

VLR 3/7/7  
NHP 4/27/7

United States Department of the Interior  
National Park Service

### NATIONAL REGISTER OF HISTORIC PLACES REGISTRATION FORM

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in How to Complete the National Register of Historic Places Registration Form (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

#### 1. Name of Property

historic name: Richmond Locomotive & Machine Works  
other names/site number: American Locomotive Company, Richmond Works, DHR #127-6188

#### 2. Location

street & number 1331 North Boulevard not for publication N/A  
city or town City of Richmond vicinity N/A  
state Virginia code VA county Independent City code 760 Zip 23230

#### 3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, as amended, I hereby certify that this X nomination    request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property X meets    does not meet the National Register Criteria. I recommend that this property be considered significant    nationally    statewide X locally. (    See continuation sheet for additional comments )

[Signature] 3/5/07  
Signature of certifying official Date  
Virginia Department of Historic Resources  
State or Federal agency and bureau

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

   Signature of commenting or other official Date  
   State or Federal agency and bureau

#### 4. National Park Service Certification

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

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Richmond, Virginia**

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**5. Classification**

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

- private  
 public-local  
 public-State  
 public-Federal

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

- building(s)  
 district  
 site  
 structure  
 object

**Number of Resources within Property**

Contributing	Noncontributing	
<u>2</u>	<u>1</u>	buildings
<u>0</u>	<u>0</u>	sites
<u>0</u>	<u>0</u>	structures
<u>0</u>	<u>0</u>	objects
<u>2</u>	<u>1</u>	Total

Number of contributing resources previously listed in the National Register: 0

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

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**6. Function or Use**

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

Cat: **Industry /Processing / Extraction** Sub: **Manufacturing Facility (Locomotive Manufacturing Plant)**

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

Cat: **Industry /Processing / Extraction** Sub: **Manufacturing Facility (Steep Fabrication)**

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**7. Description**

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

Classical Revival

**Materials** (Enter categories from instructions)

Foundation: Brick

Roof: Metal

Walls: Steel Frame / Brick infill

Other: \_\_\_\_\_

**Narrative Description** (Describe the historic and current condition of the property on one or more continuation sheets.)

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### 8. Statement of Significance

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**Applicable National Register Criteria** (Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

- A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B Property is associated with the lives of persons significant in our past.
- C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D Property has yielded, or is likely to yield information important in prehistory or history.

**Criteria Considerations** (Mark "X" in all the boxes that apply.)

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

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**Areas of Significance:** Architecture; Industrial History

**Period of Significance:** ca. 1887 – 1949 (end of plant use for parts)

**Significant Dates:** ca. 1887 (construction); 1917 (significant additions)

**Significant Person** (Complete if Criterion B is marked above): NA

**Cultural Affiliation:** NA

**Architect/Builder:** \_\_\_\_\_

**Narrative Statement of Significance** (Explain the significance of the property on one or more continuation sheets.)

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### 9. Major Bibliographical References

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**Bibliography**

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

**Previous documentation on file** (NPS)

- preliminary determination of individual listing (36 CFR 67) has been requested.
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # \_\_\_\_\_
- recorded by Historic American Engineering Record # \_\_\_\_\_

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**Primary Location of Additional Data**

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

Name of repository: Library of Virginia; Virginia department of Historic Resources

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**10. Geographical Data**

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**Acreege of Property: 4.13 acres**

**UTM References** (Place additional UTM references on a continuation sheet)

USGS Richmond Quad

A: 18 282137E/4160605N B: 18 282252E/4160407N C: 18 282211E/4160246N D: 18 282013E/4160361N

**Verbal Boundary Description** (Describe the boundaries of the property on a continuation sheet.)

**Boundary Justification** (Explain why the boundaries were selected on a continuation sheet.)

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**11. Form Prepared By**

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name/title: Bryan Clark Green, Architectural Historian

Organization: Commonwealth Architects date: 30 November 2006

street & number: 101 Shockoe Slip, 3<sup>rd</sup> Floor telephone: 804.648.5040 x135

city or town: Richmond state: VA zip code: 23219

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**Additional Documentation**

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Submit the following items with the completed form:

**Continuation Sheets**

**Maps** A USGS map (7.5 or 15 minute series) indicating the property's location.

A sketch map for historic districts and properties having large acreage or numerous resources.

**Photographs** Representative black and white photographs of the property.

**Additional items** (Check with the SHPO or FPO for any additional items)

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**Property Owner**

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

name: Mr. Charley Moss

street & number: Bow Tie Partners, 1530 Broadway telephone: (212) 764-7000

city or town: New York state: NY zip code: 10036

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

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

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**7. Summary Description:**

**Summary**

The Richmond Locomotive Works, occupying the corner of Boulevard and Leigh Streets in the City of Richmond, includes two buildings: an Iron Foundry, in use by 1887 and expanded in 1917, and a Brass Foundry, constructed in 1922. Both structures are steel framed, with masonry walls. The Iron Foundry includes a wood-framed addition and is currently clad in corrugated metal. A spur line, originally used for transportation of materials and finished engines, crosses the site. It remains in use, bringing trains to the Richmond Science Museum for special events. One noncontributing building (the Richmond Recycling Center, constructed in 1990) shares the site, but is not historically associated with the Locomotive Works.

**Detailed Description**

Architectural Resources

Two historic buildings survive on the site: the Iron Foundry, the larger of the two buildings, located along the western boundary of the site, and the Brass Foundry, located at the eastern edge of the site. Construction of the Iron Foundry – which took place in multiple phases – began in the mid 1880s, and the building was in service by 1887 when the first locomotive was completed. Portions of the Iron Foundry were in place by the time the 1908 Sanborn Fire Insurance map was created.

Iron Foundry

A maintenance shop and iron foundry were probably among the first buildings constructed on the site. They were probably constructed before 1907, when the City of Richmond began its building permit program, and were certainly in place by 1917 when a large nine-bay steel-framed iron foundry was constructed between them (the 1917 permit makes reference to an existing machine shop and foundry.) The original maintenance shop and iron foundry were each 100 feet long, and were constructed 180 feet apart, with the intention that they would be connected at a later date; this occurred in 1917. The preexisting end wall remains visible at the north end of the iron foundry addition. A small brick brass foundry existed between the maintenance shop and original iron foundry, and was removed during the 1917 connection of the two buildings; a new and larger brass foundry was constructed on the eastern edge of the site in 1922. An additional

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100-foot extension was later made to the north end of the combined iron foundry, creating a building 480 feet long.

The Iron Foundry building is approximately 100 feet wide by 480 feet long. The northernmost 100 feet of the building length is an addition to the original building. The building width is broken into a center area, which has a 30-foot clear height to the roof structure, and areas with a lower shed roof on each side. The center area is approximately 50 feet wide and the two shed roof areas are each 25 feet wide. The roof structure is supported on columns on each side of the center area, spaced at approximately 20 feet on center for the length of the building. The original building structure is steel frame with masonry bearing walls at the exterior. The shed roofs of the addition are wood framed and bear on a steel beam at the center area and on the exterior masonry wall. Rails for the overhead crane are original to the building, although the cranes themselves have been replaced several times. Other original machinery was replaced through time as the building was adapted for various uses, as may be expected in any manufacturing plant with a long history of service.

The exterior, as constructed, was built of brick but punctuated throughout its two tall stories with a large number of windows, organized into clear vertical bays. The west elevation of the building is covered with corrugated metal, but the window openings (sealed) can be read from the interior. As of January 2007, the corrugated metal has been removed and the original brick elevation with enclosed fenestrations can be read from the exterior as well. The east elevation has been painted with several layers of paint, the window openings sealed, many new wide openings cut, and some recent shed additions added, but the original fenestration pattern of both elevations can be clearly read in the existing masonry walls.

The architectural integrity of the interior of the building is high. The industrial character of the building is readily apparent, and the surviving architectural features, as well as the volume of the foundry, can be clearly read, rendering this an industrial building with significant retention of character-defining spaces and features.

The Brass Foundry

The Brass Foundry, built in 1922, survives in very good state of architectural integrity, both on the exterior and on the interior. The brick building measures approximately 160 feet by 50 feet, divided internally into two portions. The structure features stepped gable ends, and consists of gable steel roof trusses at about 16 feet on center, supporting steel channel purlins. The trusses clear span the width of the building. The building had a poured concrete floor, as per the 1922

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specifications. The building was built of brick “reclaimed from the old Power House building,” and the steel trusses were “made and erected by the owner.”<sup>1</sup>

The building is seven bays wide, with wide window and door bays in each long elevation. These openings are clearly visible in the surviving building fabric. Four large ventilator hoods originally pierced the roof; these no longer survive. A wire partition separated the building into two portions. The largest portion, 50 feet 10 ¼ inches internally, had a clay floor. The other side of the wire partition, measuring 21 feet 4 inches internally, featured a concrete floor. As in the Iron Foundry building, the truss system in the Brass Foundry building survives in an unaltered condition.

The slab elevation is higher than the adjacent grade on all sides of the building with a loading dock along the west side of the building. The loading dock is covered with a canopy.

No other historic resources survive on the property. There is one non-contributing building on the site: the Richmond Recycling Center, a steel-framed structure built ca. 1990. It was constructed on land historically associated with the Richmond Locomotive & Machine Works, but the building itself is not historic and is not functionally related to the Richmond Locomotive & Machine Works.

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## **8. Statement of Significance Summary**

The Richmond Locomotive & Machine Works grew out of Tredegar Iron Works to become a nationally-known manufacturer of steam locomotive engines and an integral part of the industrial landscape of the City of Richmond. The Works produced hundreds of steam engines, which were then shipped out to meet the demands of public and private interests across America as well as several countries in Europe, Asia, and the South Pacific. Following its 1901 merger into what became the American Locomotive Company (ALCO), the Richmond Works continued to manufacture cutting-edge machines, including some of the biggest locomotives ever constructed, for distribution and use around the world. Although less than three decades would pass before the invention of the diesel engine signaled the end of the steam industry, the Richmond Works continued to produce specialty parts under contract to ALCO for many years. The site remained in use until late 2006, most recently as a specialty steel fabrication plant, maintaining its industrial character.

### **Areas of Significance**

The Richmond Locomotive Works and the Richmond works of the American Locomotive Company were the largest and most significant manufacturers of locomotives in Virginia. The resource is eligible for its direct association with the industrial history of the City of Richmond as well as its association with the national railway industry. The site is also eligible as the only locomotive manufacturing plant built in the City of Richmond, and one of only two in the Commonwealth of Virginia. It is an important surviving example of large-scale industrial buildings used to manufacture the steam locomotives that came to dominate American transportation from the close of the Civil War until they were displaced by diesel locomotives in the 1930s. These large-scale industrial buildings were often demolished or immediately refitted for other uses once they were no longer needed. The enormous scale of these buildings made re-use difficult, and thus few of these steam locomotive-related buildings survive. The resource is individually eligible for listing on the National Register of Historic Places at the state level of significance under A (industrial history) and C (architecture). The period of significance is 1887-1949 (the last production year of parts).

The former Richmond Locomotive & Machine works rose to a position of national industrial significance from its complex of buildings at the intersection of North Boulevard and Leigh streets in Richmond, Virginia. The Richmond Locomotive & Machine Works (1887-1901), and its successor firm created by merger, the Richmond works of the American Locomotive Company (1901-1926), was, during its period of

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production (1901-1926), the most significant manufacturer of locomotives in the state of Virginia, and one of the most significant industrial sites in Richmond. The North Boulevard Plant returned to production after the closure in 1926 of the Shockoe Valley works, and remained in specialty production for the American Locomotive Company until 1949. The 682 documented locomotives manufactured in this plant served on virtually every major American railroad, as well as in Canada, Sweden, Finland, Manchuria, Japan, and New Zealand. (Some sources indicate that as many as 4,500 locomotives were manufactured at the Richmond works.) One of the best-known locomotives to emerge from the Richmond works was the Southern Railroad's Richmond Locomotive PS-4 No. 1401, a 4-6-2 steam locomotive completed in March 1926, which has been on display at the Smithsonian Museum of American History since the early 1960s.

Early Locomotive Production in Virginia (1830s-1865)

Locomotive production in Virginia dates to the 1830s. The first engines to be employed in Virginia were manufactured in England, but soon local manufactures began to produce them, albeit in small numbers. D.I. Burr & Son of Richmond were among the earliest producers of locomotives in America. They were joined by Phillip Rahm of the Eagle Foundry and Talbott & Brother of the Shockoe Foundry, both of which produced a small number of engines.<sup>2</sup>

During the 1850s Uriah Walls of Petersburg produced approximately 20 locomotives and, at the same time, the Tredegar Iron Works of Richmond manufactured approximately 40. The Civil War ended locomotive production in Richmond, but production would resume after the war.

The Metropolitan Iron Works (1865-1886)

The Richmond Locomotive & Machine Works grew out of Tredegar Iron Works just after the Civil War. The firm began in 1865 in a machine shop owned by William E. Tanner, who was joined by Alexander Delaney from Tredegar. The resulting firm was called the Metropolitan Iron Works, and in 1865 they began to manufacture steam boilers, stationary engines, and saw mills. At about the same time, Tanner and another Richmond businessman, Jacob Ehbets, founded a used locomotive purchasing and reconditioning business; this was a short-lived enterprise, but one which was to later bear fruit.<sup>3</sup> The first listing for the operation in a Richmond city directory was in 1871, at 7<sup>th</sup> and Canal streets.<sup>4</sup>

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The Metropolitan Iron Works prospered and was renamed Tanner & Delaney Engine Co. in 1882. One year later fire destroyed the original plant. The firm immediately rebuilt on a new twelve-acre site in Shockoe Valley, then just outside the City of Richmond in Henrico County. The land had been purchased two years earlier from James Dooley, and held for future expansion (see figures 39 and 40). The firm prospered in their new facilities and added a line of steam locomotives in 1886, including the new steam-dummies.<sup>5</sup> In 1885, the Richmond city directory lists the firm at 1111 East Main Street, but this was presumably a downtown office, as there were no industrial facilities of any sort on east Main Street.<sup>6</sup> One year later, in 1886, the firm is listed at 1415 East Main Street, likewise presumably a new business office.<sup>7</sup>

The late 19<sup>th</sup> century saw a demand for improved mass transportation. The increasing use of horsecars opened a vast new market for locomotive builders, who developed a line of light engines to replace horses.<sup>8</sup> In the 1870s, many European and American locomotive works turned to street-locomotive power. The most popular of these street locomotives were called “dummies,” (see figure 48) for their boxed-in appearance. They were fully enclosed, both for safety and so that they would be less likely than other engines to frighten horses.<sup>9</sup> The era of the steam-dummy was a brisk one, lasting about two decades (into Tanner & Delaney’s reorganization as the Richmond Locomotive & Machine Works), and ended with the development of electric traction. Tanner & Delaney also built light locomotives for the rapidly-expanding post-Civil War logging industry, including some locomotives that could run on logging tramways built of log poles – temporary tracks made of straight tree trunks instead of iron on which the locomotives would run with heavy tires.

Richmond Locomotive & Machine Works (1887-1901)

Tanner & Delaney borrowed heavily in the mid-1880s to finance their expansion. Unable to repay the loans, they were ousted from control of their company late in 1887 by a group of Richmond bondholders that included James Bryan, publisher of the Richmond Dispatch. William Trigg was installed as president in that year, but Joseph Bryan replaced him as president in 1898. As a result, the firm was renamed the Richmond Locomotive & Machine Works. The firm continued to produce steam boilers and sawmills, but in the 1890s, began to produce a variety of locomotives (see figures 37, 38, 41-45). To reflect this change in production, in 1900 the firm’s name was shortened to the Richmond Locomotive Works.<sup>10</sup> By that time the Richmond Locomotive Works was the largest employer in Richmond, with some 5,000 employees.<sup>11</sup>

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The Richmond Locomotive & Machine Works were struck by fire a second time in 1891. The fire destroyed the boiler shop and much of the propulsion machinery then under construction for the U.S. battleship *Texas*.<sup>12</sup> By 1893, the works were rebuilt, and the shops employed more than 800 employees. Greatly enlarged, the Richmond Locomotive & Machine Works covered some 24 acres in Shockoe Valley.<sup>13</sup> In that same year, 1893, the Richmond city directory recorded the works at the “north end of 7<sup>th</sup> street.”<sup>14</sup> The pattern shop alone was said to have covered an acre, and the new boiler shop was said to be nearly as big.<sup>15</sup> Recognizing the threat of fire (which, in time, was to consume most of the Shockoe Valley plant<sup>16</sup>) the works maintained their own fire department.

Richmond Locomotive & Machine Works produced their first locomotive in 1887, and it appears that they were manufacturing them at the Boulevard and Leigh Street plant by that date. Between 1887 and 1901 the Richmond works produced 332 locomotives.<sup>17</sup> These locomotives were sent across the United States to private mining and mineral extraction companies, as well as freight and passenger rail lines. They were also sent abroad, to the rail lines of Sweden, Finland, and New Zealand, and to the Canadian Pacific railroad, among others. Compound engines developed by C.J. Mellin were particularly favored overseas,<sup>18</sup> and the Swedish State Railway took delivery of ten Richmond 4-6-0 compound locomotives, all of which remained in service until 1941.<sup>19</sup>

Among the most notable locomotives produced at the Richmond Machine & Locomotive Works were several massive freight-haulers, including the 600-series Mallets of the Virginian Railway. They were massive 540,000 pound engine weight locomotives, reputedly among the largest steam locomotives of the day.<sup>20</sup> These locomotives were so large that their stacks had to be lowered to pass through some of Virginia’s tunnels on their way to service in West Virginia coalfields.

The Richmond Locomotive & Machine Works manufactured several Mellin engines (named for C.J. Mellin, the Richmond works’ Chief Engineer, who was granted several patents for his engine developments), including the Mellin two-cylinder compound 2-8-0 engine with Stephenson valve motion, manufactured for the Chicago, Cleveland, Cincinnati & St. Louis, and the Chesapeake & Ohio lines in 1899. One of these engines, a C&O No. 716, performed the then-unheard of feat of hauling a 2300-ton train, unassisted, across the Blue Ridge and Alleghenies from Newport News to Chicago.<sup>21</sup> Another Mellin Compound 2-8-0 (known as “The Tramp”) was displayed at the 1893 World’s Columbian Exposition in Chicago, and another at the 1900 Paris Exposition.<sup>22</sup> Among the most famous locomotives manufactured in Richmond were the first three Mountain types ever built. These were the 4-8-2 locomotives purchased by the C&O in 1911-12.<sup>23</sup>

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The Richmond Locomotive & Machine Works also sold locomotives to private corporations such as Alford & Sloan, Sheffield Steel & Road, and Sloss Iron & Steel Co. This business expanded when the company merged into the American Locomotive Company in 1901. While the company sold locomotives across the country, the primary market for Richmond Locomotive & Machine Works locomotives was the south, a trait that would continue through its merger with the American Locomotive Company. Few locomotives were sold to lines in the on the east coast of the United States north of Virginia. A locomotive sold in 1901 to the Maryland & Pennsylvania railroad was a rare exception to that rule; company records do not document trains being sold further north along the eastern seaboard than the Maryland & Pennsylvania line.<sup>24</sup>

Most Richmond Locomotive & Machine Works locomotives were bound for southern roads. Many were sold to Virginia lines, including Richmond City Railway, as well as multiple locomotives to the Fredericksburg & Potomac, the Richmond & Danville RR, and the Seaboard Air Line. They were also sold to the Louisville & Nashville; the Louisville Southern; the Wilmington, Onslow & East Carolina; the Raleigh & Cape Fear; the Nashville & Tellico; the Atlanta & Florida; the Georgia Pacific; the Florida Central & Peninsular; the Savannah, Americus & Montgomery; the Southern RR; the New Orleans & Northeastern; the Mississippi River & Bonne Terre; the Vicksburg, Shreveport & Pacific; and the Little Rock, Hot Spring & Western railways. Richmond locomotives were delivered as far away as the Southwestern Arkansas & Indian Territory and the Alameda & San Joaquin railroads.<sup>25</sup>

Richmond Locomotive & Machine Works locomotives had a significant market in the Midwest and West as well. Midwestern destinations for Richmond locomotives included the Cleveland, Cincinnati & St. Louis; the Cincinnati, Richmond, & Muncie; the Baltimore & Ohio; the Wabash; the Chicago Great Western; the Brainerd & Northern Minnesota; the Elgin, Joliet & Eastern; and the Chicago & Western Indiana railways. The Chesapeake & Ohio purchased several trains, including two specifically constructed for carrying passengers to the 1893 Chicago World's Fair. Trains from the Richmond works reached further west, including engines sold to the Atchison, Topeka & Santa Fe; the Seattle, Lake Shore & Eastern; the Rio Grande & Western; the San Francisco & North Pacific; and the California & Northeastern railways.<sup>26</sup>

American Locomotive Company (1901-1926)

In 1900, the Richmond Locomotive & Machine Works shortened its name to the Richmond Locomotive Works, reflecting its emphasis upon locomotive construction. At

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the time it was the largest employer in Richmond, and a productive manufacturer. Locomotive manufacturing had become a big business, however, and small, independent producers like Richmond had little chance to compete on a national level. Locomotive production was dominated by the massive Baldwin Locomotive Works, based in Philadelphia, and the Lima Locomotive Works of Lima, Ohio.

In order to compete, several independent locomotive manufacturers, including the Richmond Locomotive Works, merged into the American Locomotive Company (ALCO) in 1901, becoming the second largest locomotive producers in the country. There were eight plants in the new conglomerate: the Brooks Locomotive Works in Dunkirk, NY, the Cooke Locomotive and Machine Works in Paterson, NJ, the Dickson Manufacturing Company in Scranton, PA, the Manchester Locomotive Works in Manchester, NH, the Pittsburgh Locomotive and Car Works in Pittsburgh, PA, the Rhode Island Locomotive Works in Providence, RI, the Richmond Locomotive Works in Richmond, VA, and the Schenectady Locomotive Works in Schenectady, NY. The Richmond plant was the southernmost, catering mostly (but not exclusively) to the southern market. By the time the works were first closed in 1926, it had produced 389 locomotives at the Richmond plant – 682 including those manufactured under the Richmond Locomotive Works name – for distribution across the United States and the world.<sup>27</sup>

The company later expanded through the purchase of several other locomotive manufacturing plants, including the Locomotive and Machine Company of Montreal, Canada (purchased in 1904, it was renamed the Montreal Locomotive Works, and continued to manufacture ALCO designs after the parent company closed). Other additions included the Rogers Locomotive Works of Patterson, NY (purchased 1905). The new company was headquartered in Schenectady, NY; this was the longest functioning of all the plants under ALCO, and was the last to be closed when the conglomerate finally went out of the locomotive business in 1955. The company remained in business as ALCO Products, but no longer manufactured locomotives.

The Richmond works remained the southernmost of all the ALCO locomotive manufacturing works. The exact date of the first buildings of the Richmond Locomotive Works on the North Boulevard site is uncertain. It is clear, however, that by the publication of the 1908 Sanborn Fire Insurance map (see below) the site was well developed. Most notably, the map depicts the north (old iron foundry) and south (old machine shop) portions of the present Iron Foundry in place, with a large gap in between. In the 180-foot space between the old machine shop and the old iron foundry were the old brass foundry (measuring 40' x 25' and was 13' tall<sup>28</sup>), a small service building, and a

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curved section of rail connecting these buildings to the rail spur at the northern edge of the site. The present brass foundry was not yet built, and visible were the beginnings of the pattern shop near Leigh Street.

The site underwent a major expansion in 1917. In that year, the old maintenance shop and the old iron foundry were connected (as had been planned from the beginning), and the small brass foundry between them was removed. The specifications for the expansion describe the project:

We have at that plant [the 'Boulevard Plant'] two buildings, each 100 foot long, which are 180 foot apart, and which were built so that they could readily be extended or connected together. Columns, trusses and rafters are now in place in present end walls, and the end of each building which is to be extended is enclosed with a light temporary frame wall. The other three outside walls of each building are built of brick. We wish to join these two buildings as quickly as possible ....<sup>29</sup>

Most of the materials removed for expansion were recycled into the new project: "Old window frames and sash which are suitable are to be repaired and painted and utilized by contractor in new walls. There are about 35 window frames 4ft. by 7 ft. with sash available. The contractor is to clean old brick for fillers in new brick work."<sup>30</sup> In addition, the contractor was to "remove new sand bins which are on the site" (presumably for casting), and "the owners will remove or relocate railroad tracks which interfere with construction of buildings."<sup>31</sup> The single track that connected to the main spur along the northern edge of the site was removed.

The specifications for the 1917 expansion call on the contractor to "furnish all new brick required which must be good hard brick, equal in appearance and quality with brick in present Foundry and Machine Shop. Contractor is to use old brick from the Brass Foundry for fillers. Every sixth course is to be a header course and there new work joins on old brick work, it is to be securely tied in."<sup>32</sup> In addition, the contractor was required to insure that "All joints [were] to be well filled and slushed full, struck inside and outside, and kept plumb and to line."<sup>33</sup> The mortar was a Portland Cement-based mortar, composed as follows" "To one barrel of Portland Cement, allow two bushels of first class lime and five eights (5/8) of a yard of sand. Lime is to be slaked [slaked] and mixed with sand, and cement is to be added and mixes as required for use."<sup>34</sup> Among the minor alterations to the masonry of the old Maintenance Shop and the old Iron Foundry was the stipulation that the "Mason is to remove old brick work where it interferes with the new

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steel of with [sic] travel of cranes, and is to face up and repair any places where brick work is removed.”<sup>35</sup> This alteration is visible on the interior of the old Maintenance shop and old Iron Foundry, in which the tops of the square piers supporting the steel structure of main north-south center bay are cut back to allow the insertion of the new steel on which the cranes were to travel.

All sash in the Iron Foundry extension “to be made of white pine, except jambs which are to be N.C. Pine.”<sup>36</sup> Also included in the carpenters’ work were instructions “to furnish and erect studding and sheathing for monitor walls,” and to construct the “frame for monitor ventilator 180 feet long.”<sup>37</sup> The Iron Foundry extension, and the older Maintenance building and Iron Foundry re-roofed at the same time: “Cover new roofs and connect with old roofings with a five ply Genuine Barrett Specification roof guaranteed weatherproof for ten (10) years. On all surfaces which have a pitch greater than two inches in twelve inches, use asphalt for last coat.”<sup>38</sup>

The 1917 architectural drawings (see below) records the expansion of the iron foundry, and the 1919 Sanborn map (see below) records the completion of these structures. While the Boulevard plant has clearly been in intensive operation for a an extended period of time, it is not listed individually in the Richmond city directory until 1920-21, when it is first listed in addition to the Shockoe Valley plant at 7<sup>th</sup> Street.<sup>39</sup> While the directory’s description of the Boulevard plant was never precise, and in fact changed over time (for example: “N. Boulevard at W. Leigh Street in 1922, “N. Boulevard near Fairgrounds” in 1937, and “N. Boulevard near RF&P RR” in 1942)<sup>40</sup>, the nature of the listing makes it clear that 1) the Boulevard plant had its own identity, and 2) it is extremely difficult to pinpoint exact building used by the works on the Boulevard. There are no surviving corporate records that make mention of specific buildings constructed, purchased, or used by the company. At present, the best guides are the building permits, architectural drawings and specifications, photographs, and Sanborn Fire Insurance maps.

The construction of the new Brass Foundry, undertaken in 1922 to replace the earlier brass foundry removed in 1917, was the next substantial expansion of the site. Particular attention in the specifications was paid to the composition and quality of the concrete floor of the new Brass Foundry:

The finished thickness of the floor slab shall be not less than 6” the foundation being 5 ¼”. Foundations to be made up of a mixture of 1 part of Portland cement, 2 parts sand, and 4 parts crushed stone, to run in size from ¼” to 1”. This to be tamped in place and immediately after tamping spread a mixture of ¾” thick consisting of one part Portland cement, to which 5lbs of Truscon Floor Hardener have been added to every bag of

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cement, and two parts of sand. Care shall be exercised to insure a thorough mixing to uniform color of the dry Portland Cement and floor hardener to quantities specified. The topping shall be screeded to a true and even surface, and then well floated with wooden floats. Immediately after this floating a dry mixture of 20# Truscon Floor Hardener and 15# Portland cement, mixed thoroughly to an even, uniform color, shall be sprinkled over each 100 sq. ft of surface.<sup>41</sup>

Just as the 1917 specifications for the Iron Foundry extension recycled old building materials as much as possible, so did the 1922 specifications for the new Brass Foundry was specified such that “The four walls of the building will be made of brick, which will, as far as possible, be reclaimed from the old Power House building. Such new brick as is necessary to buy will be specified to run about 80% of hard sand and 20% salmon.”<sup>42</sup> In addition, “All brick [is] to be laid in cement mortar 5/8 yard sand per 1000 brick. To this may be added a sufficient quantity of lime to make the mortar work smooth.”<sup>43</sup>

The steel work for the new Brass Foundry was, as with the extension of the Iron Foundry, made in-house: “The building is to have steel trusses which will be made and erected by the owner in accordance with drawing enclosed” (see below).<sup>44</sup> The roof was constructed of 18-pound galvanized corrugated iron, the doors (which survive in place) “will be constructed of corrugated iron fastened on angle iron frame; to be of the sliding type, and hung with Coburn track and hangers,” and the sash were made of steel.<sup>45</sup>

The 1925 Sanborn map (see below) depicts the greatest expansion of the site, which at its peak included seven structures. Most were ancillary structures that supported production in the main iron foundry structure, far and away the largest structure on the site. The current site plan (see below) records the location of the iron foundry, the brass foundry, the Richmond Recycling Center (ca. 1990, which will be included in the rehabilitation project), and the multiple historic rail spurs that define the northern and western boundaries of the site.

One of the dominant figures in the history of the Richmond Locomotive Works was Columbus K. Lassiter. Born in 1866 in Suffolk, Virginia, Lassiter went to work for Tanner & Delaney in 1886. A mechanic who initially worked for the company as an accountant, Delaney’s mechanical acumen became apartment to then-president William Trigg, who moved him to the manufacturing end of the business, where he eventually became the vice president of manufacturing. Under Lassiter’s direction, the Richmond works diversified its production, producing many locomotive parts and accessories that it previously purchased from outside vendors. Lassiter directed the construction of the

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separate foundry at the North Boulevard site, in order to vertically align as much production as possible within the Richmond works.<sup>46</sup>

Lassiter also introduced a system that allowed sub-contractors to do machining and fabrication at home. Thomas Green, a pipe fitter who worked for Lassiter from 1922-27, explained the system: "The pipe shop got a certain amount of money for their part of the job of piping locomotives. For example, if the shop made \$3,500 a week, the men who held the contract would deduct guaranteed salaries of all pipe-shop employees, keep 20 percent of the excess for themselves, and divide the rest among the shopmen."<sup>47</sup> This system was widely used throughout the American locomotive production world. As a result, workmen like Green could, between wages and bonuses, earn as much as \$100 per week, a substantial sum.

With the outbreak of World War I, Lassiter negotiated the first contract in the United States for supplying munitions to the Allies. In just 90 days, Lassiter converted the Richmond works from steam engine production to the manufacture of three-inch artillery shells. Eventually, 3,000 shells a day were produced by the Richmond works. For reasons that remain unknown, the Richmond works ceased production of munitions entirely when the United States entered the war.<sup>48</sup>

The Richmond works resumed locomotive production in 1918. The 1920s were productive years for the Richmond works, as a series of exceptional locomotives were manufactured in Richmond, such as the Southern Railway's famous Ps-4 Pacifics (see figure 46; this locomotive is now restored and housed at the Smithsonian Institution).

The Richmond works of the American Locomotive Company produced additional locomotives for many of the same companies and railroads as it did during its time as the Richmond Locomotive & Machine Works, but the range of its sales increased. In particular, sales to the northeast, west, and to private companies increased, as did its increasing production of stock locomotives, which it did not produce as the Richmond Locomotive & Machine Works.

The roster of private companies for whom the Richmond works produced locomotives was extensive. It included the Middle States Construction Co.; the Atlantic Equipment Co.; Colby and Co.; the Alabama Consolidated Coal & Iron Co.; the White Oak Coal Co.; MacArthur Brothers & Win & Co.; Kelly Island Lime & Transport; the Winston Co.; Groveton Lufkin & Northern; Weirton Steel Co.; Wisconsin Lime & Cement, the Utah Copper Co.; the Nevada Consolidated Copper Co.; and the Pittsburgh Steel Co.<sup>49</sup>

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While production for Southern roads remained strong, for the first time, production for Midwestern and Western nearly equaled Southern production. Engines were manufactured at the Richmond works for such Virginia-based short line railways as the Seaboard Air Line; Richmond, Fredericksburg & Potomac; Norfolk & Western; the Virginia & Carolina Coast; the Tidewater Railway; the Blue Ridge RR; and the Virginian. Engines built for southern railroads include locomotives for the Alabama Great Southern; the New Orleans & Northeast; the Vicksburg, Shreveport & Pacific; the Southern Railway; the Mississippi River & Bonne Terre; the Southern; the Birmingham Southern; Central of Georgia; the Louisville, Henderson & St. Louis; the Tennessee Central; and the Apalachicola Northern.<sup>50</sup>

The Midwestern and Western markets increased for Richmond engines during the American Locomotive years. Midwestern destinations included the St. Louis and San Francisco; the Minnesota and International; the Toledo Railroad & Terminal; the St. Louis Troy and East; the St. Louis & O'Fallon; the St. Louis & Hannibal; the Detroit Toledo & Irontown; the Kanawha & Michigan; the Cincinnati, New Orleans, & Texas Pacific; the Kansas City & Memphis; the Illinois Central; the Kansas City Southern; and the Chicago, St. Paul Minnesota RR. The Western market increased as well. Locomotives were manufactured at the Richmond works for the California & Northwest; the Colorado & Southern; the Nevada & Northern; the Northern Pacific; the Fort Worth & Denver City; the Trinity & Brazos Valley; the Fort Worth & Denver City; the Washington, Idaho & Montana; the Fort Worth Belt RR; the Yosemite Valley RR; the Nevada Copper Belt; and the Central New Mexico & Northeast.<sup>51</sup>

The Richmond works sold more locomotives to lines with penetration into the northeast. Locomotives were sold to small lines such as the modest Western Maryland, but also to some of the larger northeast-based railroads, some of which would in time buy up the short line railways that had been the primary market for Richmond locomotives. Some of these larger railroads that the Richmond works sold include the Pennsylvania RR; Baltimore & Ohio; the Chesapeake & Ohio; and the Long Island RR.<sup>52</sup>

The Richmond works also continued to sell locomotives abroad, including a pair of locomotives to the South Manchurian railroad and a locomotive to the Imperial Government of Japan. Locomotives were manufactured for Cuba (the Guantanamo & West) and the Russian government, but both orders were cancelled after completion.<sup>53</sup>

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American Locomotive Company – the Later Years

At its peak, the American Locomotive Company (that is, the several smaller companies that made up ALCO) was the second-largest producer of steam locomotives in the United States. The conglomerate manufactured nearly two-thirds of its locomotives at its main plant, Schenectady, New York. All told, some 75,000 steam locomotives were produced by the conglomerate from 1901 until production ceased in 1955.

ALCO manufactured locomotives for some of the most significant railroads in the United States, including the New York Central, the Union Pacific, and the Southern Pacific. Its various machine works produced some of the best known steam locomotives to be produced in this county, including the 4-6-4 Hudson and the 4-8-4 Niagara, produced for the New York Central, and the 4-6-6-4 Challenger manufactured for the Union Pacific. ALCO also produced some of the biggest locomotives ever constructed, including the Union Pacific 4-8-8-4 Big Boy.

Just six years after the merger, ALCO began to close some of the smaller works. The Rhode Island plant was the first to close; opened in 1866, it was shuttered in 1907. The Dickson works followed two years later; created in 1862, it was closed in 1909. Rogers, the oldest of all the plants owned by ALCO, was not immune to closure; it was closed in 1913 after remaining in operation since 1837. The Manchester plant (begun as Amoskeag in 1849), was closed in 1913. Similarly, the Pittsburgh plant, which had operated since 1867, was shut down in 1919.

By 1918, the Richmond works' Columbus K. Lassiter was assigned to ALCO's main offices in the Hudson Terminal in New York City, which was seen by workers in Richmond as a positive step that would protect their interests. Lassiter resigned in 1922, however, and ALCO's corporate policy favored centralization. In January 1927 the Richmond works were closed. They re-opened in the spring, and operated again for several months, but were permanently closed by the end of the year.<sup>54</sup> The last of the smaller facilities, the Brooks works -- which had operated since 1869 -- was closed shortly after the Richmond facility. The corporate structure of the Richmond works was dissolved in 1929. The Shockoe Valley plant was listed in the Richmond city directory as late as 1932-33, even though production there had ceased.<sup>55</sup>

The closure of the Richmond works did not end all production, however. The North Boulevard plant was quickly returned to service making specialty parts, such as stay bolts and reverse gears, for ALCO until 1949.<sup>56</sup>

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The Fate of the Buildings of the Richmond Locomotive Company / Richmond Works of the American Locomotive Company after 1926

The buildings of the Richmond works were not demolished immediately when the works were closed, but instead faced many years of decline, with the eventual demolition of virtually all buildings on the 60-acre Shockoe Valley site. Various plans emerged after the closure to re-use the buildings of the Richmond works, and the North Boulevard buildings, in particular, quickly found new uses. In 1933, ALCO – which still owned the buildings – secured contracts for a railroad safety device (a power reverse) newly-mandated by the Interstate Commerce Commission and decided to use the North Boulevard plant for the purpose. The smaller North Boulevard facility was selected because “it was designed to turn out specialties and has been kept active in spite of the closing of the main plant a number of years ago.”<sup>57</sup> Unfortunately, the buildings at the Shockoe Valley plant were not so easily re-used: “No plans for using the main plant of the company here are being considered ... Locomotive building is virtually at a standstill, and whatever work of this kind there is to be done, for a considerable time, can be taken care of at other points.”<sup>58</sup>

After the consolidation, a 1933 Richmond News Leader article records, ALCO “has been spreading into other manufacturing fields for several years, and has converted several locomotive plants for other purposes. As yet it has been unable to work out any use for its huge plant facilities here [in Shockoe Valley], but the buildings are being kept in good repair for eventualities. The major part of the machinery here has been dismantled and moved to other points.”<sup>59</sup> Late in 1937, ALCO announced its intentions to demolish all 23 buildings on the 60-acre site; in February 1938<sup>60</sup>, a contract was let out to the Hetz Construction Company of Niles, Ohio, to demolish all buildings on the Shockoe Valley site “for their complete demolition.”<sup>61</sup> ALCO was willing to consider offers for the site, but none appear to have emerged. A small parcel of the Shockoe Valley site did escape demolition. In 1938 the Richmond Engineering Company purchased five buildings, the truck, tank, rod and bolt shops, as well as an office that occupied a six-acre site bounded by Seventh, Hospital, and Mill streets.<sup>62</sup> The Richmond News Leader recorded that “complete renovation to meet needs will be carried out. Four heavy cranes will be installed to handle the heavier products to be manufactured, and two new railway spur tracks, including lines from both the Chesapeake and the Seaboard air Line will be laid.”<sup>63</sup> A week later, the Richmond News Leader announced that Richmond Structural Steel also purchased six acres of the site, along with the former smith and hammer shop.<sup>64</sup> The firm announced that they would add an office building and a railroad spur to the site.<sup>65</sup> The 1930s were hard on the Shockoe Valley site. The decade began and ended with large fires at the complex. On April 7, 1930, fire destroyed the plant offices

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in Shockoe Valley, and on May 19, 1938, a fire destroyed an unoccupied ALCO building, a “block-long, five-story storage building” in Shockoe Valley.<sup>66</sup>

The 1940s were no kinder. In May of 1942, the building “which formerly manufactured locomotives” was razed, and the parts and machinery moved to Youngstown, Ohio, for re-erection to manufacture tanks for the U.S. war effort.<sup>67</sup> The building was purchased by the General American Transportation Company, and the engineer in charge announced that “the massive steel structure of the building [would be re-] constructed from blue prints drawn similar to the building’s original plan here, but that the massive building would be only one unit of a giant tank-production factory now under construction at Youngstown.”<sup>68</sup>

On June 30, 1949, the Richmond Times-Dispatch announced that ALCO’s North Boulevard plant, “the last of the company’s units in Richmond” was for sale.<sup>69</sup> The site was offered for \$300,000, which included “the building and more than seven acres of land adjacent to the Seaboard Air Line Railroad’s shops and yards.”<sup>70</sup> The newspaper recorded that the “machinery in the plant has been dismantled and sold, only the massive shafts in the two shop wings of the huge building remaining. Some of the offices have been cleared and all of the company’s parts for locomotives, such as stay bolts and reverse gears for steam locomotives, have been transferred to the Flannery Bolt Company at Bridgeville, Pa., and the Franklin Railway Supply Company in New York.”<sup>71</sup> The American Locomotive Company released a statement that announced the company’s regret. “The American Locomotive Company regrets very much,” the statement read “to have to take this action in a plant which has been operating continuously since 1919 [though other evidence, including building permits and Sanborn Fire Insurance maps clearly indicates that production had begun much earlier], but this only represents the result of the evolution of motive power on American railroads.”<sup>72</sup> The newspaper described the building as one “that occupies only a little more than half of the tract, [one that] has an estimated 335,000 square feet of floor space.”<sup>73</sup> An article the following year noted that “sale of this property completes the American Locomotive Company’s withdrawal from Richmond. Other units in Shockoe Valley alongside the Chesapeake & Ohio Railway tracks were sold years ago.”<sup>74</sup> The same newspaper article noted that “Last Summer when the American Locomotive Company announced the closing of the last unit of its former impressive plant here, an official attributed the curtailment to the wider use of Diesel power on American railroads. All of the railroads now serving Richmond and the Southeast, save one, now employ Diesel power to a great extent, and it was pointed out that this modernization has cut steadily into the business of the steam locomotive manufacturers, requiring a closer concentration of their plant facilities.”<sup>75</sup>

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The Boulevard plant remained individually listed in the Richmond city directory each year from its first individual listing in 1920-21 until its final listing in 1950.<sup>76</sup>

The North Boulevard property was finally sold in the spring of 1950 to the Brooks Transfer Company.<sup>77</sup> Brooks used the building as a storage and shipping warehouse, and made limited changes to the building (such as the offices at the southwest end of the building) to facilitate this use. An undated photograph at the Dementi Studios (see below) during its use as Brooks Transportation (and apparently dating to the 1950s) reveals minimal alterations to the iron foundry building. This photograph is the last known photograph made before the west and south elevations were clad with metal. This photograph was made while the building was used by Brooks Transportation, but before it was altered for use as Brooks Moving and Storage. It was during use as Brooks Transfer (during the 1960s) that the metal cladding was placed on the west elevation of the iron foundry, and probably during this period that several modifications were made to the building, including removal of the monitor roof and bricking up the windows, to facilitate use as a secure storage site. This is recorded in another photograph from the Dementi Studio, dated ca. 1970 (see below). At approximately the same time the windows of the brass foundry were bricked up, again to facilitate use as a secure storage facility. It was also apparently during this period that the two-story pattern shop building that stood near Leigh Street was demolished for reasons unknown.

By 1969, virtually nothing remained of the Shockoe Valley works. Railroad historian William E. Warden, Jr., wrote in 1969 that “only one or two of the old shop buildings have survived; they now belong to the Richmond engineering Company.”<sup>78</sup> An examination of the site today reveals that the site has been bisected by the Shockoe Valley Bridge and, while it remains industrial in character, there have been wholesale recent demolitions in the area. No surviving buildings appear to be related to the Richmond works (figure 59). The only surviving buildings that can be documented to have been a part of the Richmond works are the Iron Foundry and Brass Foundry at the North Boulevard plant.

The building was sold ca. 1980 to Richmond Structural Steel, which has occupied the space until December of 2006 for use for specialty steel fabrication, returning it its historical industrial use.

Context: Other Virginia Producers of Locomotives

The Richmond Locomotive Works and the Richmond works of the American Locomotive Company were the largest and most significant manufacturers of locomotives in Virginia. The Roanoke Machine Works was the only other major

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producer of locomotives in Virginia. The Roanoke Machine Works, a subsidiary of the Norfolk & Western Railroad (1881-1884; 1900-1953), was intended to function as a semi-autonomous shop manufacturing locomotives both for Norfolk & Western and for other independent lines. In practice, all locomotives went to Norfolk & Western; only freight cars went to independent lines. (See Roanoke Machine Works, listed under “Car Builders” in 1877 edition, Poor’s Directory of Railway Officials). The fundamental difference between the Roanoke Machine Works and the Richmond works of the American Locomotive Company was that the Richmond locomotives were all manufactured for independent lines and companies. The Roanoke works were out of production from between 1884 and 1900, during the time that the Richmond Locomotive & Machine Works rose to prominence. Even when the Roanoke Machine Works was in business, Norfolk & Western purchased locomotives from Richmond.

There were few other locomotive producers in Virginia, and all of them operated on a vastly smaller scale, and generally for limited periods of time. Uriah Wells of Petersburg is known to have built locomotives between 1851 and 1861. The Smith & Perkins Locomotive Works (1851-1857) produced about fifty locomotives for the Manassas Gap and on the Orange & Alexandria railroads, before Thatcher Perkins left to become a master mechanic of the B&O Railroad. Thomas W. Goodwin & Co. (1872-1920) was a steamboat repair shop in Norfolk that also manufactured narrow-gauge locomotives. The Petersburg Iron Works advertised in the mid-1880s, offering to build tramway engines, but there is no record that they produced any. There were small works at the Orange & Alexandria Railroad shop complex in Alexandria that may have been used for production, but it seems most likely that they were primarily used for repairs during the years bracketing the Civil War.

Locally, there were no other producers of locomotives. The Richmond, Fredericksburg & Potomac Railroad did not manufacture locomotives – they purchased their rolling stock from producers such as the ALCO - but they once operated a sizeable maintenance and repair shop facility at Acca Yards, north and west of the North Boulevard plant. All of the historic buildings and structures that dated to the early 20<sup>th</sup> century have been demolished, with the exception of an engine house on Dabney Road. The R.F. & P. Engine House may be the only other intact historic locomotive-related building (not including the Main Street and Broad Street stations and the associated train sheds) that survives in Richmond.

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Context: Other Significant Virginia Steam Engine Production Facilities

The Richmond Machine Works / Richmond Works of the American Locomotive Company, and the Norfolk & Western Works were the only major producers of steam locomotives in Virginia – no other works are known to survive. The Norfolk & Western Railway Company Historic District (VLR 1998, NR 1999) is a three building historic district that does not include the machine shops associated with the Roanoke Machine Works. Norfolk & Western has refused all offers to list this works on the National Register.

The smaller works such as the Uriah Wells works in Petersburg, the Smith & Perkins Locomotive Works, and the Thomas W. Goodwin Works in Norfolk have long been demolished. Even the Orange & Alexandria Railroad shop complex in Alexandria is gone; the only related resource to survive from any of these resources is a single railroad bridge in Alexandria associated with the Orange & Alexandria Railroad (VLR and NR listing 2003).

**Evaluation of Physical Integrity by National Register Standards**

**Location:** The Richmond Machine Works / Richmond Works of the American Locomotive Company remains on its original site. Events associated with the history of the two firms occurred on this site, one of two occupied by the Richmond Machine Works / Richmond Works of the American Locomotive Company. The other site, located in Shockoe Valley was stripped of its machinery in the 1930s, and the buildings were demolished in phases following.

**Design:** The Richmond Machine Works / Richmond Works of the American Locomotive Company retains excellent integrity of design. The design of both buildings can clearly be read. The major elements contributing to the design of the plant (site, plan, elevation, details, and materials) remain in place. All interior spaces and volumes remain intact. The design of the plant is well documented in original drawings and photographs. While the exterior windows have been bricked-up, and the west elevation clad in metal, the original design can be easily read in the building fabric, and the rehabilitation plans call for the window openings to be re-opened and filled with historically-appropriate windows, and all metal cladding to be removed to expose the historic brick beneath. As of January 2007, this has been started and the exterior expresses the original brick elevation with window openings. While the machinery has long been removed (as is the case at Tredegar: virtually all of the machinery on the site was moved

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away, as production shifted to other sites and the facility closed; a small amount of machinery has been returned, but it is largely without its historic machinery), the all-important crane tracks remain, and the facility still reads unmistakably like an industrial facility.

**Setting:** The setting of the Richmond Machine Works / Richmond Works of the American Locomotive Company retains good integrity. The railroad tracks the cross the west and north margins of the site remain, and remain in limited use carrying trains to the Science Museum.

**Materials:** The majority of The Richmond Machine Works / Richmond Works of the American Locomotive Company original material remains in place and has not been substantially altered. The steel frame of both Iron and Brass Foundries remain unaltered, and in an excellent state of repair. This steel frame is the largest early twentieth century steel frame surviving in the Richmond area. The brick walls also remain in place. While the windows have been bricked up, and the west exterior elevation of the Iron Foundry covered with corrugated metal, the original conditions can be easily read, and rehabilitation plans call for the metal to be removed, and the window openings restored, and historically-appropriate windows inserted.

**Workmanship:** The Richmond Machine Works / Richmond Works of the American Locomotive Company was built of permanent materials, and intended to be used for industrial production. The form and details of the building rise above the utilitarian nature of its use, and with its decorative corbelling and other architectural embellishments, transcends utilitarian construction and becomes architecture.

**Feeling:** The Richmond Machine Works / Richmond Works of the American Locomotive Company retains excellent integrity of feeling. The building looks and feels unmistakably like the industrial facility it was – and remains today. Comparison with historic photographs and postcards of the Norfolk & Western Machine Works and the Brooks Works of the American Locomotive Company in Dunkirk, NY, clearly establish that the Richmond works can be clearly read as a historic locomotive production facility.

**Association:** The Richmond Machine Works / Richmond Works of the American Locomotive Company retains excellent integrity of association. It clearly represents the history locomotive production in Virginia during the early twentieth century. While forgotten today, the Richmond works convey a critical passage in the history of locomotive production in Virginia, and when coupled with Tredegar and the Norfolk & Western Roanoke Works, tells a story that spans from the mid-nineteenth century to today. Given

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that Norfolk & Western has no interest in listing the Roanoke works, the listing of the Richmond works is all the more important.

Rehabilitation Plans

The project seeks to utilize Historic Rehabilitation Tax Credits to rehabilitate the surviving buildings of the Richmond Machine Works / Richmond Works of the American Locomotive Company. The proposed project seeks to remove the corrugated metal siding on the west elevation of the iron foundry, to close the large openings along the ground floor of the east elevation of the iron foundry, and to rehabilitate the elevation with the reintroduction of historically-compatible sash and doors. In order to restore the historic character of the elevation, the missing monitor roof and the historic door and window pattern will be returned to the south elevation of the iron foundry. The owner also proposes to generally restore the historic window openings of the iron foundry and brass foundry and insert historically-compatible windows. The interiors of the iron and brass foundries will be adapted for use as retail and dining facilities, and so the intent is to retain the historic open, industrial character of the interiors. The adjacent non-contributing Richmond Recycling Center (ca. 1990) will be adapted and enlarged to house a multiplex cinema. The owners decided to purchase and adapt this non-historic building for the theatres they wish to construct on the site, so as to minimize the impact on the historic buildings, and to allow them to best be adapted to highlight their historic character.

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## 9. Bibliography

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## **10. Geographical Information**

### **Verbal Boundary Description**

The western boundary of the site extends from south to north, beginning from the intersection of West Leigh Street with North Boulevard, and extending north along the edge of North Boulevard to a point immediately south of the RF&P easement that flanks their railroad tracks. The boundary then extends to the southeast along the south edge of the railroad easement to a point (an embedded rod) at which it turns south, from which point it continues south until it intersects with West Leigh Street. The southern boundary of the site is formed by West Leigh Street, and extends from this point west to the intersection with North Boulevard. The property is defined by the City of Richmond as tax map reference numbers Map Reference Numbers N0001503035, N001396004, and N0001503040.

### **Boundary Justification**

The boundaries of the Richmond Locomotive Works are those historically associated with the complex. The property is defined by the City of Richmond as tax map reference numbers Map Reference Numbers N0001503035, N001396004, and N0001503040.

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<sup>2</sup> William E. Warden, Jr. “Richmond Locomotive Works,” *Railroad Magazine* 85.5 (September 1969): 20.

<sup>3</sup> *Ibid.*

<sup>4</sup> Richmond City Directory, 1871, Library of Virginia, Richmond, Virginia.

<sup>5</sup> Warden, 20.

<sup>6</sup> Richmond City Directory, 1885, Library of Virginia, Richmond, Virginia.

<sup>7</sup> Richmond City Directory, 1886, Library of Virginia, Richmond, Virginia.

<sup>8</sup> Warden, 19.

<sup>9</sup> *Ibid.*

<sup>10</sup> Warden, 20.

<sup>11</sup> *Ibid.*

<sup>12</sup> *Ibid.*

<sup>13</sup> *Ibid.*

<sup>14</sup> Richmond City Directory, 1893, Library of Virginia, Richmond, Virginia.

<sup>15</sup> Warden, 20.

<sup>16</sup> “Blaze, Fanned by Gale, Wrecks Plant Offices: Roof and Upper Structure of American Locomotive Building Are Destroyed,” *Richmond News Leader*, April 8, 1930; “Engine Firm Plans to Raze Original Plant,” *Richmond News Leader*, December 22, 1937. “Explosives reported in Razed Plant,” *Richmond News Leader*, May 20, 1938; “Plant Building Will be Moved to Youngstown; Locomotive Works Structure Razed, Will House Tank-Making Machines,” *Richmond News Leader*, May 6, 1942.

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<sup>18</sup> Warden, 19.

<sup>19</sup> *Ibid.*

<sup>20</sup> *Ibid.*

<sup>21</sup> *Ibid.*

<sup>22</sup> *Ibid.*

<sup>23</sup> *Ibid.*, See “ALCO Family of Builders, Locomotive Rosters.”

<sup>24</sup> “ALCO Family of Builders, Locomotive Rosters.”

<sup>25</sup> *Ibid.*

<sup>26</sup> *Ibid.*

<sup>27</sup> *Ibid.*

<sup>28</sup> Specifications for Iron Foundry Extension Plan, May 31, 1917. Richmond City Building Permit 6171A, City of Richmond, Bureau of Permits and Inspections, Building Permit Architectural Blueprints and Specifications, 1907-1949, Library of Virginia, Richmond, Virginia.

<sup>29</sup> *Ibid.*

<sup>30</sup> *Ibid.*

<sup>31</sup> *Ibid.*

<sup>32</sup> *Ibid.*

<sup>33</sup> *Ibid.*

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<sup>34</sup> Ibid.

<sup>35</sup> Ibid.

<sup>36</sup> Ibid.

<sup>37</sup> Ibid.

<sup>38</sup> Ibid.

<sup>39</sup> Richmond City Directory, 1920-21, Library of Virginia, Richmond, Virginia. See also the Richmond City Directory, 1922, 1937, and 1942.

<sup>40</sup> Ibid.

<sup>41</sup> "Specifications for Brass Foundry, Boulevard Plant, American Locomotive Co., Richmond Works," January 1, 1922. Richmond City Building Permit 9123, City of Richmond, Bureau of Permits and Inspections, Building Permit Architectural Blueprints and Specifications, 1907-1949, Library of Virginia, Richmond, Virginia.

<sup>42</sup> Ibid.

<sup>43</sup> Ibid.

<sup>44</sup> Ibid.

<sup>45</sup> Ibid.

<sup>46</sup> Warden, 21.

<sup>47</sup> Thomas Green, quoted in William E. Warden, Jr. "Richmond Locomotive Works," *Railroad Magazine* 85.5 (September 1969): 22.

<sup>48</sup> Warden, 22; Lassiter, Robert R., Letter to Editor, Richmond News Leader, July 25, 1949.

<sup>49</sup> "ALCO Family of Builders, Locomotive Rosters."

<sup>50</sup> Ibid.

<sup>51</sup> Ibid.

<sup>52</sup> Ibid.

<sup>53</sup> Ibid, The Russian cancellation is understandable, as the locomotive was completed in 1918, just after the government that ordered it was overthrown. Ironically, it might be possible that a locomotive manufactured at the Richmond works may have played a bit part in the events that led to the cancellation of that order. During the tumultuous final days of the Russian Revolution, while the Great War was raging, Vladimir Lenin was in exile in neutral Switzerland. After the March 15, 1917 abdication of Nicholas II, plans were made to bring Lenin back to Russia. Kaiser Wilhelm II allowed Lenin to cross Germany in the infamous sealed train. Once through Germany, Lenin continued by ferry to Sweden, and from there to Finland. From Finland, he journeyed by steam train to Petrograd's Finland Station. Lenin's arrival late at night on April 3, 1917, was watershed moment in the Revolution. Lenin emerged from the train and gave a speech from the platform. In three brief sentences, Lenin outlined the Bolshevik program and his contempt for the Provisional Government: "The people need peace. The people need bread and land. And they give you war, hunger, no food, and the land remains with the landowners." The steam locomotive that pulled Lenin into Finland Station remains has long been preserved there. There is an oral tradition this locomotive was manufactured in Richmond. Records from the Richmond works document the sale of three steam locomotives to the Finnish State Railroad. The first, a 2-6-0-C steam locomotive was sold in 1898; following that, pair of 4-6-0 steam locomotives was sold in 1900 and 1901. The Russian Embassy was written to confirm this story, but a response has not yet been received.

<sup>54</sup> Warden, 25.

<sup>55</sup> Richmond City Directory, 1932-33. Library of Virginia, Richmond, Virginia.

<sup>56</sup> "Big Plant Site on Boulevard is Up for Sale," Richmond Times Dispatch June 30, 1949.

<sup>57</sup> "Hope to Build Rail Devices at Plant Here," Richmond News Leader, February 1, 1933.

<sup>58</sup> Ibid.

<sup>59</sup> Ibid.

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<sup>68</sup> Ibid.

<sup>69</sup> "Big Plant Site on Boulevard is Up for Sale," Richmond Times Dispatch June 30, 1949.

<sup>70</sup> Ibid.

<sup>71</sup> Ibid.

<sup>72</sup> Ibid.

<sup>73</sup> Ibid.

<sup>74</sup> "Deserted Plant of Locomotive Firm is Sold: Storage Company Buys Big Boulevard Property," Richmond News Leader, March 14, 1950.

<sup>75</sup> Ibid.

<sup>76</sup> Richmond City Directory, 1920-21, and 1950. Library of Virginia, Richmond, Virginia.

<sup>77</sup> "Deserted Plant of Locomotive Firm is Sold: Storage Company Buys Big Boulevard Property," Richmond News Leader, March 14, 1950.

<sup>78</sup> Warden, 25.

RICHMOND  
LOCOMOTIVE RD  
RICHMOND, VA  
127-6188  
UTM ZONE 18  
A. 282137E  
4160605N  
B. 282252E  
4160407N  
C. 282211E  
4160246N  
D. 282013E  
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