Change in the Southern Pig Iron Industry." Mimeographed Report for the Historic American Engineering Record, Birmingham, 1976, 22.

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The builder of the original furnaces on the historic Sloss site, James Withers Sloss, had been involved in industrial pursuits long before he entered the ironmaking business. Born to Irish parents at Mooresville, in Limestone County, Ala., on April 7, 1820, Sloss received a limited education but possessed enough business acumen at age 15 to get a job keeping books for a butcher. In 1842 Sloss opened his own business, a mercantile store, in Athens, Ala., and by the 1850's he had retail establishments scattered all over northern Alabama. He also bought a number of plantations and invested in railroads. After the Civil War he combined a number of short rail lines to form the Nashville and Decatur Railroad, and a short time later he made it a leg of the Louisville and Nashville which then extended the tracks south to Birmingham. "At a critical point in 1871, when it appeared that the line would not be completed," says Kulik, "Sloss helped to convince the Louisville & Nashville Railroad to provide capital, assume responsibility for the road, and to complete the final 67 miles," and then, "with the railroad forming the key transportation link, large-scale development of coal and iron became possible."[16]

In 1873, in the middle of an economic depression, Sloss participated in the formation of the Cooperative Experimental Coke and Iron Company and supervised efforts to produce coke-fueled iron in the old Red Mountain Oxmoor Furnace which Daniel Pratt had rebuilt in 1872. These efforts eventually proved successful, and in 1878 Sloss joined Truman H. Aldrich and Henry Fairchild De Bardeleben in establishing the Pratt Coal & Coke Company, which Sloss's biographer, Harrison A. Taylor, describes as "the first big concern organized in the Birmingham district."[17] Within 4 years eight other coal, coke, iron, and furnace companies were launched in the district.

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[16] Ibid., 22.

[17] Harrison A. Taylor, "James Withers Sloss," in Dumas Malone (ed.), Dictionary of American Biography, Vol. IX, Part 1 (New York, 1935), 219.

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Encouraged by these developments and the high demand for pig iron, Sloss decided in 1881 to form his own company to produce it. De Bardeleben offered him Pratt Company coal at cost plus 10 percent for 5 years, and the Louisville and Nashville Railroad lent capital support. In fact, L & N official B. F. Guthrie became vice-president of the new firm, which was named the Sloss Furnace Company. Sloss purchased 50 acres on the northern edge of Birmingham, and immediately work began on the furnaces under the supervision of Harry Hargreaves, a Swiss-English immigrant and associate of recuperating hot blast stove inventor Thomas Whitwell. The first furnace was blown on April 12, 1882, but due to a shortage of coke, the second was not activated until 1884. Sloss had bought two limestone quarries and two small iron ore mines, but despite those holdings and his arrangement with De Bardeleben, he still had to depend on other companies for most of his raw materials.

In 1886 Sloss decided to retire and gave options to buy the company to John W. Johnson, president of the Georgia Pacific Railroad, and Forney Johnston, president of the Alabama National Bank and later Alabama Governor and U.S. Senator. Short of funds, they turned to Wall Street financier J. C. Maben who raised $3 million to complete the transaction. Early in 1887 the new partners reorganized the firm as the Sloss Iron and Steel Company. Johnston was named president, but due to company financial pressures he quit after only 1 year in favor of a career in politics. He was replaced by Thomas O. Sedden who served until his death in 1896. In quick succession the reorganized company built two more furnaces (now demolished), bought extensive coal lands, acquired the Coalburg Coal and Coke Company, and built 300 new coke ovens on its grounds. This effort at vertical integration, carried out by unskilled managers, caused innumerable financial difficulties for the company, but it weathered them.

The firm also survived the depression of 1893, and following the war boom of 1898 it launched a new program of expansion. In the late nineties Sloss Iron and Steel bought three more furnaces, 20,000 acres of brown ore land, 20,000 acres of coal land, and 12 smaller companies. Now second in size in the South only to Tennessee Iron and Coal (which was soon to become a subsidiary of United States Steel), the company reorganized again in 1899 as the Sloss-Sheffield Steel and Iron Company, and in 1902 Maben became president. During his 15 years as chief executive



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officer, the company's "city" or Sloss Furnaces were upgraded somewhat, and the company enjoyed a reputation as one of the two biggest producers of pig iron in the South.

After 1920 Sloss-Sheffield suffered through another period of financial difficulty due in part to side effects of "Pittsburgh Plus" basing point pricing of primary steel and in larger measure to the slowness with which the company adapted to technological changes in the industry. The need for greater mechanization finally prompted a major overhaul of the company's "city" furnace site in the 1920's. These changes enabled Sloss-Sheffield to continue to operate effectively and contribute to the Birmingham district's still sizeable cast-iron pipe industry. In 1952 the United States Pipe and Foundry Company acquired the Sloss Furnaces and kept them in operation until 1970.

One of the principal reasons behind the modernization program at the Sloss Furnaces in the 1920's reveals yet another aspect of the site's national significance. From 1882, when James Sloss fired the first furnace on the site, until the 1920's, when large numbers of southern Negroes migrated to the North, most of the laborers at the Sloss Furnaces were black. Their work experience typifies that of many blacks in both the ante-bellum and postbellum South. Before the Civil War slaves provided most of the labor for ironworks throughout the Upper South, and after the war free blacks filled most of the unskilled positions in the region's new iron and steel plants. The latter work experience is reflective of the postwar division of labor between white men's jobs and black men's jobs. "At the end of the Civil War," says Woodward, "Negro artisans are said to have outnumbered white by five to one," yet blacks "made up only a small proportion of the labor force in most crafts by 1890."[18] By then most blacks were following agricultural pursuits. Over the next 20 years employment of unskilled blacks in nonagricultural jobs increased by two-thirds. The timber and lumber industry claimed the highest percentage of these workers, and the iron and steel industry accomodated the second largest number. In fact, say historians of black labor, Spero and Harris, "until the World War the principal source" of cheap labor for iron and steel mills in the North "was the foreign immigrant. In the South it was the Negro."[19] This assertion is supported

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[18]Woodward, Origins of the New South, 360.

[19]Spero and Harris, The Black Worker, 246.



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by Immigration Commission statistics which show that in 1907 almost 40 percent of all southern iron and steel workers, skilled or unskilled, were black. Kulik estimates that blacks made up 65 percent of the Birmingham iron and steel work force in 1900 and 75 percent in 1910.

Unskilled workers were particularly suited for a pig iron operation like that at the Sloss Furnaces, where probably no more than 100 tons of iron were produced per day and all of it was cast in sand. Before James Sloss sold the furnaces, he employed as many as 565 black men at one time and housed some of them in 48 tenements (now demolished) that he constructed nearby. As long as blacks were available in sufficient numbers and willing to work at such backbreaking jobs as filling and tapping the furnaces, casting the molten iron in hand-banked sand molds, and removing and loading the castings onto rail cars, Sloss and the owners that followed him saw no reason to adopt labor-saving technological advances utilized in northern pig iron plants. Only after the mass migration of southern blacks to the North in the 1920's did Sloss-Sheffield modernize the Birmingham facility, installing a pig iron breaker and a pig casting machine and upgrading the furnaces. Thus, while the machinery that remains at the Sloss Furnaces today was put in place largely between 1927 and 1931, it is indicative of technology and equipment which first became available in the 1890's and 1910's, and it is a monument to the important relationship between the availability of black labor and the pace of technological change in the Southern iron and steel industry.

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UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

# NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

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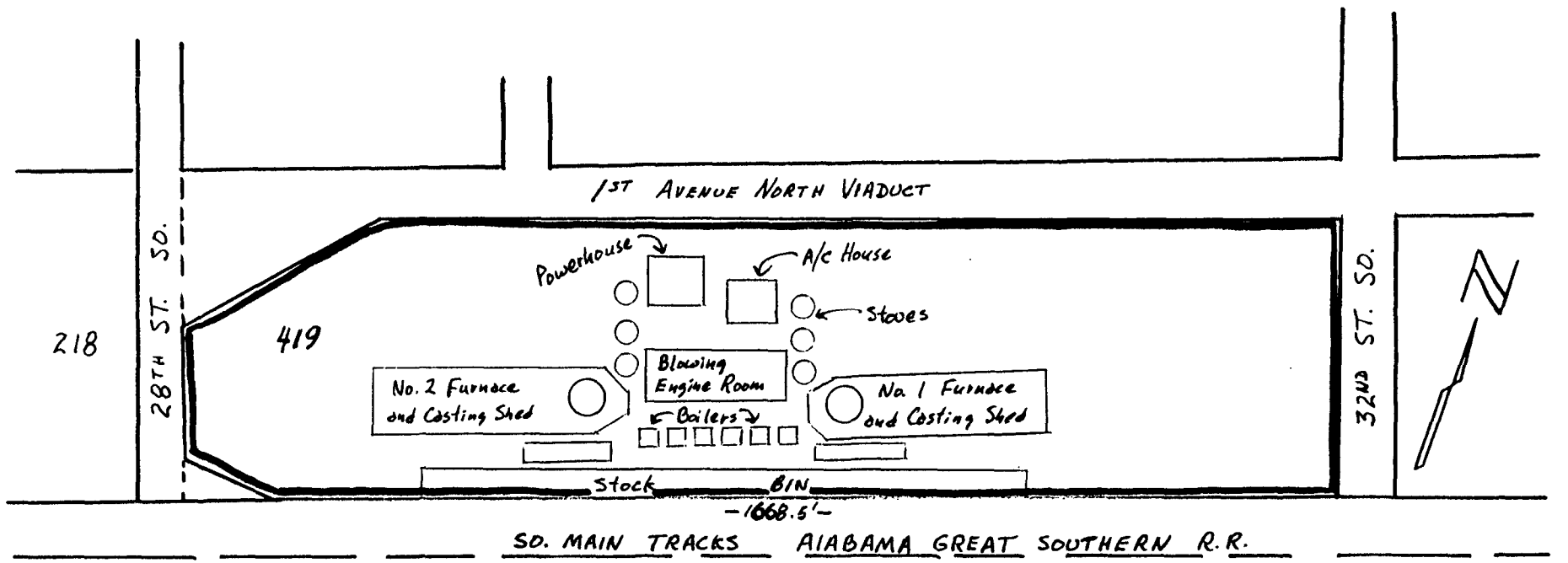


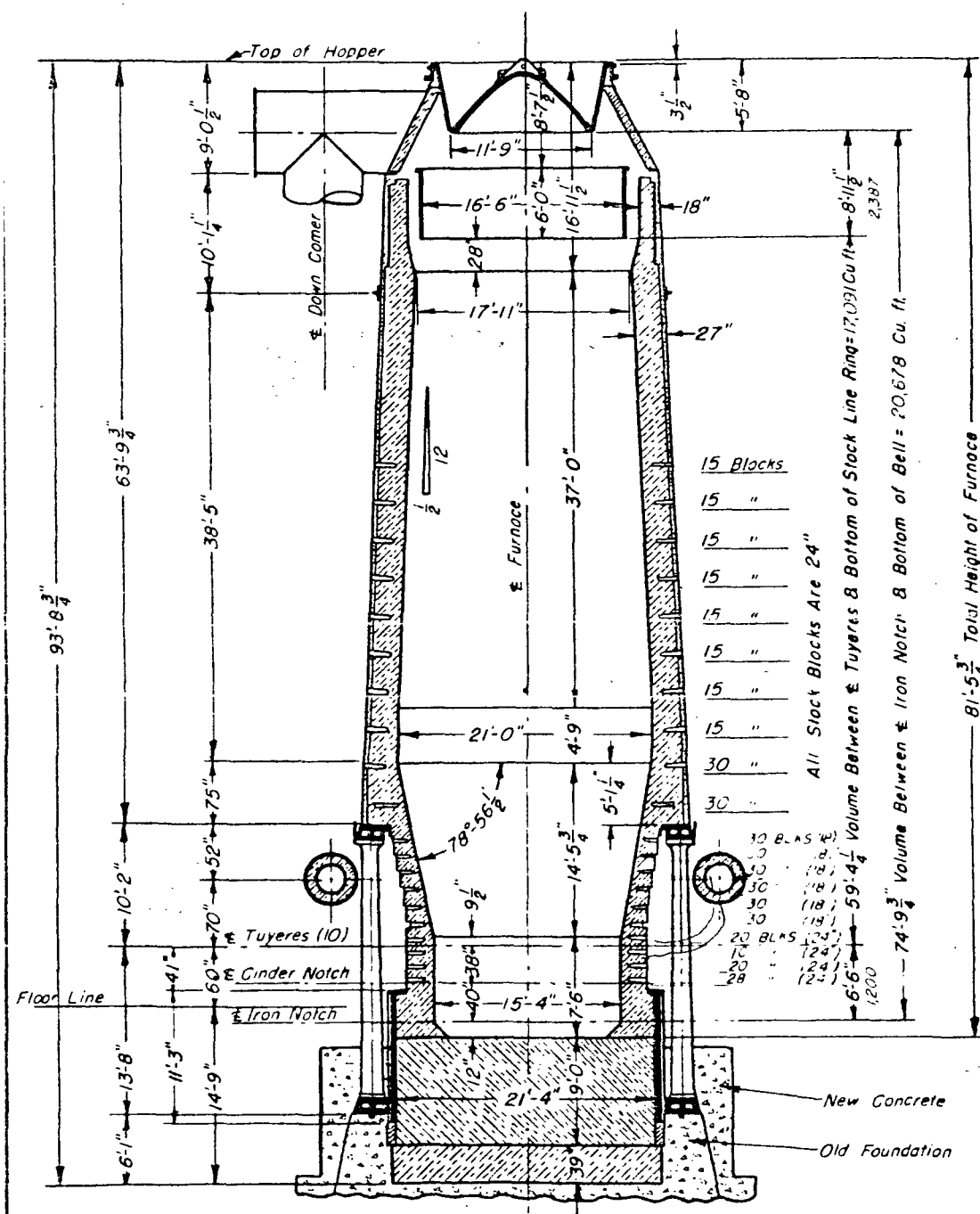

# SLOSS BLAST FURNACES

Birmingham, Alabama

Prepared by:
G.R. Adams
AASLH
4-78
(Not to scale)

# SLOSS-SHEFFIELD STEEL & IRON CO.

ENGINEERING DEPT. BIRMINGHAM, ALA.

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| DR. Langston | SCALE 3/32" = 12" | SUBJECT | Nº 2 FURNACE — CITY F'CES |
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