



*Richmond, from the hill above the waterworks*, engraved by W.J. Bennett from a painting by G. Cooke; Published by Lewis P. Clover (New York) c. 1843

# Historical Documentation of the Site of Venture Richmond's Proposed Amphitheater

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for the Oregon Hill Home Improvement Council, Inc.

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**(Figure 1.) *View of Richmond from Hollywood Cemetery, (detail) 1854.* The James River and Kanawha Canal provided vital transportation and water power for the development of Richmond. The canal was the most important public project in Virginia's antebellum period. (Source: Library of Virginia)**

## **Introduction:**

It has been said that Richmond possesses such an embarrassment of historical riches that they are not fully appreciated. This is the case with the James River and Kanawha Canal, which is of profound importance nationally as one of the first operating canals in the nation with locks.<sup>1</sup> Founded as the James River Company in 1785, the canal boasted George Washington as its first president and prime mover. The canal is an historic treasure and one of the most recognizable landmarks of Richmond in the late 18<sup>th</sup> and 19<sup>th</sup> century. The initial hurdle in constructing the canal was to provide water access around the falls of the James River.<sup>2</sup>

<sup>1</sup> Virginia House and Senate Resolution, celebrating the bicentennial of the completion of the canal, 1989 (See Figure 113.)

<sup>2</sup> Nomination Report for the James River and Kanawha Canal Historic District, DHR File Id #: 127-0171, Archives, Virginia Department of Historic Resources

The canal below Oregon Hill, at the falls of the James, was one of the first segments of this remarkable enterprise to be completed, and it has survived over 225 years in its authentic condition. By 1801, the canal served a dual purpose of providing a source of vital water power that allowed Richmond's most important industries, including flour, corn, paper, cotton mills and iron works, to thrive on the banks of the James River.<sup>3</sup>



**(Figure2.) *George Washington, 1787.*** This portrait of Washington was painted two years after the founding of the James River Company in 1785, and two years before Washington was elected as the first President of the United States. Washington was the prime mover behind building the canal and served as the first president of the James River Company. The portrait was painted about the time that the canal was built below Oregon Hill. (Source: Pennsylvania Academy of Fine Arts)

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<sup>3</sup> Water lease grants, Tredegar Papers, Box 32, Accession Number 23881, 24808, Archives, Library of Virginia



Extensive documentation indicates that the section of the James River and Kanawha Canal at the falls of the James River below Oregon Hill has been remarkably unchanged in its dimensions from the mid- 19<sup>th</sup> century, during the period of the canal's primary historical significance. The highpoint of the canal's service was achieved in 1853, two years after the canal was successfully extended to Buchanan when 231,032 tons of merchandise was shipped, reaching revenues of \$293,512. The following year 195 canal freight boats, batteaux, and passenger boats were in operation.<sup>4</sup> At the current site of Venture Richmond's proposed amphitheater the canal was 60 feet wide in the 1838,<sup>5</sup> and the tow path was 30 feet wide from 1801 when John Harvie by deed reserved a 30 foot public road at the water's edge on the south bank of the canal,<sup>6</sup> as shown in an 1848 plat surveyed for the Harvie family.<sup>7</sup> It is our good fortune that the canal at this location has survived largely unaltered from the period of the canal's primary significance.

Detailed surveys indicate that the water elevation in the canal at Tredegar was at or near 83 feet above mean sea level from 1841 through 1936.<sup>8</sup> The canal is a carefully engineered structure, made impermeable by the process of "puddling" the clay liner when the canal was built over two centuries ago, and care should be taken that the authentic engineered banks of the canal are not damaged. If the towpath remains unaltered, the canal may again soon hold water at the 83 feet elevation, so that canal boats can clear the 48" water pipe at 80.5 feet elevation that now crisscrosses the bed of the canal. Richmond City Councilman Parker Agelasto has put in a Capital Improvement Plan (CIP) budget request for funding the rewatering of the James River and Kanawha Canal west from Tredegar.

Any assessment of the James River and Kanawha Canal that bisects Venture Richmond's proposed amphitheater must carefully consider the comparative rarity of the resources. While in the entire United States only a handful of canals have survived from the 18<sup>th</sup> century, such as the Erie and the Schuylkill, there is no shortage of outdoor music venues in Richmond. Outdoor music performances in Richmond are held at Dogwood Dell, Maymont, and Mayo's Island. Venture Richmond already operates the music venue on the nearby Brown's Island, which at 5.8 acres is more than an acre larger than the proposed amphitheater below the Virginia War Memorial. Other cities would be envious of having an authentic canal dating from 1785, for which George Washington served as the founding president; it is unfortunate that in Richmond the historic James River and Kanawha Canal must be defended from damage for such trivial reasons as amphitheater sight-lines and the ease with which the grass is mowed.

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<sup>4</sup> "History of the Canal in Richmond," pamphlet, Jack Pearsall Collection

<sup>5</sup> 3<sup>rd</sup> Annual Report, James River and Kanawha Canal Company, December 11, 1837, Film 372, Library of Virginia

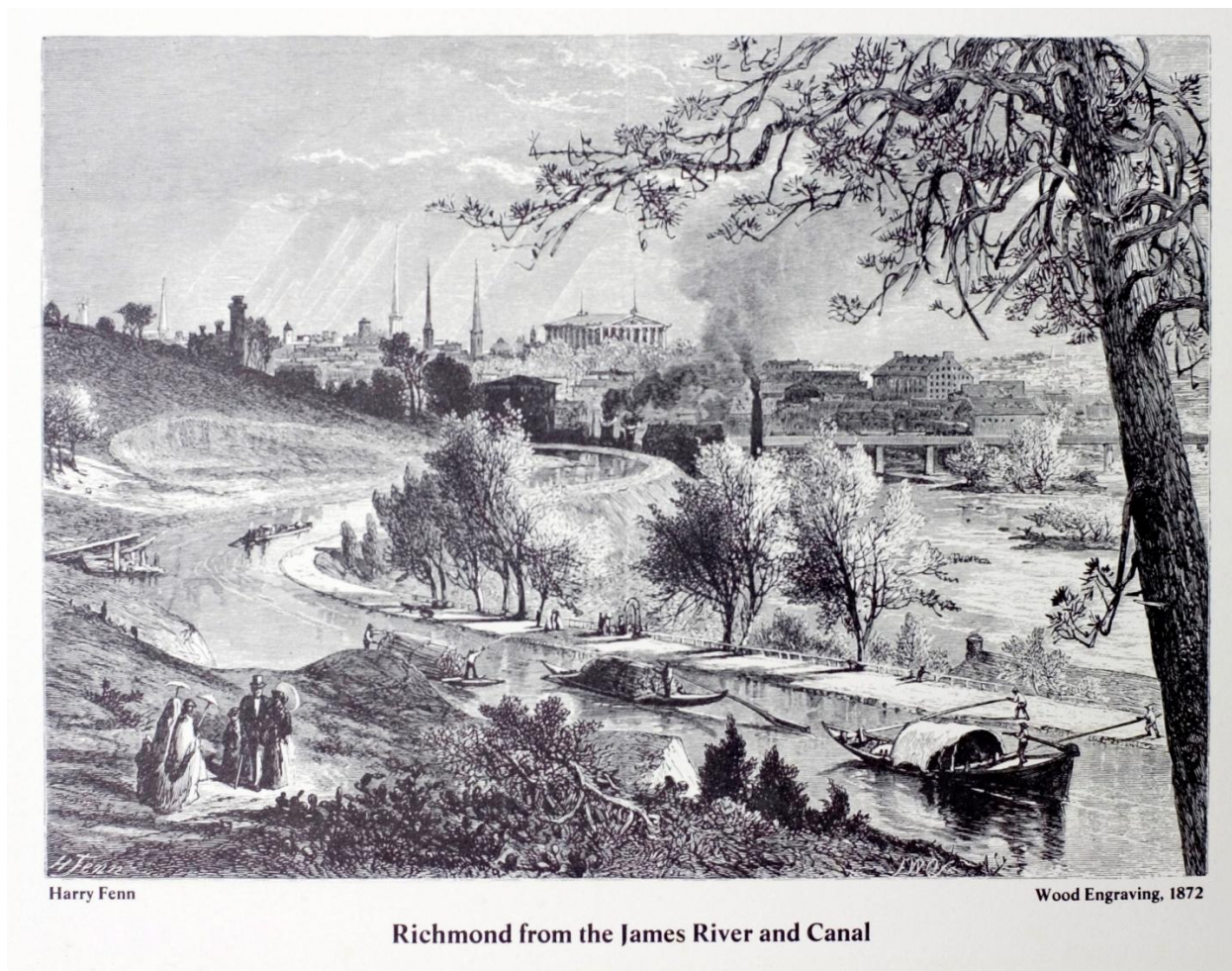
<sup>6</sup> Henrico Deed Book 6, page 260, Library of Virginia

<sup>7</sup> Survey of Harvie Property, Henrico Plat Book 3, Page 417, Library of Virginia

<sup>8</sup> Cross Section of Prism, James River Canal, R. D. Trimble, Tredegar Papers, Box 32, Folder 6, Accession Number 23881, 24808, Archives, Library of Virginia; C&O Records, 755.43 c2 1936 (10), Archives, Library of Virginia

In 2012, the Richmond City Council recognized the importance of the canal by authorizing \$385,000 to protect the canal with a bridge spanning the canal in the construction of the new 2<sup>nd</sup> Street Connector road; the site of Venture Richmond's proposed amphitheater is adjacent to the 2<sup>nd</sup> Street Connector.

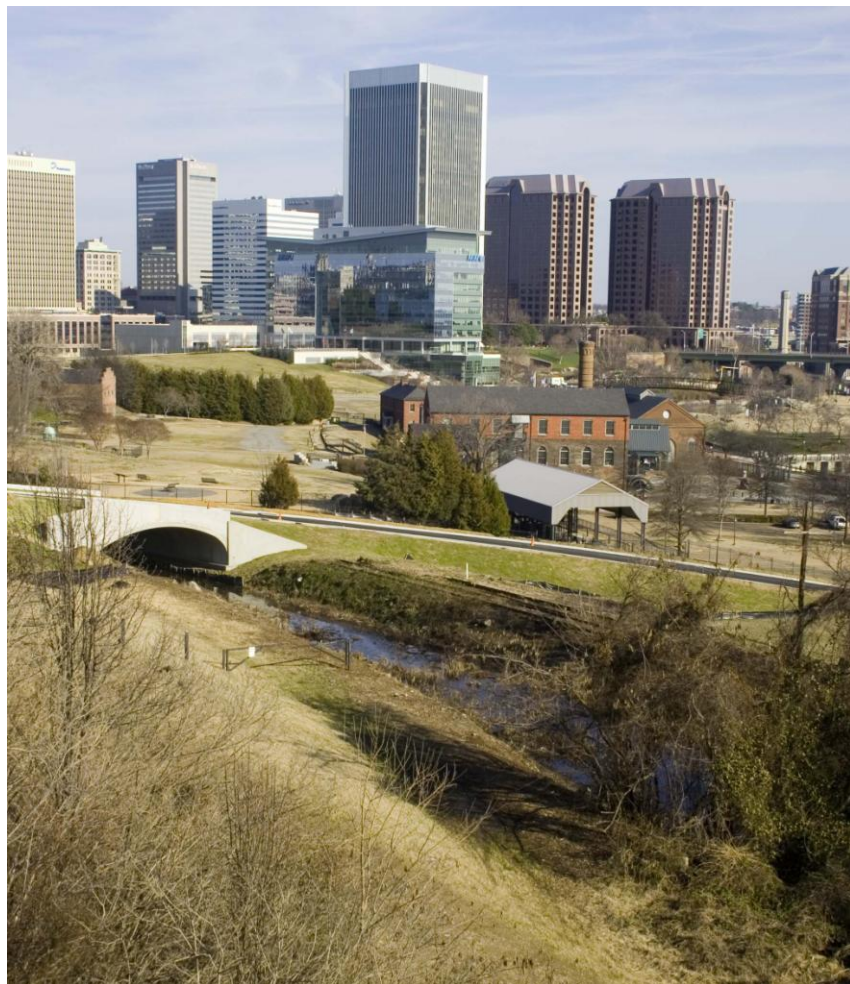
*(It is regrettable that Venture Richmond's historical consultant did not avail himself of the extensive information regarding the canal available at the Library of Virginia, including the Tredegar Papers, C&O Records, Henrico deeds and plats, the annual reports of the James River and Kanawha Canal Company, or include in his research the exhaustive archaeological survey of the Tredegar property found in the 1992 Raber Associates report.)*



(Figure 3.) *Richmond from the James River and Canal*, 1872. The James River and Kanawha Canal was a remarkable engineering achievement and one of the most picturesque and iconic features associated with Richmond in the late 18<sup>th</sup> and 19<sup>th</sup> century. The James River and Kanawha Canal has been listed on the National Register of Historic Places and the Virginia Landmarks Register since 1981. (Source: Library of Virginia)

## **The historic site:**

Venture Richmond, a public private partnership for which Richmond Mayor Dwight Jones serves as President, is applying for city, state and federal approval to build an amphitheater on property owned by the City of Richmond, and Venture Richmond. This property is bisected by the James River and Kanawha Canal, which has been listed on the National Register of Historic Places since 1981. According to the inventory of the nomination for the canal historic district: **“The James River and Kanawha Canal Historic District comprises the present and original site of the James River and Kanawha Canal and canal towpath including a boundary of twenty-five feet to either side of these two features ... ”**<sup>9</sup>



(Figure 4.) The proposed amphitheater is in a very historically sensitive area: the James River and Kanawha Canal bisects the proposed amphitheater site and the property south of the canal is included in the Tredegar Iron Works Historic Site. The Virginia War Memorial and the Oregon Hill Historic District are directly to the north. (Source: OHHIC)

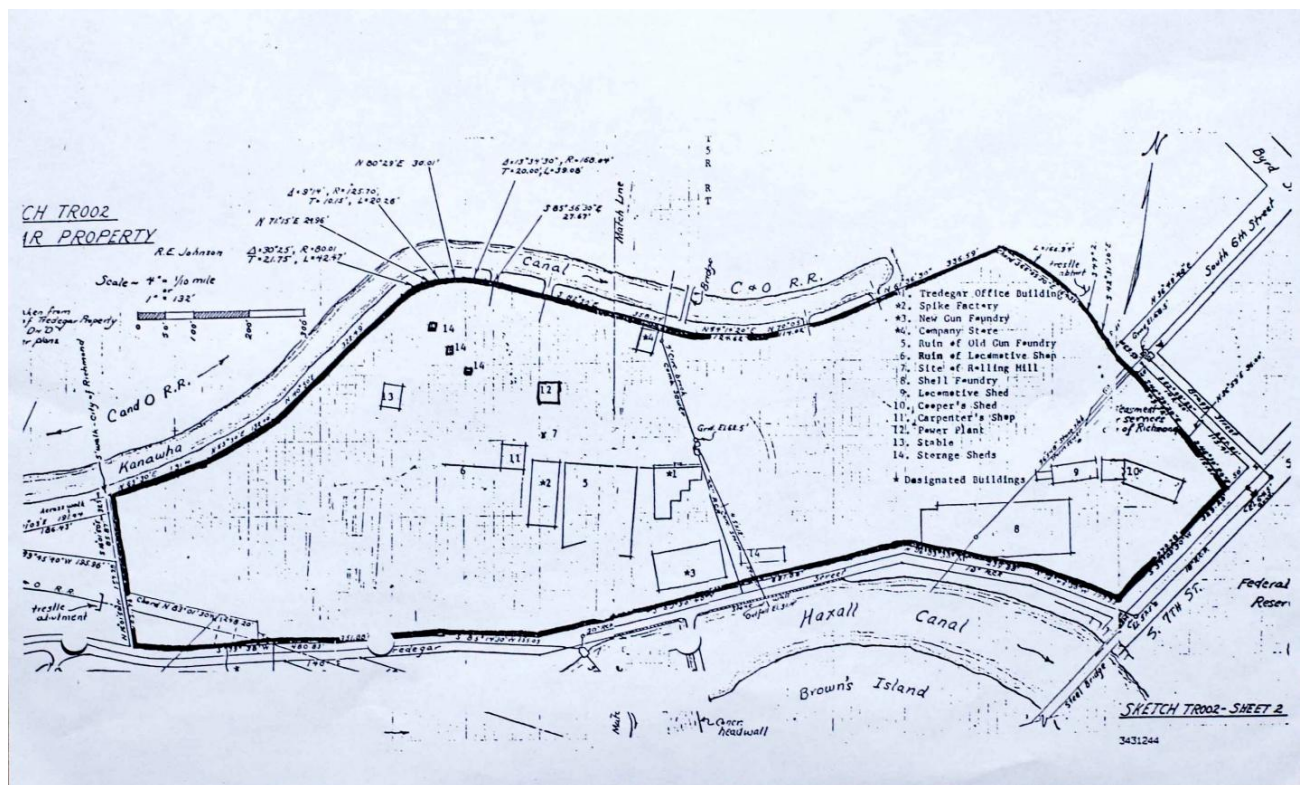
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<sup>9</sup> Nomination Report for the James River and Kanawha Canal Historic District, DHR File Id #: 127-0171, Archives, Virginia Department of Historic Resources.



Additionally, the entire Venture Richmond and City of Richmond property below the canal has been listed since 1971 on the National Register of Historic Places as part of the Tredegar Iron Works Historic Site. The Boundary Justification for Tredegar states: "The boundary of the designated area corresponds closely with boundary of the Tredegar facility at the time of its greatest national significance and includes approximately 22 acres and all extant historic Tredegar structures. This entire area is essential to preserving the character of the facility and to protecting it from encroaching commercial development to the east." The Boundary Description notes that the north boundary follows the north bank of the canal "to a 5-foot-wide city-owned cross walk."<sup>10</sup>

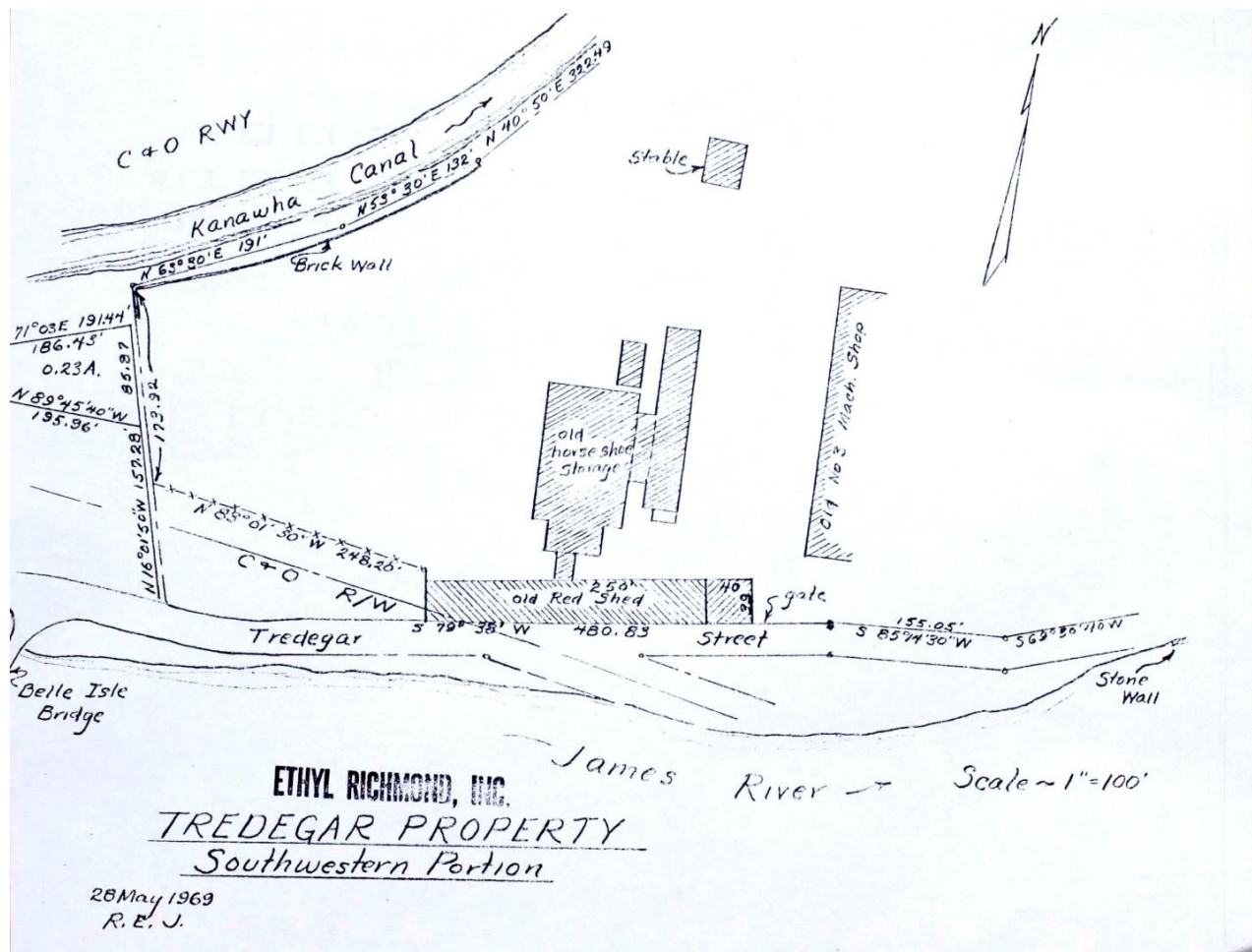
*(Venture Richmond's report neglects to address the impact of the proposed amphitheater on the Tredegar Historic Site. This is a significant omission since the all of the land proposed for the amphitheater below the canal is within the Tredegar Historic Site.)*



(Figure 5.) **Boundary Map, Tredegar Historic Site.** The boundary of the Tredegar Historic Site, listed on the National Register of Historic Places, includes the all of the proposed amphitheater land below the canal that is now owned by Venture Richmond and the City of Richmond. (Source: File 127-186, Archives, Virginia Department of Historic Resources)

<sup>10</sup> Nomination Report for the Tredegar Iron Works Historic Site, DHR File Id #: 127-186, Archives, Virginia Department of Historic Resources.





(Figure 6.) *Southwestern Portion, Tredegar Historic Site.* This map is a resource for identifying where Tredegar buildings were located on the Venture Richmond property, and for identifying the boundaries of the Tredegar Historic Site. Two of the Tredegar buildings involved with horseshoe manufactory and storage were on the site of the proposed amphitheater. (Source: File 127-186, Archives, Virginia Department of Historic Resources.)



**(Figure 7.) All of the Venture Richmond and City of Richmond property proposed for an amphitheater below the canal is included within the boundary of the Tredegar Historic Site. Archaeological resources on the site are carefully documented by the 1992 Raber and Associates report. Bulldozing this site to improve site lines would damage the authentic canal and damage archaeological resources. Raising the stage and infilling above the canal would eliminate cause to damage the canal embankment and archaeological resources. (Source: OHHIC)**



Directly to the north, across 2<sup>nd</sup> Street from the proposed amphitheater is the Virginia War Memorial, a place of profound contemplation that is listed on the Va. Landmarks Register. Venture Richmond’s proposed amphitheater for 10,000 spectators would aim the city’s largest and loudest outdoor stage directly at the Virginia War Memorial and would be incompatible with the quiet meditation required by those paying their respects at the Memorial. According to Virginia Delegate Richard Anderson, “From my perspective, the potential for noise and parking congestion from the proposed amphitheater would adversely impact the solemnity and dignity of the Virginia War Memorial.”<sup>11</sup>

Across Belvidere Street from the Virginia War Memorial is the Oregon Hill Historic District, a neighborhood with important connections to the Tredegar Iron Works and the James River and Kanawha Canal, including the surviving home of Samuel P. Parsons, who was the Superintendant of the Canal in 1840 when the canal was expanded to Lynchburg.



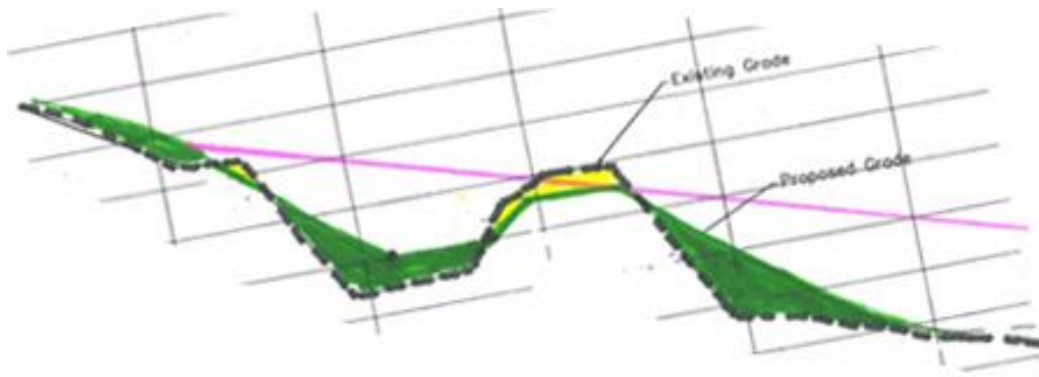
**(Figure 8.) The Virginia War Memorial is across 2<sup>nd</sup> Street from the proposed amphitheater. The amplified sound from the proposed amphitheater would be aimed up the hill at the War Memorial. It would be remarkably poor planning to position Richmond’s largest and loudest outdoor stage venue aimed directly at the Virginia War Memorial, a place of quiet, respectful meditation. (Source: OHHIC)**

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<sup>11</sup> Correspondence from Virginia Delegate Richard Anderson to the Secretary of the Richmond City Planning Commission Lory Markham, September, 6, 2013

### **Venture Richmond's amphitheater proposal:**

Venture Richmond in 2012 was given land at this very historically sensitive site. Venture Richmond is proposing an amphitheater on both sides of the canal, and intends to offer the venue for lease without restriction on the number of events annually. The sound from the outdoor stage would be aimed directly at the Virginia War Memorial (which is across 2<sup>nd</sup> Street from the proposed amphitheater) and at the Oregon Hill Historic District (which is home to many families of mixed income). Venture Richmond's plan is largely unchanged from 2012.



(Figure 9.) Venture Richmond's 2012 plan showed the canal tow path embankment lowered and cut to improve sight lines for the proposed amphitheater. (Source: Venture Richmond)

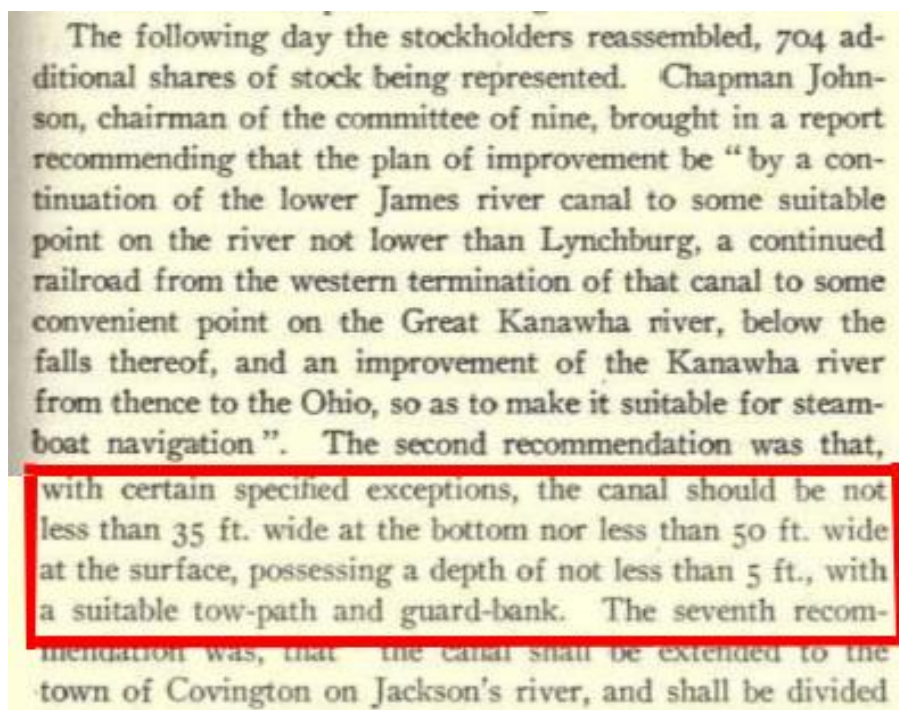


(Figure 10.) Venture Richmond's 2013 amphitheater plan shows little change from the 2012 plan. Under the 2013 plan, the canal tow path embankment would be similarly lowered and cut to improve the sight lines for the proposed amphitheater. Sight-lines could be improved by alternative means, such as by raising the stage, not allowing spectators on the tow path, and by using infill above the canal. (Source: Venture Richmond)



This vital section of the James River and Kanawha Canal, which has survived intact for over 225 years since first constructed under the presidency of George Washington, is now threatened for the trivial reasons that the structurally engineered canal tow path embankment might block someone's view of a rock concert or make it more difficult to cut the grass.

Venture Richmond is proposing to compromise the canal bank by removing half of the tow path of the James River and Kanawha Canal, from around 30 feet to 12 feet. They also propose removing the Tredegar Line railroad tracks that connected Tredegar with the Old Dominion Iron Works on Belle Isle and propose lowering the tow path to an elevation of 83 feet above mean sea level. This would have a serious adverse impact on the canal since the water elevation in the canal was historically at (or near) 83 feet above sea level. Additionally Venture Richmond proposes reducing the width of the canal from 60 to 50 feet. These inappropriate alterations would constitute a considerable and unnecessary adverse impact upon the historic resource, weaken the canal structurally, and alter the authentic character and dimensions of the canal.



The following day the stockholders reassembled, 704 additional shares of stock being represented. Chapman Johnson, chairman of the committee of nine, brought in a report recommending that the plan of improvement be "by a continuation of the lower James river canal to some suitable point on the river not lower than Lynchburg, a continued railroad from the western termination of that canal to some convenient point on the Great Kanawha river, below the falls thereof, and an improvement of the Kanawha river from thence to the Ohio, so as to make it suitable for steamboat navigation". The second recommendation was that, with certain specified exceptions, the canal should be not less than 35 ft. wide at the bottom nor less than 50 ft. wide at the surface, possessing a depth of not less than 5 ft., with a suitable tow-path and guard-bank. The seventh recommendation was, that the canal shall be extended to the town of Covington on Jackson's river, and shall be divided

(Figure 11.) Venture Richmond's consultant erroneously misrepresented that the 1835 specifications for expanding the canal to Lynchburg were the original specifications for building the canal in Richmond in 1786. The citation noted by Venture Richmond's consultant was from a report of the meeting of the Board of James River and Kanawha Company in 1835, from Wayland Dunaway's, *The History of the James River and Kanawha Company*. These specifications were for expanding the canal half-a-century after the original canal at the falls of the James was built. There is no documentation that the canal near Tredegar was ever 50 feet wide, but was widened from 40 to 60 feet in 1838. (Source: Dunaway, Wayland, *The History of the James River and Kanawha Canal*, Columbia University, New York, 1922, pages 118-120 and pages 163-167)

(Venture Richmond misrepresents that it is “restoring” the historic canal to the original specifications used in the construction of the canal in the 18<sup>th</sup> century. But a careful check of the reference cited for these specifications [*History of the James River and Kanawha Canal*, Wayland Dunaway, 1922] indicates that these specifications cited were actually recommendations presented half-century later for the expansion of the canal to Lynchburg and beyond, as presented at the stockholders meeting of the James River and Kanawha Company in 1835.<sup>12</sup> The section of the canal below Oregon Hill was completed a half-century before these specifications for expanding the canal to Lynchburg were presented in 1835. **It would be a tragedy if the James River and Kanawha Canal below Oregon Hill is damaged based on a misrepresentation of the proposed specifications for expanding the canal to Lynchburg in 1835, as cited in the Dunaway book.)**



(Figure 12.) The James River and Kanawha Canal bisects the site of Venture Richmond's proposed amphitheater. If the amphitheater is confined to the area below the canal, the sound from the stage would not need to be directed above the canal and at the Va. War Memorial and the Oregon Hill Historic District. (Source: OHHIC)

<sup>12</sup> Dunaway, Wayland, *The History of the James River and Kanawha Canal*, Columbia University, New York, 1922, pages 118-120 and pages 163-167





**(Figure 13.)** In 2012, the Richmond City Council approved the expenditure of \$385,000 to protect the canal by constructing this bridge over the canal as part of the construction of the 2<sup>nd</sup> Street Connector. (Source: OHHIC)

### **Canal tow path historically 30 feet wide at this site from 1801:**

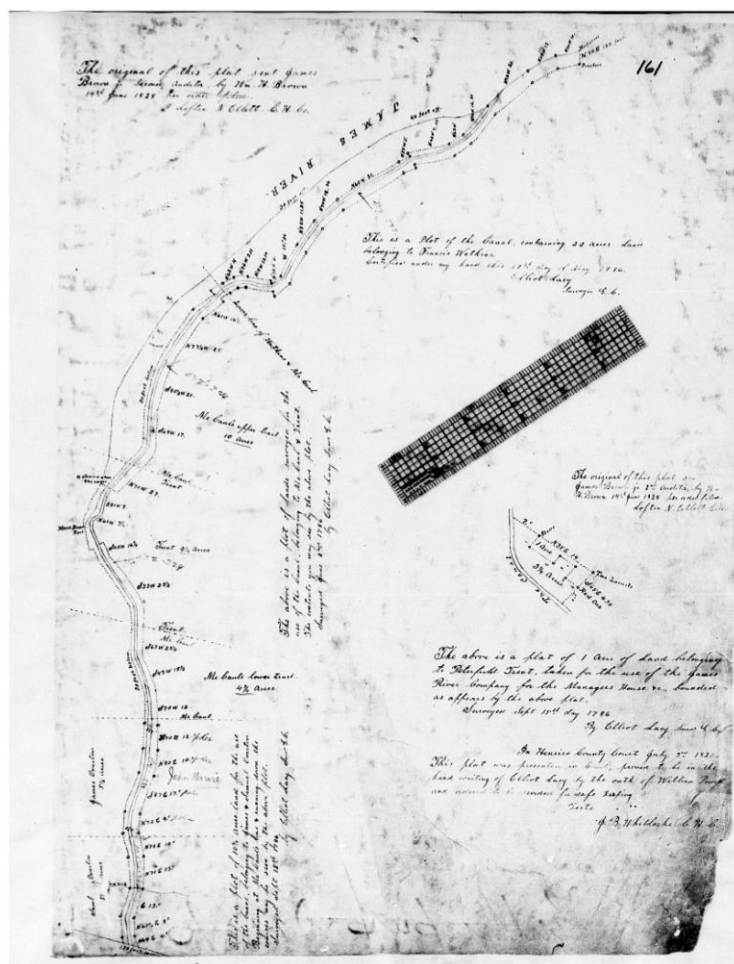
The 30 foot tow path at the current site of Venture Richmond’s proposed amphitheater dates from 1801 and was reserved by deed for John Harvie and his heirs. Harvie was a shrewd businessman and realized the potential of the water power of the canal, and the importance of reserving this public road on the tow path to access his manufacturing concerns.

A plat survives documenting the James River Company’s condemnation of land for the canal through the property owned by Overton and the adjacent landowners in 1786.<sup>13</sup> In the 1790s, John Harvie purchased land from Samuel Overton above and below the canal, (including the land where the amphitheater is now proposed to be constructed).<sup>14</sup>

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<sup>13</sup> Henrico Plat Book 5, page 161 (Library of Virginia)

<sup>14</sup> Henrico Deed Book 4, page 201, 1793, and Henrico Deed Book 5, pages 39-42, 1796 (Library of Virginia)



(Figure 14.) This plat shows property surveyed in 1786 at the falls of the James for condemnation by the James River Company for the canal. The plat includes the survey by Elliot Lacy on September 15, 1786 of the canal right-of-way through the Overton family's property (lower left), which was purchased by John Harvie through several deeds in 1793 and 1796. The land purchased by John Harvie from the Overton family includes the land now proposed for Venture Richmond's amphitheater. (Source: Henrico Plat Book 5, Page 161, Library of Virginia)

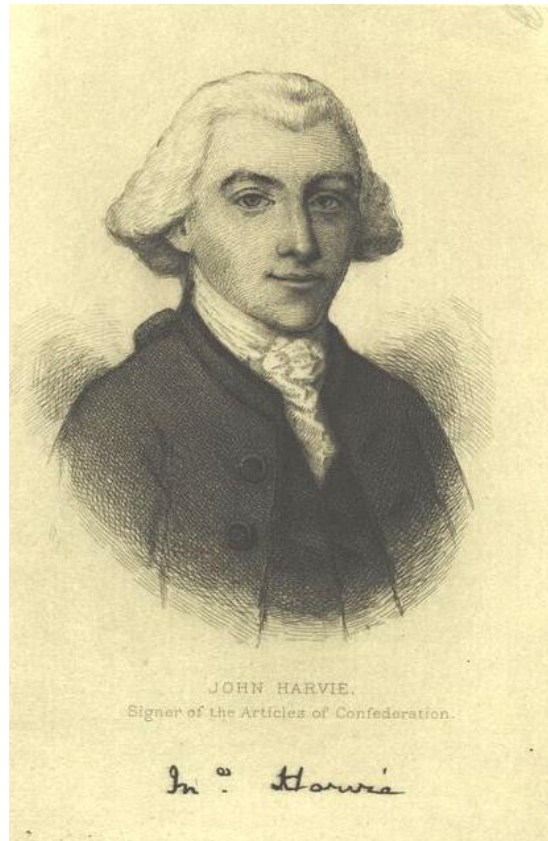
John Harvie was a noted Virginia patriot whose father was the guardian of the young Thomas Jefferson.<sup>15</sup> Coincidentally, in 1776 Harvie succeeded his friend Jefferson as Delegate from Virginia to the 2<sup>nd</sup> Continental Congress. Harvie was one of five representatives to sign in 1778 the Articles of Confederation of the new nation on behalf of the state of Virginia.<sup>16</sup> On August 20, 1785, Harvie was elected a Director of the James River Company at the organizational meeting during which George Washington was elected as the president of the canal company.<sup>17</sup>

<sup>15</sup> Jefferson's earliest surviving letter was written on Jan. 14, 1760 to his guardian John Harvie, Sr. (Founders.Archives.Gov)

<sup>16</sup> Biographical Directory of the United States Congress (Congress.Gov)

<sup>17</sup> Dunaway, Wayland, *History of the James River and Kanawha Company*, Columbia University, New York, 1922, page 26.

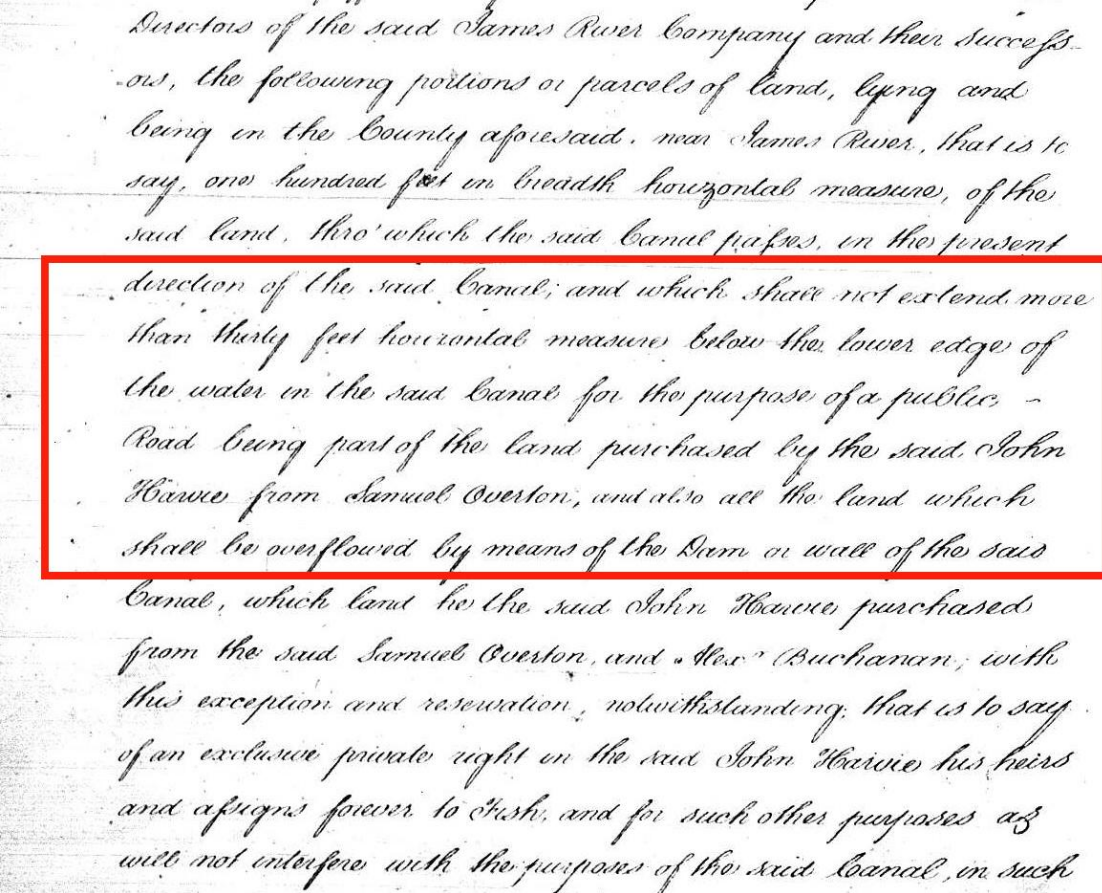




(Figure 15.) Col. John Harvie, a lawyer and merchant, was a Virginia Delegate to the Continental Congress 1777-1778, the Mayor of Richmond 1785-1786, and the Secretary of the Commonwealth 1788-1789. On August 20, 1785 John Harvie was elected as a founding director of the James River Company, under the canal company's presidency of George Washington. By 1796, Harvie owned the land on both sides of the canal [including the land where an amphitheater is now proposed]. (Source: Albert Rosenthal etching, New York Public Library)

(Figure 16.) In 1778, Col. John Harvie was one of five Delegates to sign the Articles of Confederation of the new nation on behalf of the State of Virginia. (Source: National Archives)

At the beginning of the 19<sup>th</sup> century, the James River Company made plans to create the upper basin (also known as Harvie's Pond) and to enlarge the canal tow path embankment as a "Dam" to hold back this large amount of water. On June 26, 1801, the James River Company purchased from John Harvie and his wife Margaret, "one hundred feet in breadth horizontal measure, of the said land, thro' which the said canal passes ... and also all the land which shall be overflowed by means of the Dam or wall of the said canal..." Astute businessman that he was, John Harvie made this sale contingent on the conditions that he and his heirs would have the right "to Fish" and that he and his heirs would have the right to a thirty foot road on the canal tow path: **"which shall not extend more than thirty feet horizontal measure below the lower edge of the water in the said Canal for the purpose of a public Road ..."**<sup>18</sup>



Directors of the said James River Company and their Successors, the following portions or parcels of land, lying and being in the County aforesaid, near James River, that is to say, one hundred feet in breadth horizontal measure, of the said land, thro' which the said Canal passes, in the present direction of the said Canal; and which shall not extend more than thirty feet horizontal measure below the lower edge of the water in the said Canal for the purpose of a public Road being part of the land purchased by the said John Harvie from Samuel Overton, and also all the land which shall be overflowed by means of the Dam or wall of the said Canal, which land he the said John Harvie purchased from the said Samuel Overton, and Messrs Buchanan; with this exception and reservation, notwithstanding that is to say of an exclusive private right in the said John Harvie his heirs and assigns forever to fish, and for such other purposes as will not interfere with the purposes of the said Canal, in such

(Figure 17.) In this 1801 deed, John Harvie reserved for himself and his heirs a 30 foot "public Road" below the lower edge of the water of the canal at the location of what is now Venture Richmond's proposed amphitheater. Harvie's heirs continued to own this property with the 30 foot "public Road" access in the 1860s, throughout the canal's primary period of significance. The current 30 foot wide tow path, on what is now Venture Richmond's proposed amphitheater site, was established by this 1801 deed. (Source: Henrico Deed Book 6, page 260, Library of Virginia)

<sup>18</sup> Henrico Deed Book 6, page 260, June 26, 1801 (Library of Virginia)

The 1801 deed between Harvie and the James River Company is a key document. It documents the Company's purchase of land for what became known as Harvie's Pond, documents the widening of the tow path embankment to serve as a dam to hold back the water from Harvie's Pond, and documents the 30 foot wide "public Road" that Harvie reserved for himself and his heirs on the widened tow path embankment water dam. A complete transcription of the important 1801 Harvie deed is as follows [emphasis added]:

"This Indenture, made this twenty sixth day of June, in the year one thousand eight hundred and one, between John Harvie of the County of Henrico, and Margaret his wife of the one part, and the president and Directors of the James River Company of the other part. Witnesseth that the said John Harvie and Margaret, his wife for and in consideration of the sum of one dollar to them in hand paid by the said President, and Directors, before the sealing and delivery of theses Presents, the receipt whereof they the said John Harvie and Margaret his wife do hereby acknowledge, and thereof do acquit the said President and Directors of the said James River Company, have granted bargained and sold aliened enfeoffed and confirmed, and by these presents do grant bargain and sell alien enfeoff and confirm, unto the said president and Directors of the said James River Company and their successors, the following portions or parcels of land, lying and being the county aforesaid, near James River, that is to say, one hundred feet in breadth horizontal measure, of the said land, thro' which the said Canal passes, **in the present direction of the said Canal, and which shall not extend more than thirty feet horizontal measure below the lower edge of the water in the said Canal for the purpose of a public Road being part of the land purchased by the said John Harvie from Samuel Overton, and also all the land which shall be overflowed by means of the Dam or wall of the said Canal,** which land he the said John Harvie purchased from the said Samuel Overton and "Alex" Buchanan with this exception and reservation notwithstanding: that is to say of an exclusive private right in the said John Harvie his heirs and assigns forever to Fish and for such other purposes as will not interfere with the purposes of the said Canal, in such part of the pond of water in the Valley comprehended in the land hereby conveyed, as shall be the hundred feet above and parallel to the lower line of the said Canal. To have and to hold the hereby bargained and sold premises under the exception and reservation aforesaid, to them the said President and Directors of the said James River Company and their successors and assigns the only proper use and behoof of them the said president and Directors of the James River Company and their successors and assigns forever. And the said John Harvie for himself his Heirs Executors and Administrators doth hereby Covenant with the said president and Directors of the James River Company and their successors, that he the said John Harvie and his heirs, the hereby bargained and sold premises, under the condition and reservation aforesaid, to them the said President and directors of the James River company and their successors, will forever warrant and Defend. In Testimony whereof the said John Harvie and Margaret his wife have hereunto subscribed their names and affixed their seals the day and year first above mentioned.

John Harvie

Sealed and Delivered in the presence of Reuben Buller, Robert Pollard, John Fox Jr Charles Pollard

At a Court held for Henrico County at the Courthouse on monday the seventh day of December 1801

This Indenture was proved by the oaths of Reuben Buller, John Fox Junior, and Charles Pollard witnesses thereto and Ordered to be Recorded.

Teste A. O. Craig"<sup>19</sup>

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<sup>19</sup> Henrico Deed Book 6, page 260, June 26, 1801 (transcription courtesy of C. Wayne Taylor, Esq.)

John Harvie died in 1807, but the 1868 Pleasants map indicates that Harvie's heirs continued to own the land below the canal through 1868.<sup>20</sup> Therefore, their deeded right to maintain the 30 foot "public Road" on the tow path of the canal was continuous throughout the entire period of the canal's primary significance. As a result of Harvie's 1801 deed, the 30 foot wide tow path survives today at the location of Venture Richmond's proposed amphitheater.

In reserving the 30 foot public road below the lower edge of the water in the canal, Harvie was considering the vital access on his property for supporting milling operations below the canal. On June 26, 1801, the same day that he signed this deed granting land to the James River Company while reserving the 30 foot "public Road" on the canal tow path, Harvie signed a water agreement whereby he acquired the right to take water from the James River Canal to be used for the Virginia Company's Manufacturing Mills. Again, the extra-wide south embankment of the canal at this location was referred to as "the water dam":

**Witnesseth, That the said President and Directors, ... have granted ... unto the said John Harvie, his heirs ... forever, full right, liberty, power and privilege, to fix a trunk in the dam or wall of the James River canal ...**

**...forever, ninety square inches of water from the James River Canal, to be taken at the water dam where the water is now used for the Virginia Company's Manufacturing Mills, lately belonging to the said John Harvie ...**<sup>21</sup>

In 1848 the Harvie family commissioned a survey of their property below Oregon Hill that spanned the canal. This is the same land for which in 1801 the James River Company guaranteed to Harvie and his heirs access by a 30 foot "public Road" at the south edge of the water of the canal. This property survey is very detailed and clearly identifies **the canal tow path as 30 feet wide.**<sup>22</sup>

*(Venture Richmond has inaccurately stated that the tow path at this location was only 12 feet wide until it was enlarged to accommodate railroad tracks in the 1880s. The Harvie deed of 1801 and Harvie plat of 1848 confirm that the tow path on Harvie's property was 30 feet wide throughout the canal's primary period of significance. The current 30 foot width of the tow path is historically authentic for this location and was used to access the manufacturing industries on Harvie's land below the canal. )*

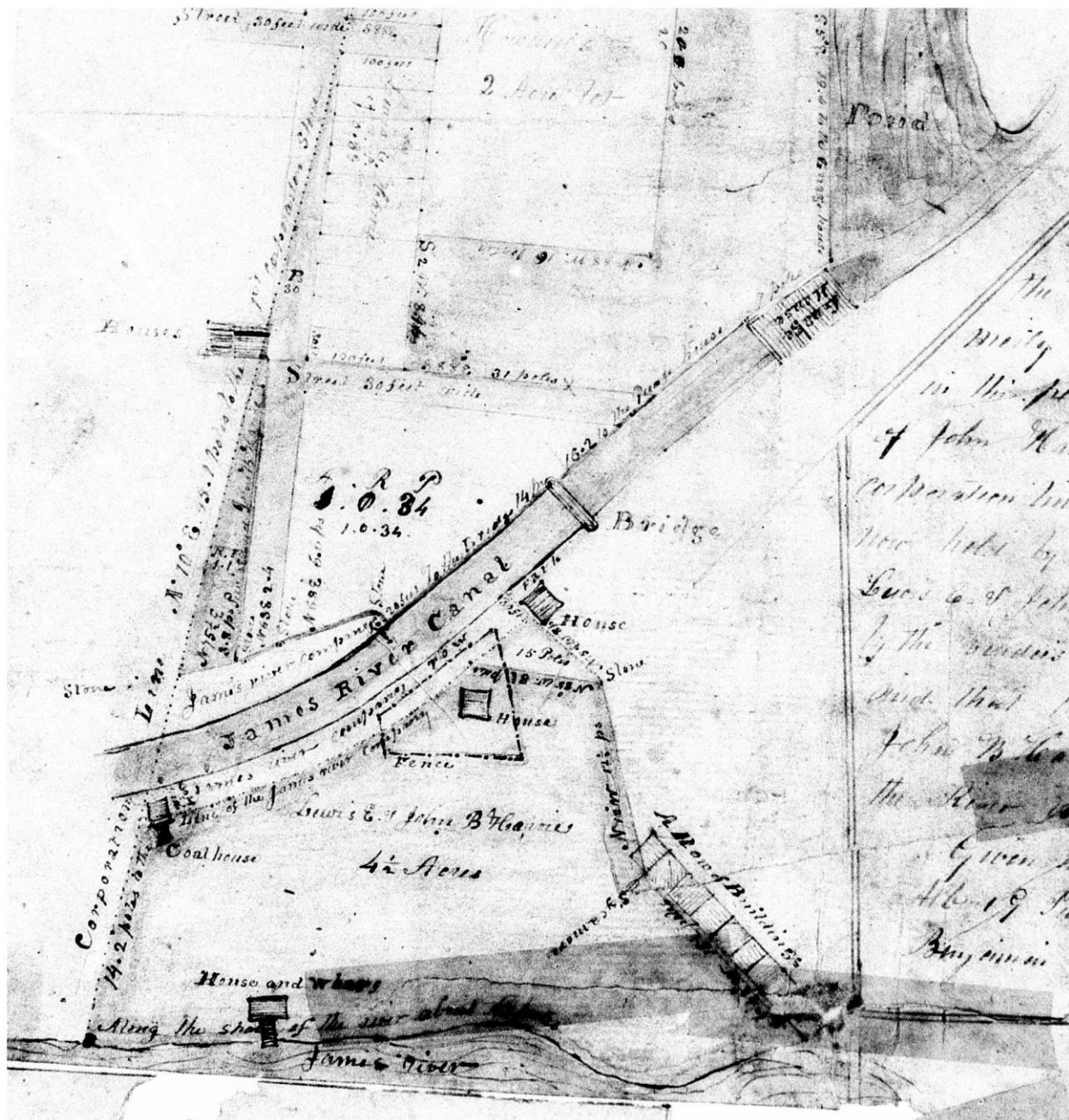
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<sup>20</sup> C&O Collection, Map surveyed by J. Pleasants and drawn by M. Bates, 755.44 C2 (Library of Virginia)

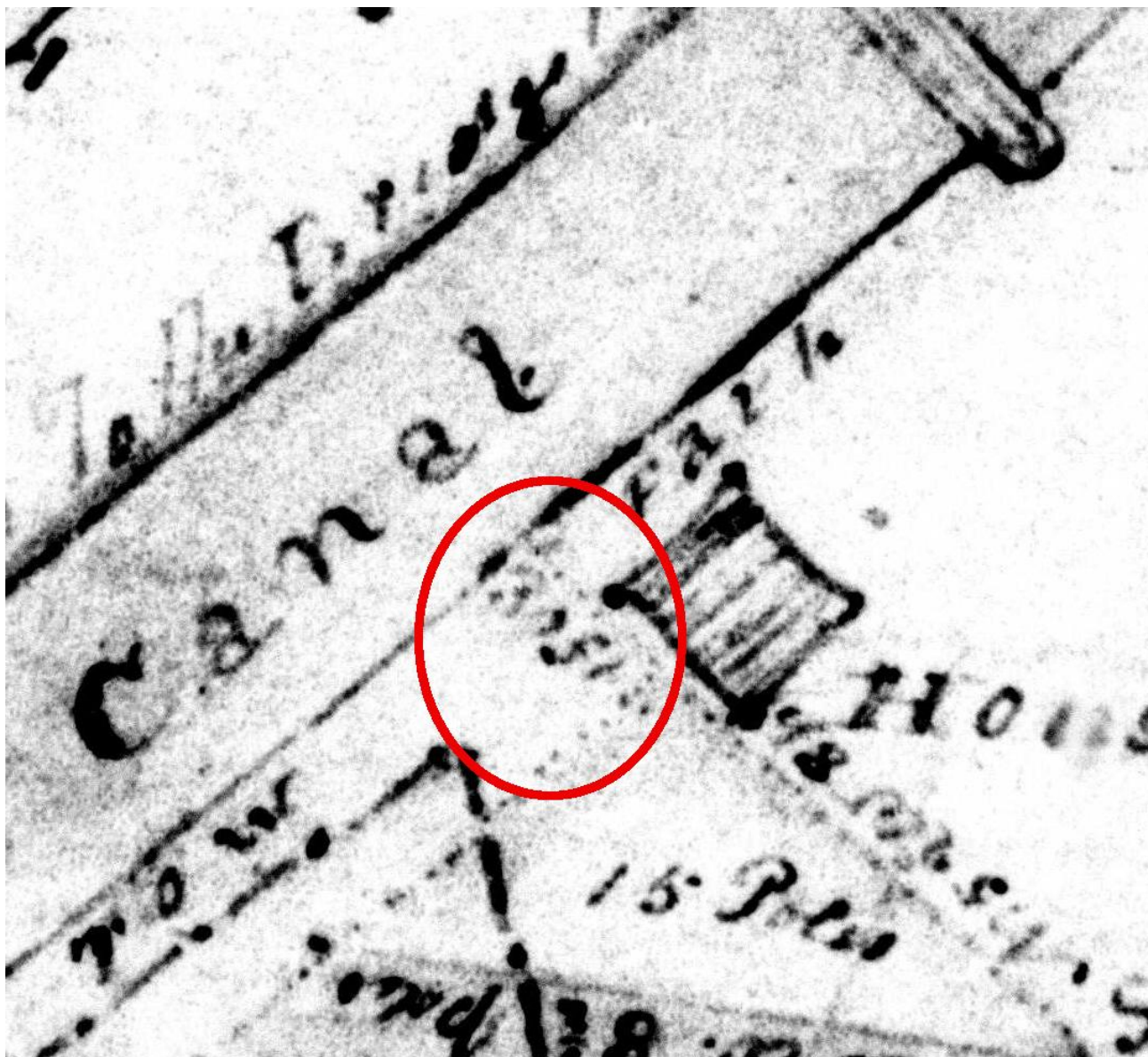
<sup>21</sup> Chronology of the Cunningham Grants, page 51, Tredegar Papers, Box 32, Folder 4, Accession Number 23881, 24808 (Library of Virginia)

<sup>22</sup> Henrico Plat Book 3, Page 417, 1848 (Library of Virginia)



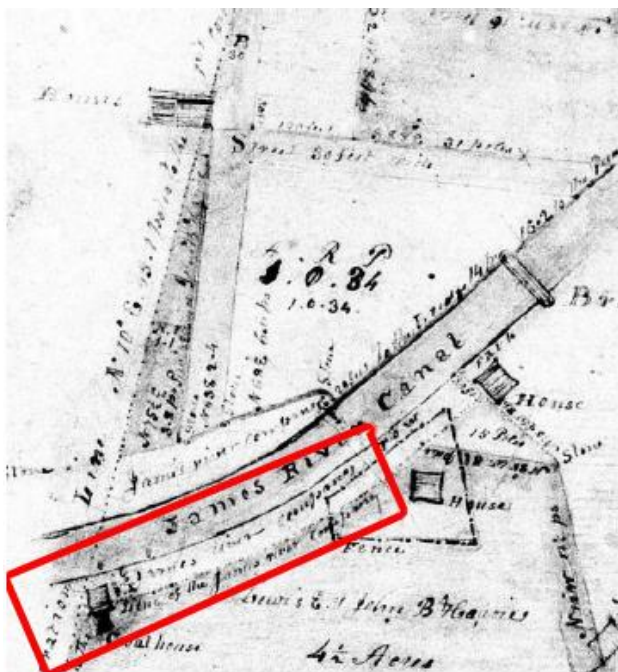


(Figure 18.) In this detailed land survey of the Harvie property in 1848, the canal tow path is noted as 30 feet wide. The 30 foot “public Road” on the tow path embankment was guaranteed to Harvie and his heirs by the 1801 deed by which the James River Company acquired the land for Harvie’s Pond and for the widened south embankment of the canal that served as a substantial water dam to hold back the water of Harvie’s Pond. A coal house, accessed by the 30 foot wide public road, is shown on the west side of the 1848 Harvie plat. John Harvie served as a founding director of the James River Company, and early on recognized the extraordinary milling and manufacturing potential of his land below the canal by harnessing the water power of the canal. Harvie’s property included the current site of what is now Venture Richmond’s proposed amphitheater, and the tow path today at this location is still about 30 feet wide as reserved in the 1801 deed and illustrated in the 1848 plat. (Source: Henrico Plat Book 3, Page 417, 1848, Library of Virginia)



(Figure 19.) The tow path of canal at site of what is now Venture Richmond's proposed amphitheater was 30 feet wide, as shown in this detail of the 1848 plat of the Harvie family property. This plat corresponds with the 1801 deed whereby Harvie reserved for himself and his heirs a 30 foot "public Road" at the south edge of the water in the canal. Harvie's heirs made a point of showing the 30 foot road easement on the 1848 plat that they commissioned. The house shown on this plat detail may have been a canal toll house. (*Venture Richmond's consultant inaccurately asserted that the tow path was not widened to 30 feet at this location until the 1880s to accommodate the railroads, and inaccurately asserted that there were no buildings near the tow path that could have accounted for stone in the clay layer of the canal west of the 2<sup>nd</sup> Street Connector. This 1848 plat shows a building near the location of where the 2<sup>nd</sup> Street Connector was recently constructed.*) (Source: Henrico Plat Book 3, Page 417, 1848, Library of Virginia)



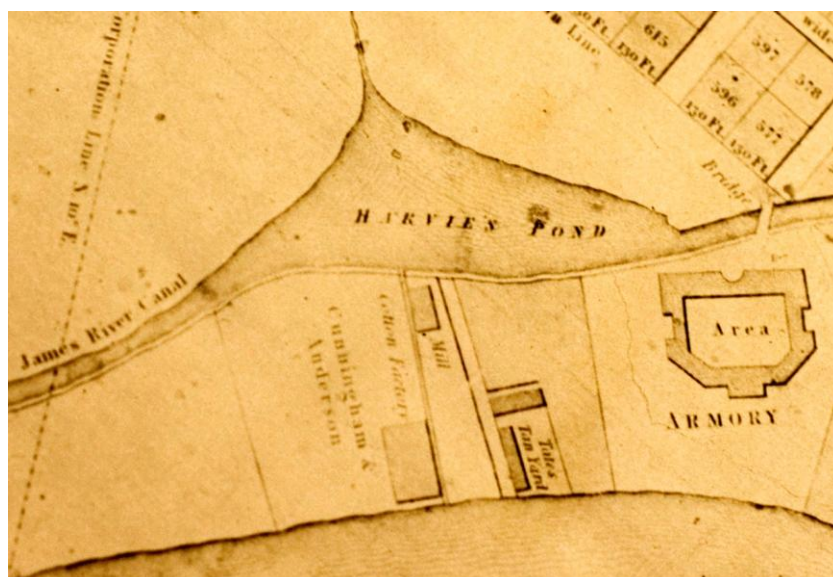


1848 Henrico Plat (Source: Library of VA)



1876 Beers Atlas (Source: Library of Congress)

(Figure 20.) The tow path on Harvie's 1848 Henrico Plat, noted as 30 feet wide, closely corresponds with the dimensions of the tow path as shown on the 1876 Beers Atlas. An 1801 deed guaranteed Harvie a 30 foot "public Road" at the water's edge of the south bank of the canal. Harvie's 1848 Henrico Plat verifies that the tow path was 30 feet wide during the canal's primary period of significance.



(Figure 21.) This detail from the 1835 Bates Atlas illustrates the large Harvie Pond, also known as the Penitentiary or Upper Basin, before the sides of the pond were shored up with stone later that decade. From 1801, the canal's south embankment at this location served as a substantial dam to hold back the water from Harvie's Pond that was fed by various creeks and springs. (Source: Library of Virginia)



The 1848 Morgan map was dated the same year as the far more detailed survey of Harvie's property in Henrico Plat Book 3, Page 417, in which the canal tow path adjacent to Harvie's property was identified as 30 feet wide. The Morgan map shows the many springs and creeks that fed the several acres of water that made up Harvie's Pond. A "substantial embankment" for the south bank of the canal was required to hold back this volume of water in the natural ravine between Oregon Hill and Gamble's Hill.



(Figure 22.) This 1848 Morgan Map is dated the same year as the more detailed Harvie Plat, on which the tow path is identified as 30 feet wide. The creek and spring, for which Spring Street was named, is shown feeding Harvie's Pond. In 1838, when the canal at this location was widened to 60 feet, Harvie's Pond was reshaped and reinforced with stone. The Belvedere Estate is shown on this map, enclosed with a serpentine brick wall. Belvedere was home in 1798 to John Harvie who was a founding Director of the James River Company. (Source: Library of Virginia)



(Figure 23.) This Civil War-era photograph shows the extent of Harvie's Pond, which was fed by springs and creeks filling the natural ravine that separates Oregon Hill from Gamble's Hill. The tow path on the site of what is now Venture Richmond's proposed amphitheater was from 1801 a "substantial embankment" to hold back this large volume of water. Harvie reserved a 30 foot "public Road" on the substantial water dam embankment to access his mills and coal house. (Source: Levy and Cohen photograph, Library Company of Philadelphia)

Harvie's Pond was about 151,000 square feet in size before 1880.<sup>23</sup> The Raber-Tredegar report confirms that the downhill, south bank of the canal at this location was a "substantial embankment" or dam to hold back the extensive volume of water in Harvie's Pond:

**The relatively broad expanse between the canal and river here, generally 450-500 feet, provided ample room for mill construction, generally above flood levels, with nearly 50 feet of head. Damming of the large creek proved especially important for early local industrialists. The canal had to cross the ravine and creek, using one of two basic engineering options: an aqueduct or large culvert passing the creek under the canal, or a substantial embankment on the downhill or southern side, incorporating the creek's waters into the canal. The latter choice was made...**<sup>24</sup>

<sup>23</sup> Roswell D. Trimble testimony, C.O. vs. Tredegar, Stenographer's transcripts, 1935, Box 41, Tredegar Papers, Accession Number 23881, 24808

<sup>24</sup> Raber Associates, *Historical and Archaeological Assessment Tredegar Iron Works Site*, prepared for Valentine Museum and Ethyl Corporation, page 9, Lyle Browning Collection





(Figure 24.) This 1868 map, surveyed by Joseph Pleasants for the canal company, includes the site of what is now Venture Richmond's proposed amphitheater. The June 26, 1801 deed, whereby John Harvie reserved for himself and his heirs a 30 foot "public Road" at the water's edge on the south bank of the canal, is referenced in a notation printed in pencil within the canal: "From John Harvie, strip 100' wide, and ground covered by water of upper basin Extending from lower Belvidere line to Harvie's lower line June 26, 1801." As indicated by the owners' names on this map, Harvie's heirs continued to own the property below the canal through 1868. The Harvie family had continuous right to the 30 foot "public Road" on the tow path, reserved by deed for Harvie and his heirs, from the date of the June 26, 1801 deed throughout the entire period of the canal's primary significance. (Source: Library of Virginia)

The importance of Harvie's 1801 deed, whereby he reserved for himself and his heirs a 30 foot public road on the tow path of the canal, was not lost on the canal company. In 1868, Joseph Pleasants made a detailed map of the canal and adjacent properties for the Board of the James River and Kanawha Company. Pleasants made a notation in pencil within the canal [at the location of what is now Venture Richmond's proposed amphitheater] referencing the June 26, 1801 John Harvie deed, which reserved the "30 foot public Road" for Harvie and his heirs. **"From John Harvie, strip 100' wide, and ground covered by water of upper basin Extending from lower Belvidere line to Harvie's lower line June 26, 1801."**<sup>25</sup>

<sup>25</sup> C&O Collection, Map surveyed by Joseph Pleasants and drawn by M. Bates, 755.44 C2, 1868, Library of Virginia



Subsequent to the survey of 1786 and before 1801 John Harvie purchased of Saml Breton two pieces of property extending together and on both sides of the Canal (which was not mentioned in the deeds) from the Belvidera line to the line marked on the Map "Harvie's lower line. For a nominal consideration Harvie conveyed to the J.R.Co on the 26<sup>th</sup> of June 1801 one hundred feet in width between those two points and <sup>also</sup> the ground which was covered by the water of the Canal in the valley where their upper Basin now is. There being some rights of ownership reserved in the deed I do not consider it perfectly clear as to the fee simple title in the overflowed land, though the company have an undoubted right there, <sup>to</sup> as long as it is covered with water.

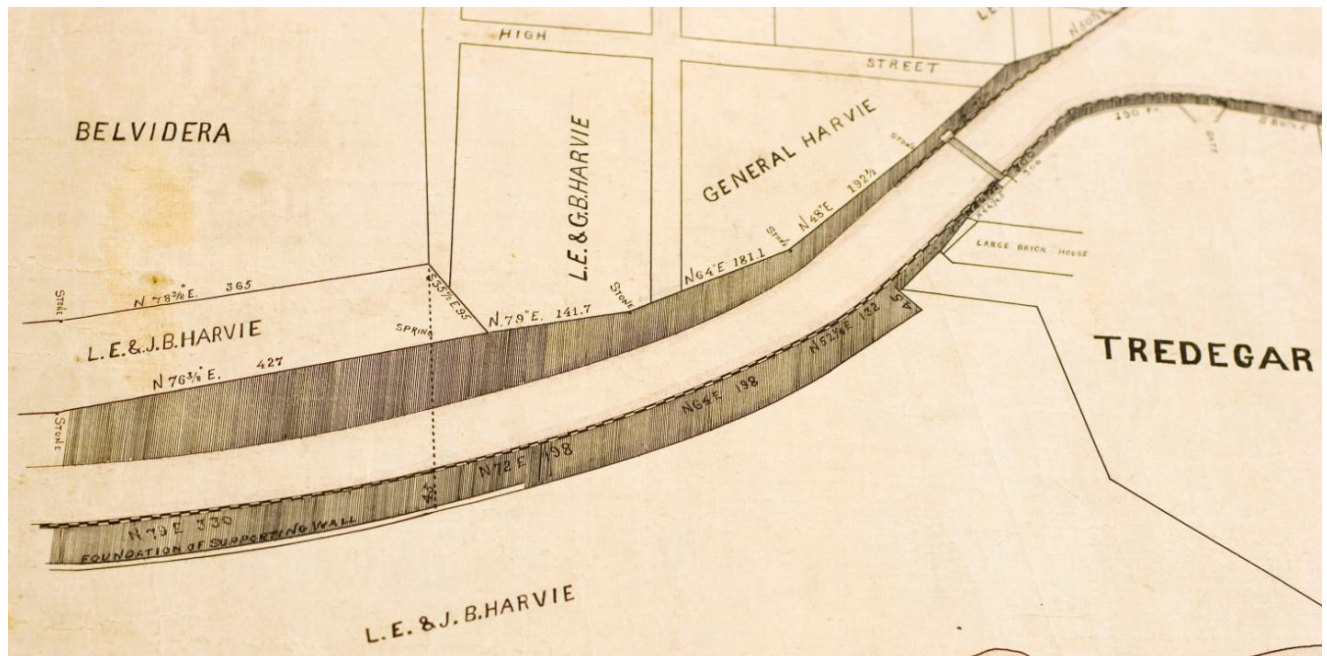
Harvie also conditioned for a road <sup>part of the 100 feet</sup> on the lower side of the Canal to be not more than 30 feet wide from the edge of the water.

(Figure 25.) In 1868 Joseph Pleasants wrote a detailed letter describing the map that he produced for the canal company the same year. In this letter, Pleasants referenced Harvie's June 26, 1801 deed and noted that, "Harvie also conditioned for a road -- part of the 100 feet -- on the lower side of the canal to be not more than 30 feet wide from the edge of the water ..." Pleasants penciled a notation within the canal on his 1868 map referencing the June 26, 1801 deed, by which Harvie reserved the 30 foot "public Road." (Source: Library of Virginia)

Remarkably, not only has the 1868 map of the canal surveyed by Joseph Pleasants survived, but also a several page letter has survived in which Pleasants interpreted the map for the Board of the James River and Kanawha Company. In this 1868 letter, Pleasants makes reference to John Harvie's June 26, 1801 deed that he had included as a notation in his map. Pleasants wrote to the Board of the James River and Kanawha Company, "Harvie also conditioned for a road -- part of the 100 feet -- on the lower side of the canal to be not more than 30 feet wide from the edge of the water."<sup>26</sup> While Harvie's 30 foot public road easement was not in question, there was some discussion about who would own the overflowed land of Harvie's Pond if it ceased to be covered with water. The 30 foot width of the tow path to accommodate the deeded 30 foot "public Road" has survived from 1801 to the present at the location where Venture Richmond now proposes to build an amphitheater.

<sup>26</sup> Letter from Joseph Pleasants to the Board of the James River and Kanawha Company, 1868, James River and Kanawha Company records, Misc. Reel 4329, Library of Virginia

In 1880, a copy was made by the C&O Railroad of the fragile 1868 Pleasants map.<sup>27</sup> The map shows the wide tow path above the Harvie property that was guaranteed by the June 26, 1801 deed between Harvie and the James River Company. This map provides a clearer copy of the words, “Foundation of Supporting Wall,” indicating the location of the interior wall that secured the tow path. According to the September 1, 1840 James River and Kanawha Company report, “The excavation upon this [lower] level was of an unusually difficult and expensive character. For about one half of the distance the bed of the canal was formed by excavations made in granite rock, **and for 5100 feet the tow-path embankment is supported by a massive vertical wall averaging 20 feet in height.**”<sup>28</sup> This would indicate that the authentic 30 foot tow path that survives today is supported by an internal vertical wall. The carefully engineered structure would be damaged by Venture Richmond’s current proposal to slice off half of the tow path embankment.



(Figure 26.) This is a detail of the 1880 copy, commissioned by the C&O Railroad, of the fragile 1868 Pleasants map. The map shows the wide tow path, as guaranteed to Harvie and his heirs by the June, 26, 1801 deed, adjacent to the property still owned by the Harvie family. The 1880 copy of the 1868 Pleasants map shows the “Foundation of Supporting Wall” that supports the tow path for 5100 feet west of Tredegar. This internal supporting wall would be damaged by Venture Richmond’s proposal to slice off the tow path to improve sight lines and to make it easier to mow the grass. (Source: C&O Records, 755.43 c2 1868/1880, Library of Virginia)

<sup>27</sup> C&O Records, copy of 1868 Pleasants map, 755.43 c2 1868/1880, Library of Virginia

<sup>28</sup> James River and Kanawha Company Report, September 1, 1840, Film 372, Reel 5, Library of Virginia

## Canal water elevation at or near 83 feet documented from 1841:

Venture Richmond's proposed amphitheater is on the Tredegar Iron Works Historic Site; because Tredegar relied on water from the canal to power its machinery, the water surface elevation in the James River and Kanawha Canal at this location is very well-documented. Historically, maintaining the water elevation in the canal at 83 feet above sea level was of critical importance for maintaining transportation and vital water power functions of the canal. Since 1801, numerous water leases, grants and agreements contractually ensured adequate water power for the cotton, flour, corn, and paper mills, and for Tredegar Iron Works and the state Armory near the site of the proposed Venture Richmond amphitheater. As a result of the reliable water power provided by the canal, this was one of the most important manufacturing hubs in the nation.<sup>29</sup>

TREDEGAR COMPANY GRANTS						
Grantor Grantee	Kind of Instrument	Date	Inches of Water	Head in Feet	Cu.Ft. per Second	Annul. Rent
JOHN HARVIE GRANTS.						
James River Co. to John Harvie	Perpetual Lease	June 26, 1801	90 sq. in.	4½		133 L. 12 s.
James River Co. to John Harvie	Perpetual Lease	June 26, 1801	Trunk 4 inches square	1		
James River Co. to Thos. Rutherford This instrument supersedes two Harvie Grants.	Perpetual Lease	July 8, 1812	120 sq. in.	3	8.01	\$500.00
THOMAS GREEN GRANTS.						
James River Co. to Thomas Green	Perpetual Lease	June 16, 1828	100 cu. in	4	7.80	\$400.00
James River Co. to Thomas Green	Perpetual Lease	Letter dated June 16, 1829	100 inches	4	7.80	400.00
Thomas Green to J. B. Harvie	Assignmt. by letter	Jan. 1, 1830	200 inches			
J. B. Harvie to Edward Cunningham & Rehd. Mfg. Co.	Assignmt. by letter	Feb. 20, 1832	200 inches			
Jas. River Co. to Edward Cunningham & Rehd. Mfg. Co. Jas. River Co. consents to assignment of two Green Grants.	Agreement	June 7, 1832	200 inches			
OTHER GRANTS.						
Jas. River Co. to Edward Cunningham	Perpetual Lease	July 2, 1828	100 cu. in	4	7.80	500.00
Jas. River and Kanawha Co. to Tredegar Co.	Perpetual Lease	Jan. 1, 1869			69.76	4,494.08
Neola Iron Works		--- 1852			4.59	266.22
L. D. Crenshaw or Hazell Crenshaw Co.		May 3, 1854	50 sq. in.	4½	3.40	171.64
ARMORY GRANT						
Commonwealth of Va. or David Ross		Nov. 27, 1798	160 sq. in.	4½	13.20	1,220.00
Total					122.56	\$8,011.94

(Figure 27.) This list documents the many water leases and agreements for various manufacturing enterprises near Tredegar dating from 1801. (Source: Tredegar Papers, Box 31, Folder 5, Accession Number 23881, 24808, Library of Virginia)

<sup>29</sup> Chronology of the Cunningham Grants and Chronology of the James River Canal, Tredegar Papers, Box 32, Accession Number 23881, 24808, Library of Virginia



The water elevation in the canal is of critical importance today. **Richmond City Councilman Parker Agelasto in October 2013 submitted a Capital Improvement Plan (CIP) budget request to re-water the canal from Tredegar west to Maymont and Boshers' Dam so that canal boats can again travel in the James River and Kanawha Canal.** The canal banks must hold a water elevation of 83 feet above mean sea level in order for canal boats to clear the 48" water transmission pipe in the bed of the canal that is at an elevation of 80.5 feet.<sup>30</sup> Venture Richmond is proposing to reduce the elevation of the tow path to 83 feet, which would be the same elevation as the historical water level in the canal. Obviously, the water level cannot be at the same elevation as the top of the tow path; heavy rain and boat traffic would cause the canal to overflow its banks. Flooding was historically the major cause for damage to the canal.

The water level in the canal has historically fluctuated by as much as 18 inches during a month's time,<sup>31</sup> and the canal banks must safely hold back the water at its highest level during those fluctuations. The September 1, 1840 annual report of the James River and Kanawha Company indicated that the water elevation on the lower level of the canal fell off by no more than 6 inches to the mile: **"...the embankments are calculated for a maximum depth of water of eight feet near the feeder, gradually falling off at the rate of six inches to the mile by the supply of water power to mills and manufactories in its progress down the level."**<sup>32</sup> Therefore, historical canal readings at Tredegar and the Hollywood Trestle (called Park Hydro today) should be within three inches of the water elevation at the current site of Venture Richmond's proposed amphitheater.

As will be presented in this report, detailed surveys from Virginia Board of Public Works maps, surveys found in the Tredegar Papers, and surveys in the C&O Railroad Records at the Library of Virginia, indicate that the water elevation in the canal at Tredegar was at or near 83 to 84 feet above sea level from 1841-1936. The engineering survey for the 1990 Whitman, Requardt & Associates study for restoring the canal, and the data for the Park Hydro facility of the City of Richmond Combined Overflow Sewer Project 3 indicate that a water elevation in the canal of about 83 feet elevation above mean sea level is the normal water surface elevation. A water surface elevation of 83 feet will be necessary for canal boats to clear the large 48 inch water pipe now in the bed of the canal when the canal is rewatered west of Tredegar.

*(Venture Richmond's consultant inaccurately asserted that the water surface elevation in the canal was historically at 81 feet based solely on an un-authoritative notation in the margins of the 1848 Morgan map. Not only was the Morgan Map margin notation undocumented, but it indicated an elevation of 81 feet above LOW TIDE rather than above MEAN sea level.)*

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<sup>30</sup> Park Hydro schematic, Department of Public Utilities, City of Richmond

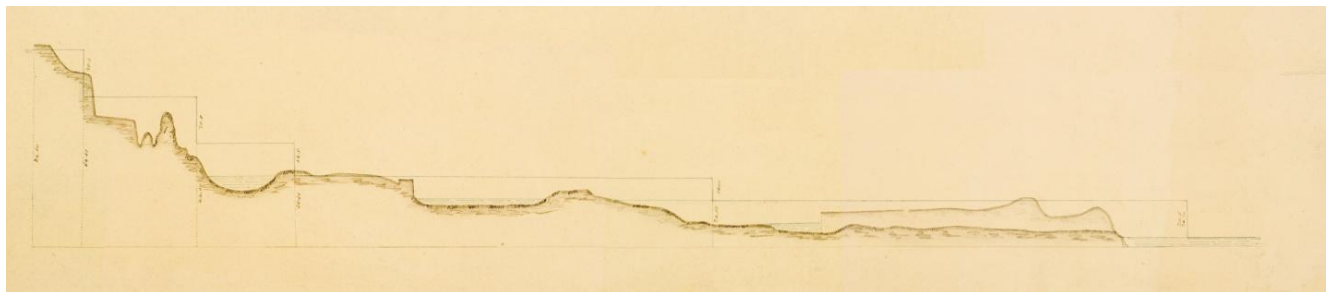
<sup>31</sup> C&O Records, Charts, June 23, 1881 through September 17, 1881, Accession Number 4364, Library of Virginia

<sup>32</sup> Report of the James River and Kanawha Company, September 1, 1840, Film 372, Reel 5, Library of Virginia

The 1841 and 1857 Virginia Board of Public Works (BPW) maps provide detailed and authoritative information on the water surface elevation in the James River and Kanawha Canal during the period of the canal's greatest significance. These elegant and precise surveys are a far more reliable and authoritative reference for the historical water surface elevation in the canal than the undocumented notation in the margin of the 1848 Morgan map, cited by Venture Richmond's consultant.

**The 1841 BPW map indicated that the water surface elevation in the James River and Kanawha Canal at the location of the proposed lock east of Tredegar was 84.5 feet.<sup>33</sup>** It would have been essential to accurately survey the maximum water elevation in the canal at the site of a proposed lock, the primary function of which was to accommodate differing water elevations. While the 1841 BPW map is unsigned, it may have been overseen by noted engineer Claudius Crozet, who was the Principal Engineer for the Virginia Board of Public Works during this period.<sup>34</sup> Crozet's detailed annual reports to the Board of Public Works confirm the meticulous accuracy of his survey work for the expansion of the state's canals and railroads.

The 1841 BPW map is of particularly interest because it included a proposed lock just to the east of Tredegar, as one of several locks that would have connected the James River and Kanawha Canal with the tidewater level of the James and what is now known as the Haxall Canal. The Historic Richmond Foundation raised the idea of such a lock in a 1988 canal study.<sup>35</sup> At the 4<sup>th</sup> annual meeting of the James River and Kanawha Company, it was noted that "...the consent of the legislature is necessary in order to enable the company to locate across the armory lot the line of locks leading from the canal to the head of tide water..."<sup>36</sup> Apparently this consent was not forthcoming because the line of locks were not built.



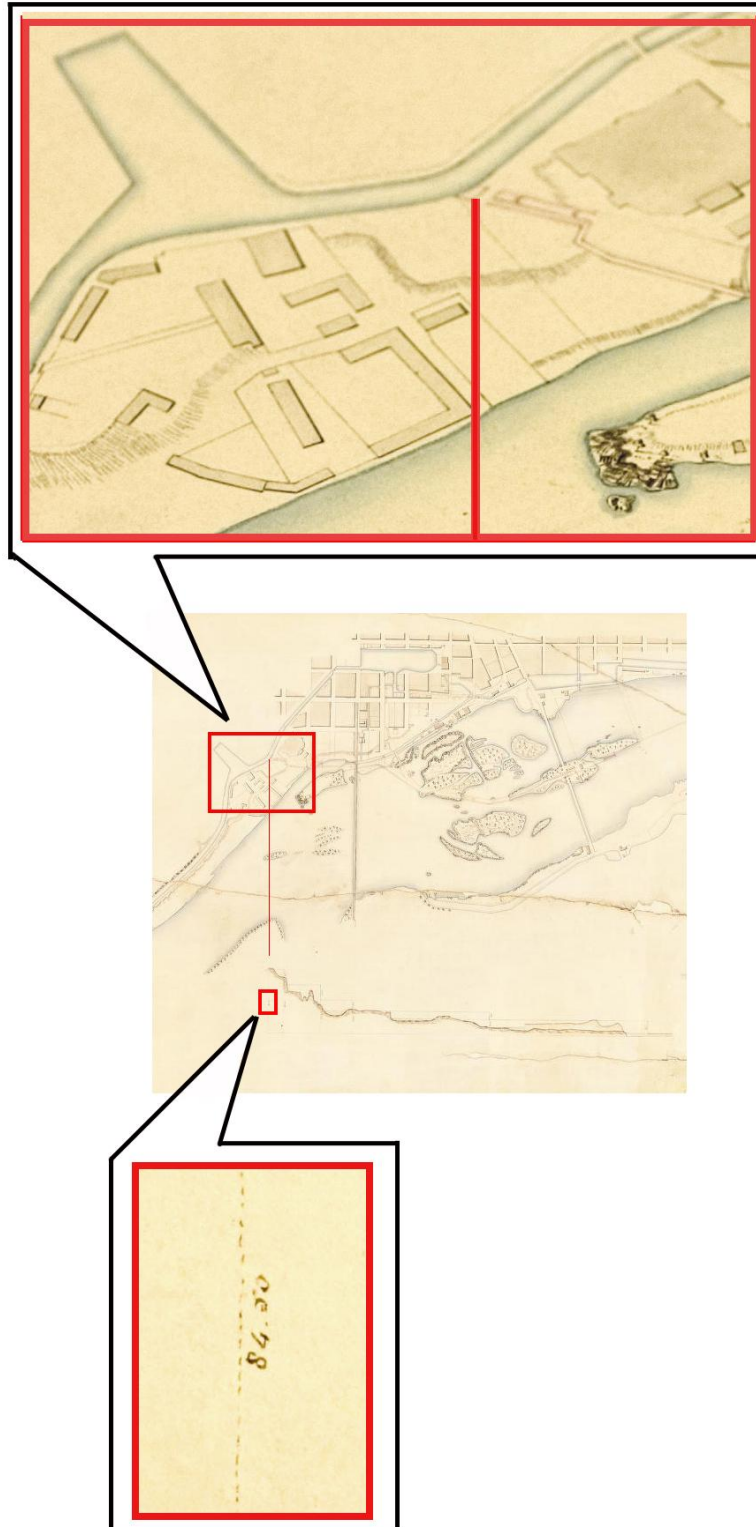
**(Figure 28.) The 1841 Board of Public Works map indicated accurate water surface elevations in the canal at various points where new locks were proposed. The water surface elevation in the canal at a proposed lock east of Tredegar was at 84.5' elevation. (Source: Board of Public Works map, 1841, BPW 496 (5.1), Library of Virginia)**

<sup>33</sup> Board of Public Works map, 1841, BPW 496 (5.1), Library of Virginia

<sup>34</sup> *Biennial report of the Board of Public Works to the General Assembly of Virginia*, Richmond, 1839-1840

<sup>35</sup> Carlton Abbott & Partners, P.C., *The Richmond Canals*, Historic Richmond Foundation, 1988

<sup>36</sup> 4<sup>th</sup> Annual Meeting of the James River and Kanawha Company, page 240, December 17, 1838



(Figure 29.) The authoritative 1841 Board of Public Works map indicated that the water surface elevation in the James River and Kanawha Canal was at 84.50 feet where a lock was proposed just east of the Tredegar Iron Works. An accurate gauge of the maximum water elevation in the canal was of critical importance when planning proposed locks. (Source: Board of Public Works map, BPW 496 (5.1), 1841, Library of Virginia)



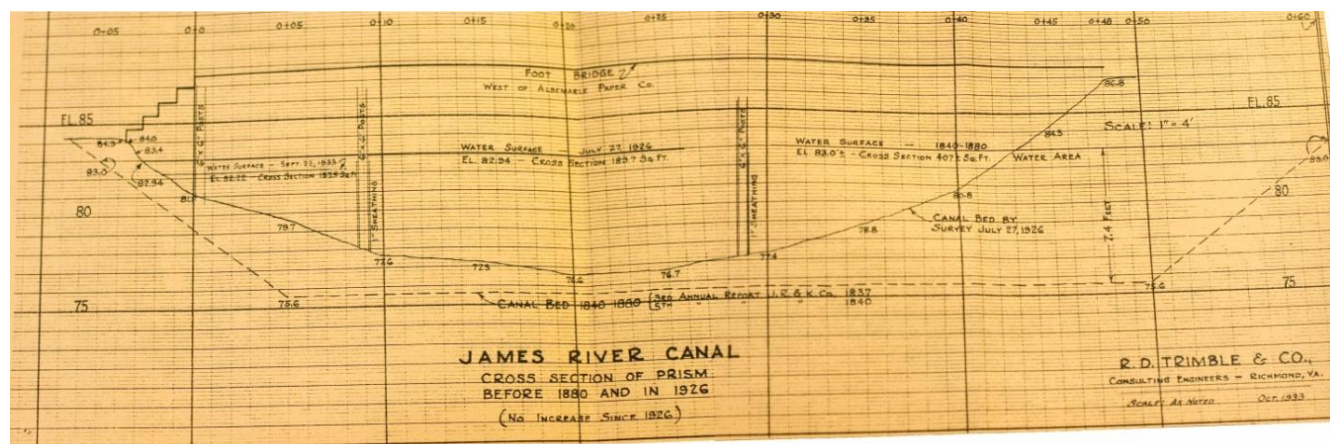
Another detailed survey of the water level in the canal during the period of the canal's primary significance was the remarkable 1857 Board of Public Works map created by Edward Lorraine. This map precisely shows the water level at every lock along the entire canal. **The water surface elevation at the Richmond level in the 1857 BPW map is shown as 84 feet above "Mean Tide,"** corresponding closely with the authoritative 1841 BPW map.<sup>37</sup>



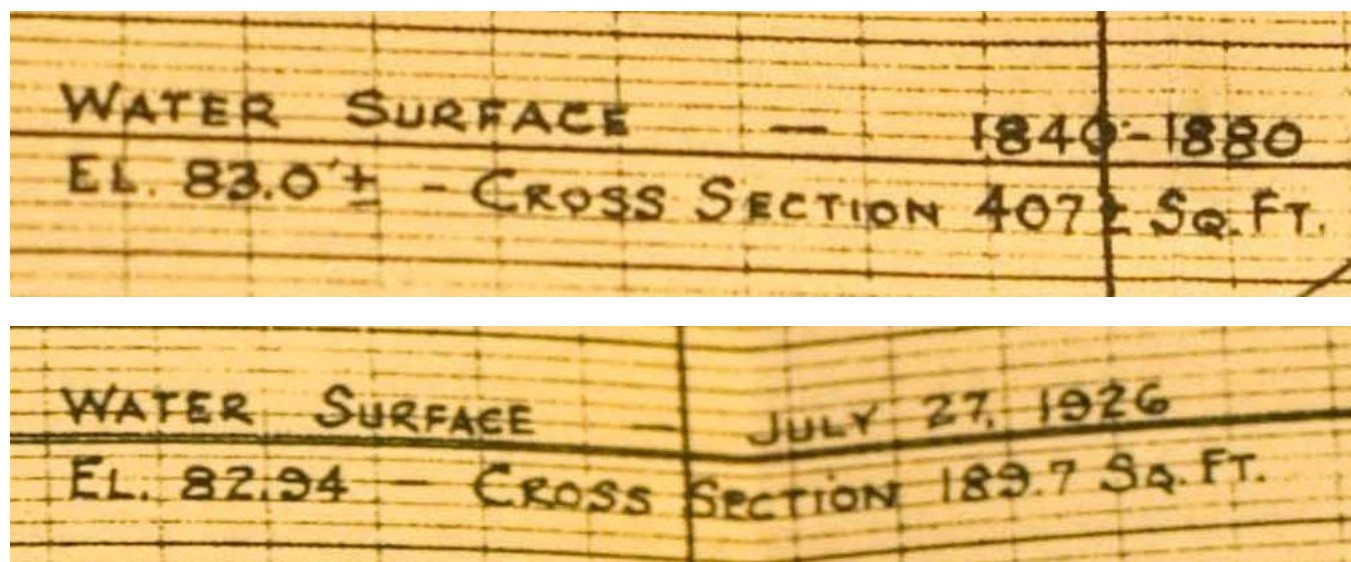
(Figure 30.) This very detailed 1857 Board of Public Works map indicates that the water elevation of the canal at the Richmond level was 84 feet above "Mean Tide." (Source: Edward Lorraine, *Map and profiles of the James River and Kanawha Canal and its connections*, BPW 496 (9), 1857, Library of Virginia)

<sup>37</sup> Edward Lorraine, Board of Public Works map, 1857, BPW 496 (9), Library of Virginia

In 1933, Tredegar Iron Works and the C&O Railroad were involved in litigation regarding the water volume in the canal. Tredegar relied upon this water volume to power all of its machinery. **R.D. Trimble carefully documented the water leases and water levels in the canal for Tredegar; his research indicated that the water elevation in the James River and Kanawha Canal at Tredegar was at or near 83 feet elevation from 1840 through 1880 and in 1926.**<sup>38</sup>



(Figure 31.) R. D. Trimble cross section of the prism of the canal at Tredegar before 1880 and in 1926, documenting the water surface in the canal at Tredegar was at or near 83 feet elevation from 1840-1880 and in 1926. (Source: Tredegar Papers, Box 32, Folder 6, Acc. No. 23881, 24808, Library of Virginia)



(Figure 32.) Details of the R. D. Trimble cross section of the canal at Tredegar documenting the water surface in the canal at or near 83 feet elevation from 1840-1880 and at 82.94 feet elevation in 1926. (Source: Tredegar Papers, Box 32, Folder 6, Acc. No. 23881, 24808, Library of Virginia)

<sup>38</sup> Tredegar Papers, Box 32, Folder 6, Acc. No. 23881, 24808, Library of Virginia



In 1933 Tredegar, commissioned the most extensive engineering survey of the lower level of the James River and Kanawha Canal on record. In remarkable detail, this survey documented the water surface elevation and the sediment in the canal bed in dozens of large scaled drawings. **The detailed Tredegar survey indicated that in 1933 the water surface elevation in the canal at Tredegar was at 82.71 feet above mean sea level.**



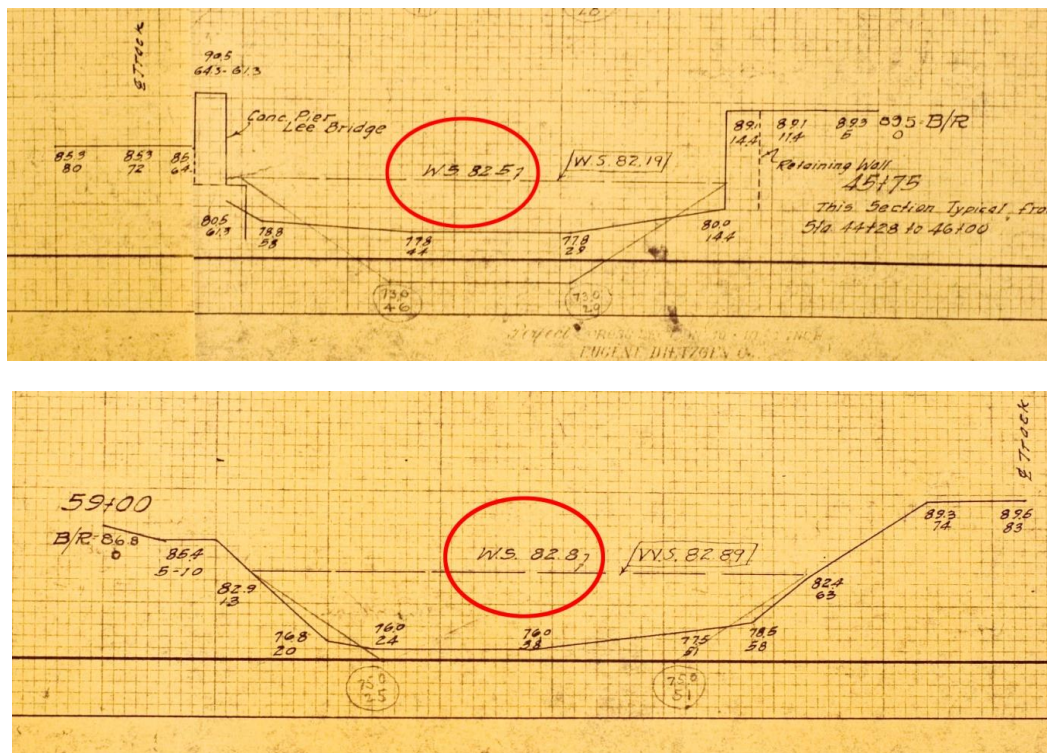
(Figure 33.) The most extensive survey of the James River and Kanawha Canal on record was undertaken by Tredegar in 1933. The profile and water surface of the canal was documented on dozens of large graphs drawn to scale. (Source: Tredegar Papers, Box 31, Tube #1, Accession Number 23881, 24808, Library of Virginia)

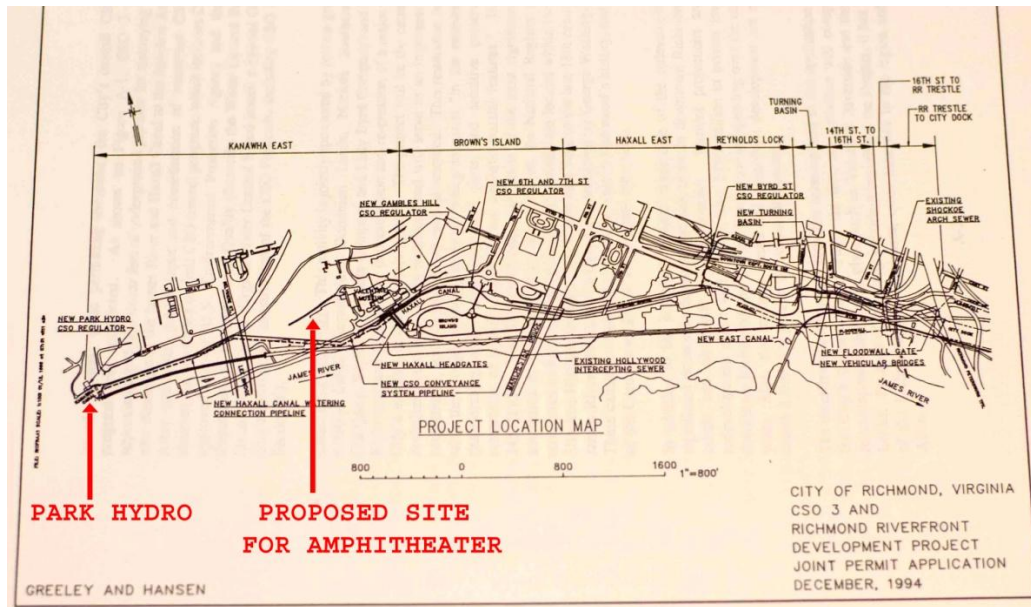


(Figure 34.) Trimble survey (and detail) documenting the water surface in the canal at 82.71 feet at Tredegar in 1933. (Source: Tredegar Papers, Box 31, Tube #1, Accession Number 23881, 24808, Library of Virginia)



The C&O Railroad also carefully documented the water level in the canal. The James River and Kanawha Canal was sold to the Richmond & Alleghany Railroad in 1880, and in 1888 the property passed into the hands of the Chesapeake and Ohio Railroad Company.<sup>39</sup> **Although Tredegar and the C&O Railroad were involved in litigation regarding Tredegar's water rights, the Tredegar and C&O documentation on the water elevation in the canal was similar.** Their dispute involved the interpretation of many water leases, the oldest dating back to John Harvie's 1801 water lease; the agreements were ambiguous because they recorded water rights in "square inches" rather than specifying the water volume that could be withdrawn from the canal. **The C&O Railroad documented that on September 18, 1936 the water elevation in the canal at the Lee Bridge [adjacent to the proposed amphitheater site] was at 82.57 feet above mean sea level and the water elevation at the Hollywood Trestle, now known as Park Hydro at Cherry Street, was at 82.87 feet.**<sup>40</sup> It is important to note that there was only a .3 foot (3.6") drop in the water elevation at the Lee Bridge [adjacent to "Tredegar Green"] from Park Hydro. One would expect the drop in the water level in the canal between Park Hydro and the Lee Bridge to be even smaller now that Tredegar is no longer withdrawing water from the canal.





(Figure 36.) The Park Hydro is an important element of the Richmond CSO Project 3. The Park Hydro is about 300 yards west of the proposed amphitheater site. The normal water level in the canal at Park Hydro was 83 feet according to the Department of Public Utilities. (Source: Department of Public Utilities, City of Richmond)



(Figure 37.) The water elevation gauge is still displayed in the James River and Kanawha Canal at the city's Park Hydro at Cherry Street, some 300 yards west of the site of the proposed amphitheater. The water level at 83 feet is visible on the water line on the wall adjacent to the gauge. All of the paint has been eroded from the gauge lower than 83 feet. The water level shown at the gauge corresponds closely with the 1936 C&O Railroad survey at this location that indicated the water surface elevation was at 82.87 feet. (Source: OHHC)



The canal water gauge still is visible in the James River and Kanawha Canal at Park Hydro, some 300 yards west of Tredegar at Cherry Street, and the water gauge indicates the water level in the canal was about 83 feet elevation above mean sea level, about the same level as reported in the 1936 C&O Railroad survey at this location. The water line is clearly evident at the 83 foot mark on the bridge abutment beside the water gauge, and the wood and markings on the gauge are discolored below the 83 foot elevation mark. According to the September 18, 1936 C&O Railroad survey, the water elevation in the canal at Park Hydro was only about 3 inches above the elevation in the canal at the Lee Bridge, adjacent to the proposed amphitheater site.

**We are fortunate that the canal water gauge has survived at Park Hydro, some 300 yards west of the location of Venture Richmond's proposed amphitheater, that indicates the water level was at about 83 feet elevation. Even more remarkable, a photograph has survived from the 1990s showing the water in the canal, with the water gauge visible in the photograph.**<sup>41</sup>

This photograph shows the water level in the canal at its normal elevation of about 83 feet above mean sea level. This photograph is visually important for assessing Venture Richmond's proposal to cut the elevation of the canal tow path to 83 feet, the actual elevation of the water surface in the canal, for an amphitheater about 300 yards east of Park Hydro.



**(Figure 38.) This 1990s photograph was taken by the City of Richmond Planning Department of the James River and Kanawha Canal at Park Hydro near Cherry Street, about 300 yards west of the site of the proposed amphitheater. In this photograph the water gauge is visible beneath the train track. (Source: VCU Libraries)**

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<sup>41</sup>Photo of the James River and Kanawha Canal, Planning Department, City of Richmond, VCU Libraries

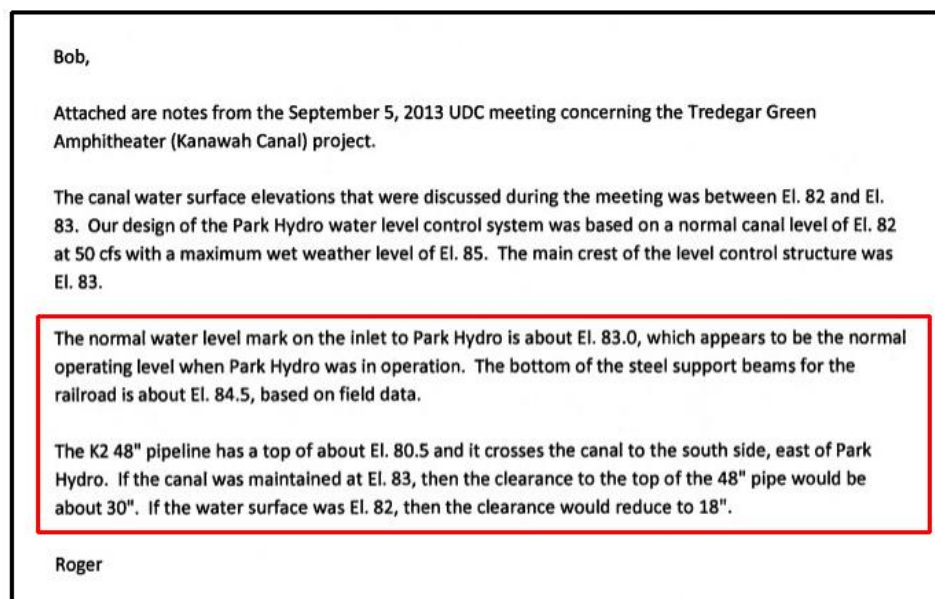




**(Figure 39.) This enhanced view of the water gauge in the city photo of the James River Canal shows the water elevation at 83 feet at Park Hydro near Cherry Street, some 300 yards west of the site of Venture Richmond's proposed amphitheater. (Source of photograph of canal: VCU Libraries; enhanced view credit: C. Wayne Taylor)**

The Park Hydro is an important element of the City of Richmond's Combined Sewer Overflow (CSO) Project 3. This \$100 million project combined funding for the infrastructure to capture Richmond's sewer overflow with funding for rewatering of the James River and Kanawha Canal and the Haxall Canal.<sup>42</sup> The Park Hydro, installed in 1998, was an essential component of the CSO project, which underwent extensive environmental and historical reviews and was required to follow the Secretary of Interior Standards.<sup>43</sup> The Park Hydro set the normal elevation of the water surface in the James River and Kanawha Canal at about 83 feet. This water surface elevation was coordinated to maintain adequate water surface elevation above the 48" Korah 2 water pipeline, which now is in the bed of the canal. The Park Hydro water level control washed out in Hurricane Gaston in August 2004, and there are city plans to restore it.

In a memorandum to the City of Richmond Director of Public Utilities Bob Steidel, Roger Cronin, the principal with the engineering firm of Greeley & Hansen, noted that **"The normal water level mark on the inlet of Park Hydro is about El. 83.0, which appears to be the normal operating level when Park Hydro was in operation ... The K2 [Korah 2] pipeline has a top of about El. 80.5 and it crosses the canal to the south side, east of Park Hydro. If the canal is maintained at El. 83, then the clearance to the top of the 48" pipe would be about 30". If the water surface was El. 82, then the clearance would be reduce[d] to 18".**<sup>44</sup>



(Figure 40.) Memorandum from Roger Cronin to Robert Steidel, Director of Public Utilities, City of Richmond, regarding the September 5, 2013 Richmond Urban Design Committee hearing for the proposed amphitheater, with the significant information that the normal water elevation in the canal at Park Hydro was at Elevation 83.0 feet, and that the 48" water pipe that crosses the canal is at an elevation of 80.5 feet. (Source: City of Richmond)

<sup>42</sup> *Joint Permit Application, CSO 3 and Riverfront Development Project*, Greeley & Hansen, June 1995

<sup>43</sup> File 92-0994, Archives, Virginia Department of Historic Resources

<sup>44</sup> Memorandum from Roger Cronin to Richmond Utilities Director Robert Steidel, Sept. 5, 2013, City of Richmond

In 1990, Richmond Renaissance, the precursor of Venture Richmond, commissioned the engineering firm of Whitman, Requardt & Associates to provide a detailed evaluation of the feasibility, including the costs and necessary improvements, of rewatering the James River and Kanawha Canal.<sup>45</sup> The study envisioned two docks for tourists to load canal boats: the eastern terminus was located precisely where now Venture Richmond has proposed an amphitheater and the western terminus was located at Maymont Park.

An important aspect of the Whitman, Requardt and Associates study was to determine the necessary water elevation in the canal for floating the canal boats. **The study determined that “... by maintaining a water surface elevation of approximate +83.0 ft. at the Haxall Gate [east of Maymont], this would provide sufficient depth for both maintenance of the canal and pipeline as well as operation of the proposed boat having a draft of between 1 and 2 feet.”** It is important to note that while the Whitman, Requardt report stated that, “... the top of the water main is at approximate elevation of +79 feet,” the later Park Hydro data indicate that top of the 48” water pipe in the bed of the canal is at an elevation of +80.5 feet.

### **3.2 Required Canal Flows**

From the physical analysis of the canal made in October 1988, the required repairs became obvious to the inspection team and through their implementation a constant level of flow can be maintained in the canal.

The hydraulic features of the canal are vital to the canal boat concession. In addition, the proper depth of flow is required to maintain the current degree of impermeability of the canal as well as to cover the 48 inch water main which is designed for continuous submersible service. A flow of less than 350 cfs would have part of the watermain exposed (Reference September 9, 1986, report by Whitman, Requardt and Associates to the City of Richmond). It should be noted that the City's 48-inch water main has been built with some reported slight variations from the designed levels and is not in the same relative position in the canal bottom along this section of the canal. The top of the water main is at approximate elevation +79 ft. However, by maintaining a water surface elevation of approximate +83.0 ft. at the Haxall Gate, this would provide sufficient depth for both maintenance of the canal and pipeline as well as operation of the proposed boat having a draft of between 1 to 2 feet. See Figure L showing the canal profile.

(Figure 41.) The 1990 Witman, Requardt & Associates engineering study indicated that a water surface elevation of 83 feet at the Haxall Gate [east of Maymont] would provide sufficient depth for the operation of the proposed canal boat having a draft of between 1 and 2 feet. (Source: Planning Department, City of Richmond)

<sup>45</sup> *James River and Kanawha Canal Feasibility Study*, Whitman, Requardt & Associates Engineers, for Richmond Renaissance, March 1990





Richmond City Councilman Parker Agelasto in October 2013 submitted a city capital budget request for rewatering the James River and Kanawha Canal, so the water level in the canal is now of critical importance. It will be essential that canal boats are able to clear the 48 inch water transmission line in the bed of the canal when the canal is rewatered. There will also be important safety issues to consider, since Venture Richmond's proposal to damage the south bank of the canal by slicing off half of the tow path and lowering the tow path by two feet will compromise the structural integrity of the south bank of the canal.

**This 48 inch water pipe crisscrosses the canal bed, and the top of the pipe is at 80.5 feet elevation, according to the city Department of Public Utilities. It is imperative that the tow path of the canal not be lowered at the site of Venture Richmond's proposed amphitheater so that the historical water level of 83 feet elevation can be maintained in the canal to allow boats with between one and two feet of draft to cross the water transmission pipe.**



**(Figure 43.) The 48 inch Korah 2 water transmission pipe installed in 1984 is shown in the bed of the James River and Kanawha Canal below Hollywood Cemetery. In order for canal boats to clear this water transmission pipe in the bed of the canal when the canal is re-watered west of Tredegar, the elevation of water in the canal must be maintained at its historical level of 83 feet above mean sea level. (Source: OHHIC)**



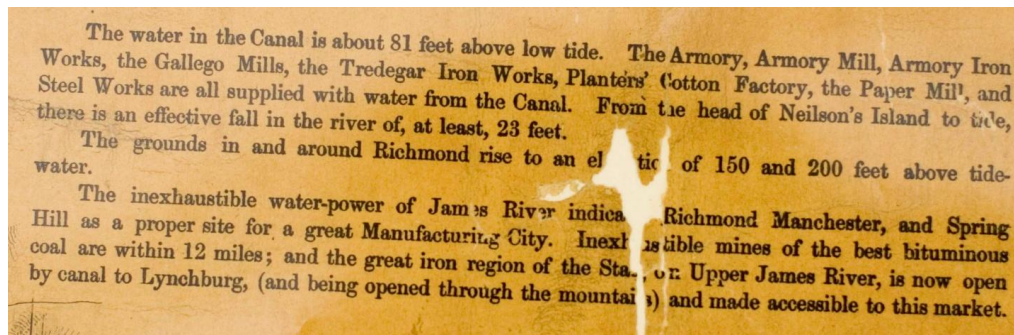


**(Figure 44.) This 1990 photo shows the 48" city water transmission pipe crisscrossing the bed of the James River and Kanawha Canal bed just west of the Lee Bridge, a few hundred feet west of Venture Richmond's proposed amphitheater. According to the Richmond Department of Public Utilities, the top of this water pipe is at 80.5' elevation. A canal water level of 83 feet elevation is necessary for canal boats to clear this water pipe. (Source: Whitman, Requardt & Associates report, Richmond Renaissance papers, Special Collections, VCU Libraries)**



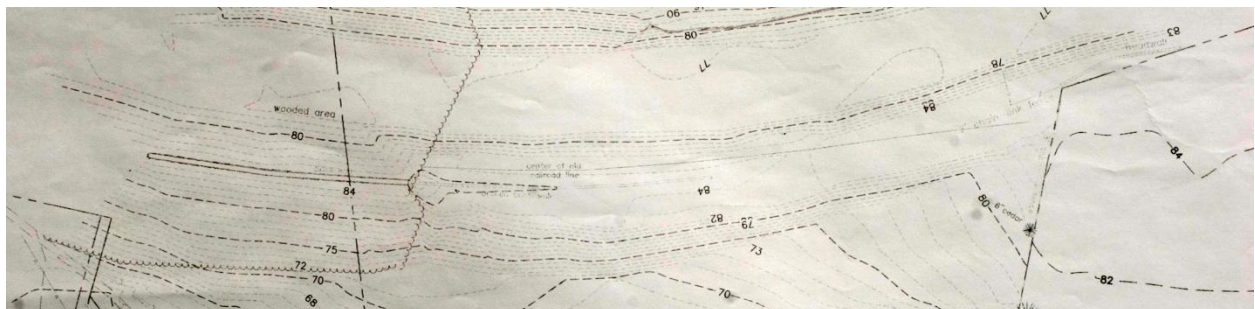
There is a preponderance of evidence that the water elevation in the James River and Kanawha Canal was at or near 83 feet elevation above mean sea level. This is supported by Board of Public Works maps, extensive Tredegar and C&O Railroad surveys, contemporary engineering reports and actual surviving gauges in the canal. Despite these extensive authoritative records, Venture Richmond clings to one undocumented notation in the margin of the 1848 Morgan map to support its claim that the water in the canal was at 81 feet elevation.

*(It would be very damaging to the canal if Venture Richmond lowered the authentic elevation of the canal tow path based on the undocumented notation in the margin of the Morgan Map.)*



(Figure 45.) This undocumented notation in the margin of the 1848 Morgan Map was the only source cited by Venture Richmond's consultant for the historical water elevation in the canal. This undocumented notation is not authoritative and does not indicate the location in the canal where the water elevation was measured. The undocumented notion also cites a measurement "above low tide" rather than above "mean tide," which is the standard used in accurate water elevation surveys. (Source: Library of Virginia)

The current elevation of the tow path at the site of Venture Richmond's proposed amphitheater is about 84.5 feet. This tow path elevation is now at the minimum elevation to safely support the historical water elevation of 83 feet. When the James River and Kanawha Canal is rewatered, a water elevation of 83 feet will be necessary so that canal boats can clear the 48" water transmission pipe in the bed of the canal.



(Figure 46.) This accurate topography map of the tow path embankment on the site of the proposed amphitheater was created in 2012 for the adjacent 2<sup>nd</sup> Street Connector road construction. This topography map indicates that the current tow path elevation is about 84.5 feet above mean sea level, adequate to hold water at 83 feet elevation. (Source: 2<sup>nd</sup> Street Connector Erosion Control Plan, Draper Aden Associates, 2012)

### **Tow path at least two feet above the water level in the canal:**

According to City of Richmond topography maps, the highpoint of the existing canal tow path at the location of Venture Richmond's proposed amphitheater is 84.5 feet above mean sea level. This tow path height should be maintained in order to accommodate the historical water elevation in the canal of around 83 feet. For safety and to accommodate fluctuations in the water level, the tow path needs to be about two feet above the water level in the canal. **Civil war era photographs of the canal near Hollywood Cemetery indicate that the canal tow path was historically about two feet in elevation above the level of the water in the canal.**

Claudius Crozet, who was the Principal Engineer for the Board of Public Works and who supervised improvements on the state's canals, emphasized the importance of maintaining a safe two-foot margin between the water level in the canal and the top of the tow path in an 1825 report. **Claudius Crozet specified that, "The height of the tow-path above the surface of the water is to be 2 feet ... the height of the bank must be regulated by the greatest height to which the river is known to rise, which it ought to exceed by 2 feet."**<sup>46</sup>

*(Venture Richmond inaccurately asserted that there was "limited clearance" between the water level in the canal and the top of the tow path.)*



**(Figure 47.) "Richmond Va. View from Hollywood Cemetery," (detail) John Keekie, c. 1865 LC-B811-929. Note the tow path in this Civil War era photograph is at least two feet above the water level in the canal, based on the scale of the adjacent fence for comparison. (Source: Library of Congress)**

<sup>46</sup> Claudius Crozet, *Annual Report of the Board of Public Works to the General Assembly*, Richmond, 1825, page 133

The Whitman, Requardt & Associates engineering report on the James River and Kanawha Canal in 1990 indicated that between Maymont and Tredegar the tow path of the canal is at 87 feet elevation, except between the Lee Bridge and Tredegar where the tow path lowers to around 84.5 feet elevation.<sup>47</sup> Venture Richmond ill-advisedly proposes to lower the tow path by about two feet at the precise location where the tow path is already two feet lower. When the canal is rewatered, this would result in an unsafe margin between the water level in the canal and the top of the tow path at the site of the proposed amphitheater.



**(Figure 48.) Canal with Belle Isle in background (detail). The tow path is at least two feet above the water level of the canal in this Civil War era photograph. The fence on the tow path provides a convenient bench-mark to gauge the tow path's elevation above the water level. (Source: New York Public Library)**

<sup>47</sup> *James River and Kanawha Canal Feasibility Study*, Whitman, Requardt & Associates Engineers, for Richmond Renaissance, Figure L, March 1990



The C&O Railroad kept careful records of the fluctuation of the water level in the canal. For example, the water level in the canal rose 1-1/2 feet in a one month period in the summer of 1881.<sup>48</sup> Obviously, the banks of the canal must be engineered to safely hold back the water in the canal at the water's highest level. Historical records indicate that the water level in the canal will fluctuate as the result of torrential rainfall and other weather related changes.



(Figure 49.) "Looking up the River at Hollywood Cemetery," (detail) David H. Anderson, Civil War era. The water level is at least two feet below the top of the tow path in this photograph of the canal looking west from Hollywood Cemetery. Venture Richmond's consultant has inaccurately stated that there was historically limited clearance between the tow path and the water level in the canal. (Source: New York Public Library)

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<sup>48</sup> C&O Records, Charts, June 23, 1881 through September 17, 1881, Accession Number 4364, Library of Virginia

It is important for the tow path to be about two feet above the water level on the canal to prevent flooding during times of heavy rain and ice melt. Flooding was historically the most serious hazard to the canal system. For example, in 1842 a freshet caused overflowing of the canal and resulted in breaks in the canal in 103 places, requiring expensive repairs.<sup>49</sup>



**(Figure 50.) Canal from Hollywood Cemetery (detail), Civil War era. The canal at Hollywood Cemetery, west of Tredegar, provided a picturesque setting that was often photographed. These photographs now provide useful information in determining the elevation of the tow path above the water level of the canal. Using the fence in the photograph as an approximate gauge, it is apparent that the tow path in this photograph was at least two feet above the water level of the canal. This provided a margin of safety during freshets that could cause flooding and expensive damage to the canal banks. Flooding was historically the cause of the most serious damage to the canal. (Source: New York Public Library)**

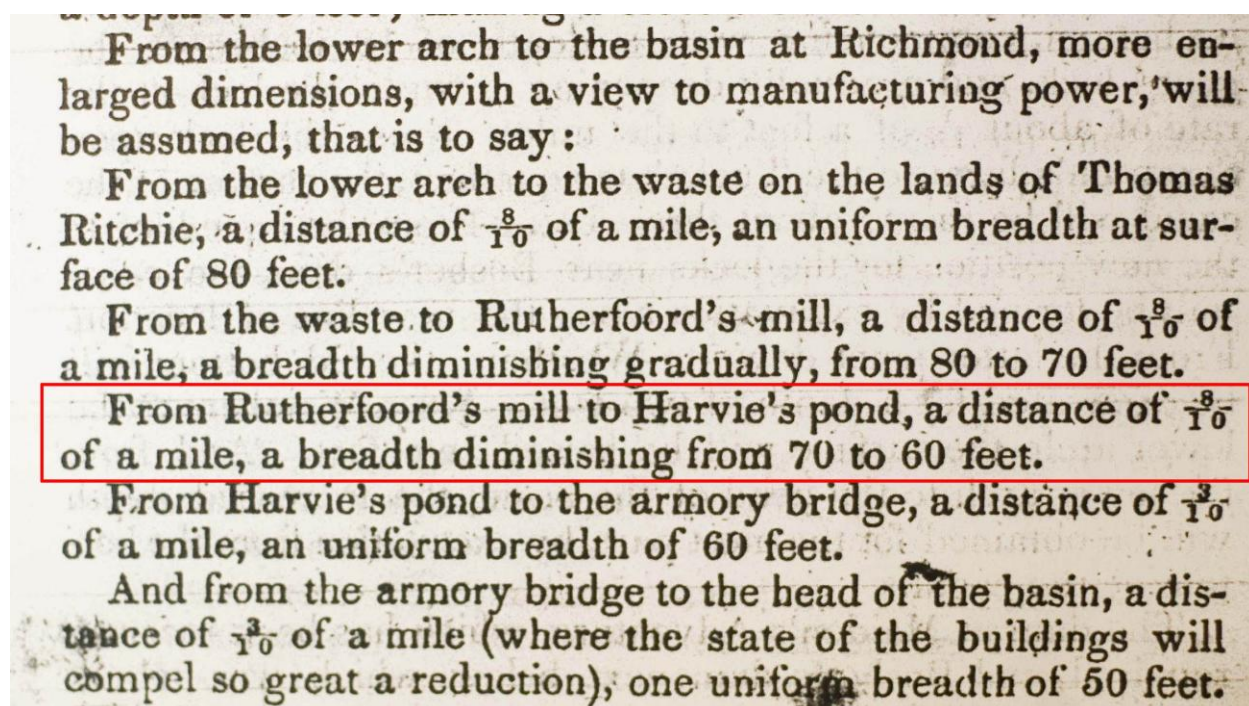
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<sup>49</sup> Dunaway, Wayland, *History of the James River and Kanawha Company*, Columbia University, New York, 1922, page 146.



### Canal 60 feet wide at this site from 1838:

The canal at Tredegar was 40 feet wide from the mid-1820s.<sup>50</sup> In 1838, the canal at Tredegar was widened from 40 to 60 feet to accommodate the growing demand for navigation and for water power by the manufacturing enterprises below Oregon Hill, including cotton, paper, and flour mills, a distillery and tannery, the Tredegar Iron Works, and the Virginia Manufactory of Arms. The 3<sup>rd</sup> Annual Report of the James River and Kanawha Company on December 11, 1837 declared the intention of widening this stretch of canal: **“From Rutherford’s mill to Harvie’s pond, a distance of 8/10 of a mile, a breadth diminishing from 70 to 60 feet.”**<sup>51</sup> The canal at Harvie’s pond, widened to 60 feet in 1838, includes the location of what is now the site of Venture Richmond’s proposed amphitheater. The canal’s current width of about 60 feet in width at this location dates from 1838, during the period of the canal’s primary significance.



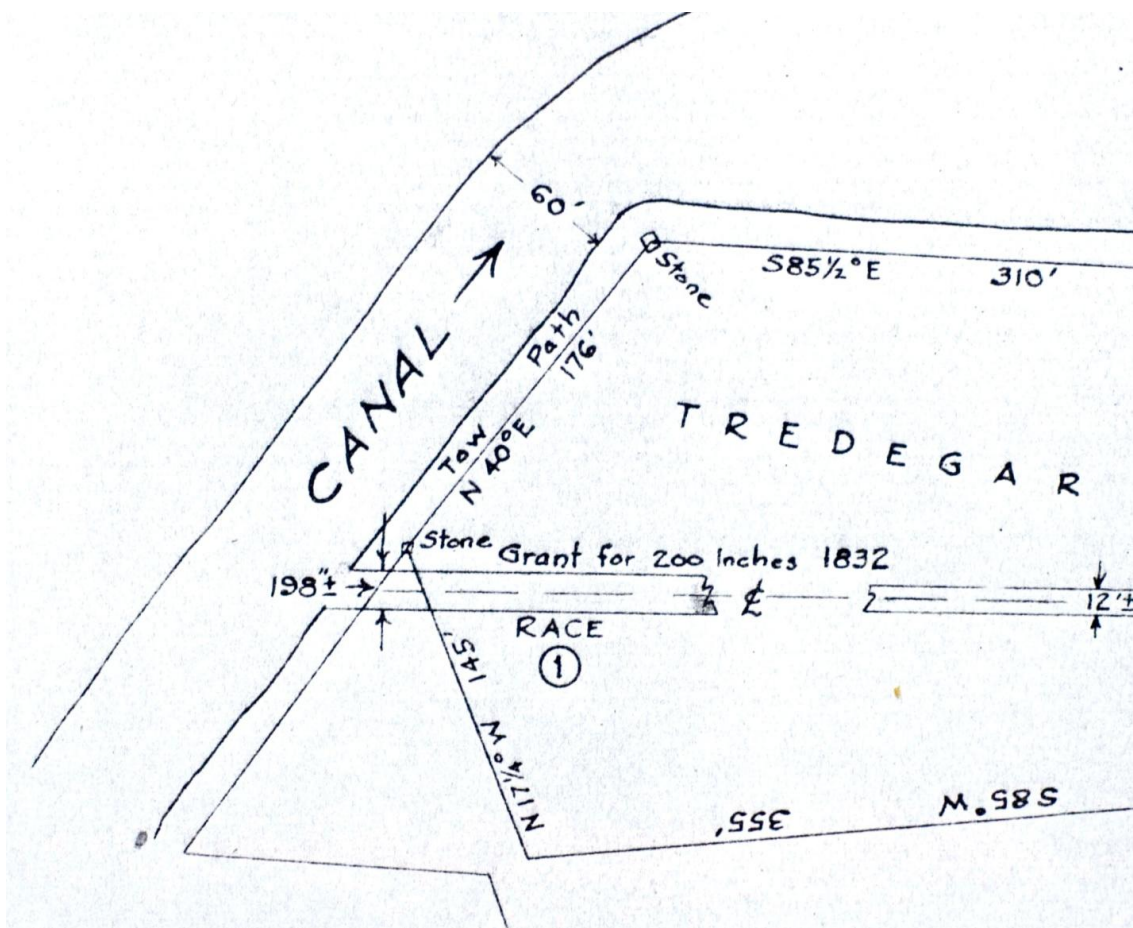
(Figure 51.) In 1837 plans were finalized to widen the lower James River and Kanawha Canal, including the section “From Rutherford’s mill to Harvie’s pond, a distance of 8/10 of a mile, a breadth diminishing from 70 to 60 feet.” The lower canal was widened to accommodate the growing demands for transportation and water power. The canal was successfully widened from 40 to 60 feet at Tredegar in 1838, and remained 60 feet wide throughout the canal’s primary period of significance. (Source: *The 3<sup>rd</sup> annual report of the James River and Kanawha Canal Company*, Dec. 11, 1837, Film 372, Reel 4, Library of Virginia)

<sup>50</sup> Raber Associates, *Historical and Archaeological Assessment Tredegar Iron Works Site*, prepared for Valentine Museum and Ethyl Corporation, page 10, Lyle Browning Collection

<sup>51</sup> 3<sup>rd</sup> Annual Report, James River and Kanawha Canal Company, December 11, 1837; Film 372, Reel 4, Library of Virginia



(Venture Richmond inaccurately states that it wants to “restore” the canal to its “original” condition of 50 feet in width at the Tredegar location of its proposed amphitheater. The canal at this location was never 50 feet in width; it was widened from 40 feet to 60 feet in 1838. Venture Richmond is proposing to unnecessarily back-fill the wetlands of the canal to create a false canal dimension of 50 feet that is not historically accurate. Venture Richmond cites Wayland Dunaway’s, *History of the James River and Kanawha Company*, to inaccurately suggest that the canal was originally 50 feet wide at this location. But the Dunaway citation was actually describing specifications for expanding the canal to Lynchburg in 1835, a half-a-century after the canal at Tredegar was already constructed.<sup>52</sup> Obviously, the specifications approved in 1835 were not applicable to the canal at Tredegar since the canal at Tredegar was expanded from 40 to 60 feet in width three years later. The Secretary of Interior standards for rehabilitation state that, “Changes that create a false sense of historical development ... will not be undertaken.”)



(Figure 52.) This composite map (detail), prepared by R. D. Trimble for Tredegar, shows that the James River and Kanawha Canal was 60 feet wide at Tredegar in 1839. (Source: Trimble Composite map, Plate 3 for Year 1839 (detail), September 1933, Tredegar Papers, Box 32, Accession Number 23881, 24808, Library of Virginia)

<sup>52</sup> Dunaway, Wayland, *The History of the James River and Kanawha Canal*, Columbia University, New York, 1922, pages 118-120 and pages 163-167

Chronology of James River Canal.

23.

1837- (continued)

Canal Dimensions at	Distance in Miles	Surface Width Feet	Depth Feet	Cross sections of Water Area sq. feet
Head of Richmond Level	0.0	80	8	544
Waste at Richie's land	0.8	80	8	544
Rutherford's Mill	1.6	70	7.6	445.4
Harvie's Pond	2.4	60	7.2	354.2
Armory Bridge	2.7	60	7.05	423.0
Armory Br. to Basin	0.3	50	7.00	350.0

The Report further states that the velocity of the water in the Canal is to be one and one-half miles per hour

" which would not impede the navigation "

and that the canal capacity will be 1,500 cu. ft. second of water.

The Armory Bridge was opposite Fifth St., as shown on Micajah Bates Map of 1835

(Vol.2, Pl.15) Ex 611

1838- Enlargement of Richmond Level completed and water being turned into the Canal on Dec. 18th. 615A (Enquirer, Dec.18, 1838) Omitt

1838- Harvie's Pond cleaned out and enlarged. Ex 613-614 (J.R. & K. Minutes, Sundry Items, pp.11 & 12)

1839- 5th Annual Report, J.R. & K. Co., (Enquirer, Jan.7, 1840)

Reports accomplishment of the enlargement of the Richmond Level in accordance with the dimensions given in the 3rd Annual Report (see year 1837), except that in this report the masonry walls are said to have had a batter of  $\frac{1}{2}$  to 1, instead of being vertical. Ex 615

Reports the formation of basin, " opposite to the Tredegar rolling mills ", " surrounded by substantial stone walls "

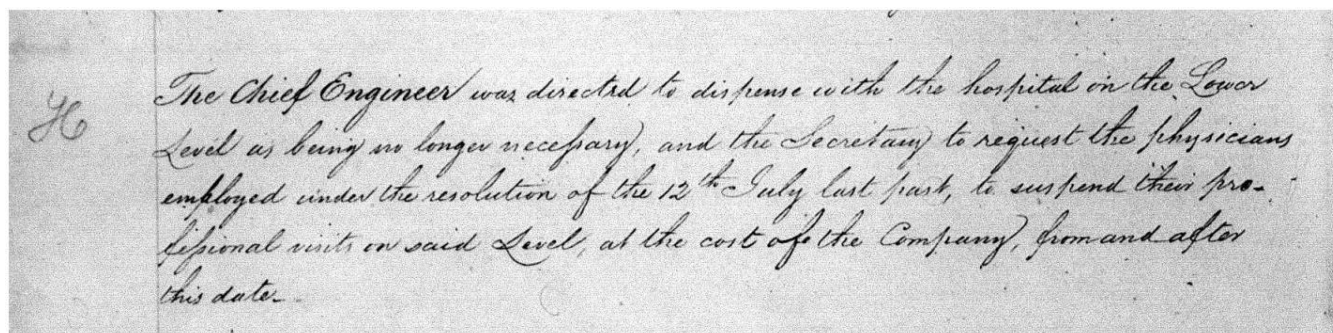
Reports the construction of " three waste-weirs "

"-At the upper end of this level, a few yards below

(Figure 53.) This Chronology of the James River Canal noted that the surface width of the canal was 60 feet at Harvie's Pond, and that in 1838 "Enlargement of Richmond Level completed and water being turned into the Canal on December 18<sup>th</sup>." (Source: R. D. Trimble, "Chronology of the James River Canal," Tredegar Papers, Box 32, Accession Number 23881, 24808, Library of Virginia)



In widening the lower level of the James River and Kanawha Canal to 60 feet at Tredegar, every effort was made to reduce the interruption to navigation and manufacturing power. As much work as possible was completed with water in the canal, but navigation was suspended when the water was drained from the canal on March 18, 1838. An average workforce of 600 laborers was engaged in the work that was so arduous and dangerous that slave owners were reluctant to hire out their slaves for the work. Two-thirds of the workforce was made up of immigrants, the majority of whom were Irish. Under the intense heat, the excavation of the rock and the blasting was so strenuous and dangerous that the laborers went on strike in May and again in June 1838, and they did not return until offered a 20% increase in wages. But widening the canal took a terrible human toll and in early July 1838, "some 15 or 20 of the Irishmen suddenly expired under the intensity of the heat. In the alarm of the moment between 100 and 200 of their countrymen left work, probably all the rest would have left if not for setting up hospital ... Great effort was made to augment the proportion of black labourers," and by September, a "more manageable and stable labour force," now composed two-thirds of slave labor, was working to complete the project. On December 8, 1838 the widening of the canal was sufficiently complete and "water began to be let again upon the lower level."<sup>53</sup>



(Figure 54.) In the intense summer heat of 1838, work progressed on widening the lower level of the canal, including widening the canal from 40 to 60 feet at Tredegar. In July 1838, fifteen to twenty Irish workers died from heat prostration and over a hundred Irish laborers left the work. In response to the extremely hazardous conditions in widening the canal, an on-site hospital was erected in mid-July, and an effort was made to hire more slave labor. By mid-October, the minutes of the James River and Kanawha Company record that the hospital was no longer necessary and ordered physicians to suspend their professional visits. (Source: James River and Kanawha Company minutes, October 17, 1838, Misc. Reel 2049, Library of Virginia)

<sup>53</sup> Report of the 4<sup>th</sup> Annual Meeting of the James River and Kanawha Company, "Enlargement of the Lower Canal", p. 228-240, Film 372, Library of Virginia



53-1W

*James River and Kanawha Company.*

**NOTICE TO LABORERS.**—At a meeting of the President and Directors of the James River and Kanawha Company, on the 8th June, 1838:

*Resolved,* That the Company will continue to pay for labor on the lower level of the old canal at the rates they are now paying, and at the times set forth in the advertisement of the agent, Mr. Reins, now published in the Richmond newspapers, until the force employed on said level shall be discharged by the Company on the completion of the work necessary to be executed thereon.

*Resolved further,* That from and after Monday morning next, each laborer employed by the Company on said work, who, on its completion as aforesaid, shall be returned by the said agent as having worked well and faithfully every working day, (except when unavoidably prevented,) from the time when he shall engage in the Company's service, until the completion of the said work, and as having behaved in an orderly manner, shall be entitled to receive an additional allowance of 20 per cent. on the rates of compensation now allowed, to be paid on the first pay day occurring (by the usages of the Company) after the completion of the said work:—Provided, however, that such additional compensation shall be paid only to those laborers who shall continue in the Company's service until the work on said lower level shall be completed; and provided further, that these resolutions shall not apply to any persons ascertained as having instigated or promoted the late strike for wages on said lower level.

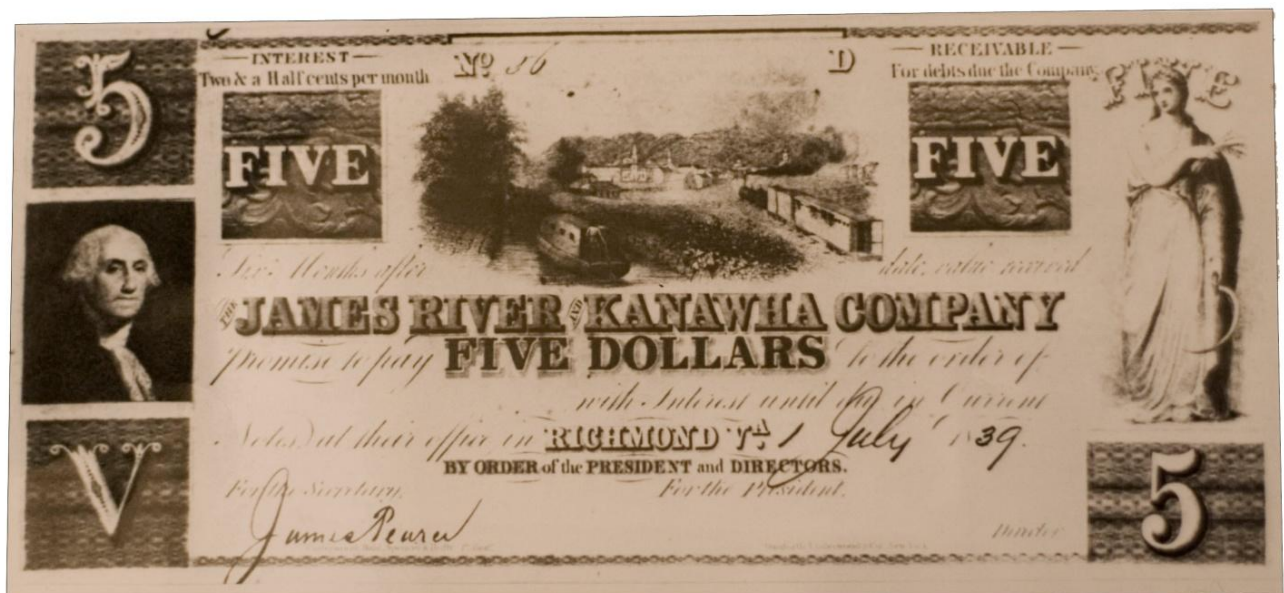
Published by order of the Board.  
June 15.

[11-16]

W. B. CHITTENDEN,  
*Secretary*

(Figure 55.) The James River and Kanawha Company advertised in the autumn of 1838 for laborers to complete work on the lower level of the canal. This work included widening the canal from 40 to 60 feet at Tredegar [now the location of Venture Richmond's proposed amphitheater]. This canal enlargement was so dangerous and strenuous that the laborers went on strike in May and again in June of 1838. The advertisement notes that additional compensation will not be offered to "any persons ascertained as having instigated or promoted the late strike for wages on said lower level." By September, slave labor had increased to two-thirds of the workforce; the canal company preferred hiring slaves, who were unable to strike for better wages or working conditions. (Source: *Richmond Enquirer*, October 9, 1838, page 1, column 3; Library of Virginia)

Enlarging the lower level of the canal in 1838, including widening the canal at Tredegar from 40 to 60 feet in width, was an extremely expensive and logistically problematic operation. Mill owners protested the loss of water power during the excavation, and goods shipped by freight boat needed to be off-loaded six miles west of the city. The hardness of the rock exceeded expectation and the canal company's expenses included "\$10,000 worth of powder." The project went way over budget because initial plans to use private contractors fell through, as the result of the harsh work environment. The canal company had difficulty hiring slaves due to "objections of the proprietors of slaves to the position and circumstance of the work."<sup>54</sup>



(Figure 56.) The canal company issued stock certificates, like this 1839 certificate, to finance the enlargement of the canal. The widening of the lower level of the canal in 1838, largely with slave and immigrant labor, was a very expensive proposition that went over budget. By December 1838, the canal was widened to 60 feet at Tredegar -- now the site of Venture Richmond's proposed amphitheater. (Source: James River and Kanawha Company stock certificate, July 1, 1839; Catalogue # D 1000607565, Negative # 45-7693, Picture Collection, Library of Virginia)

<sup>54</sup> Report of the 4<sup>th</sup> Annual Meeting of the James River and Kanawha Company, "Enlargement of the Lower Canal", p. 228-240, Film 372, Library of Virginia

The well-documented 1838 enlargement of the canal was accomplished by the excavation of the north bank of the canal, leaving the tow path intact.<sup>55</sup> The widening of the lower level of the canal was largely finished by the end of 1838, and water was returned to the canal, as announced in the December 18, 1838 edition of the *Richmond Enquirer*, and confirmed in the James River and Kanawha Company report of 1839.<sup>56</sup>

We are happy to have it in our power to announce, that the water was let into the James River Canal, on last Saturday evening, as far as Rutherford's Mill. The operations on the lower section were finished last evening, and the water will be let down to the Basin on this morning. We learn, that the boats can come down from Mint Stick (about 7 miles from Richmond) on Saturday next.

(Figure 57.) The James River and Kanawha Company printed a notice on December 11, 1838 that the work to the lower section of the canal was complete and that water had been returned to the canal. This work included widening the canal at Tredegar [now the site of Venture Richmond's proposed amphitheater] from 40 to 60 feet to accommodate increasing freight boat traffic and increasing demand for water power. (Source: *Richmond Enquirer*, page 3, column 4, December 11, 1838; Library of Virginia)

It was with this average monthly force, and under this course of direction and supervision, that the second class of the work, or under-excavation of the lower level of the canal was conducted; the contract jobs upon that level, and upon the two levels next above, proceeding simultaneously; but, stimulated in their progress, and brought forward, as has been stated, by detachments from the main body of the company's hands; and, as the result of these combined operations, it was on the 8th day of December that the water began to be let again upon the lower level, and will continue to be augmented as far as the safety of the embankments will permit,

(Figure 58.) The 4<sup>th</sup> Annual Report of the James River and Kanawha Company documented the extreme difficulties in widening the lower level of the canal. The report recorded that finally, "... on the 8<sup>th</sup> day of December that the water began to be let again upon the lower level ..." (Source: *4<sup>th</sup> Annual Report of the James River and Kanawha Company*, December 1838, page 234, Board of Public Works, Film 372, Library of Virginia)

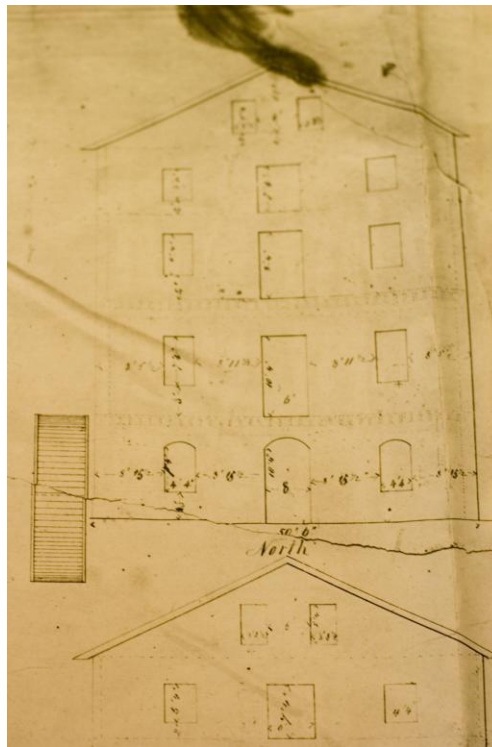
<sup>55</sup> Raber Associates, *Historical and Archaeological Assessment Tredegar Iron Works Site*, prepared for Valentine Museum and Ethyl Corporation, page 11, Lyle Browning Collection

<sup>56</sup> Testimony transcripts, Tredegar V. C.&O. Railroad, 1933, Tredegar Papers, Box 41, Accession Number 23881, 24808, Library of Virginia



Widening the canal from 40 to 60 feet at Tredegar in 1838 greatly increased the water volume to power industry at the site. Richmond at the falls of the James was blessed with enormous water power because in a distance of approximately three miles the river falls 84 feet to tidewater level at the eastern edge of the city. At Tredegar, there is almost 50 feet of drop from the canal to the elevation of the James River. According to the Raber-Tredegar report:

**Richmond is thus the head of tidal navigation as well as the first and most important waterpower site on the James. Construction of the James River and Kanawha Canal solved a critical transportation problem and created a new opportunity for exploitation of waterpower resources. The canal as it entered the city from the west could deliver a controlled flow of water from upstream and make it available to local manufacturers. There was so much drop between the upper level of the canal and the river below the falls that water drawn from the canal could be used to power one, two, or even three mills in sequence. The canal gave Richmond the potential to become a major center of industry and commerce.**<sup>57</sup>

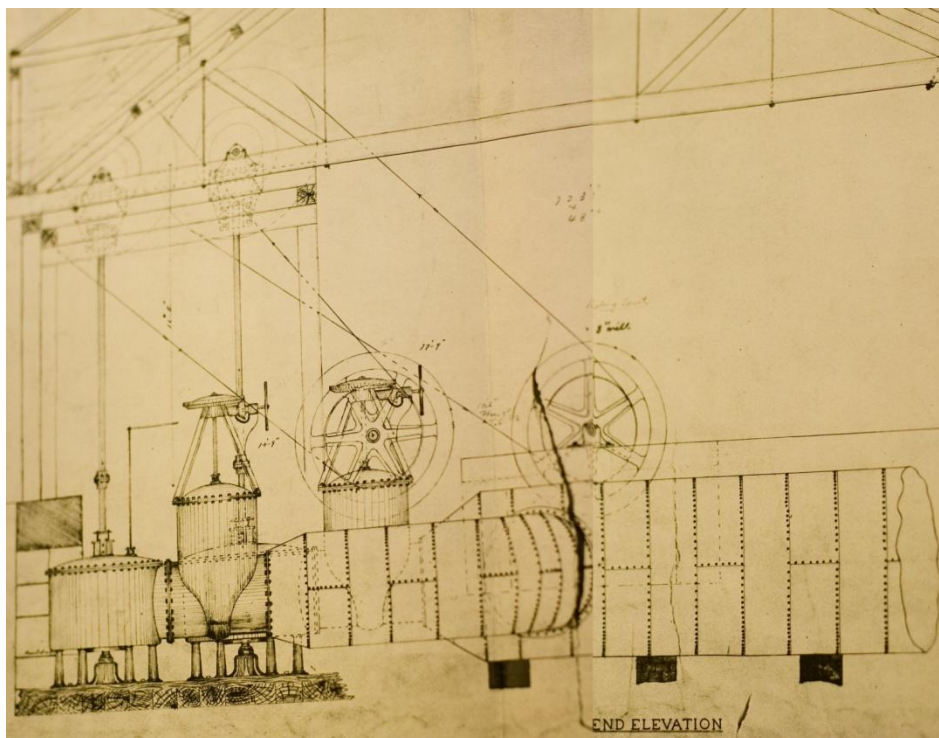


**(Figure 59.) Tredegar Iron Works relied on water power from the James River and Kanawha Canal to power all of its manufacturing processes. The widening of the canal from 40 to 60 feet at Tredegar in 1838 greatly increased the water volume available to power Tredegar and other mills. This drawing depicts the original overshot wheel at Tredegar. (Source: Tredegar Papers, Box 40, Accession Number 23881, 24808, Library of Virginia)**

<sup>57</sup> Raber Associates, *Historical and Archaeological Assessment Tredegar Iron Works Site*, prepared for Valentine Museum and Ethyl Corporation, page 42, Lyle Browning Collection



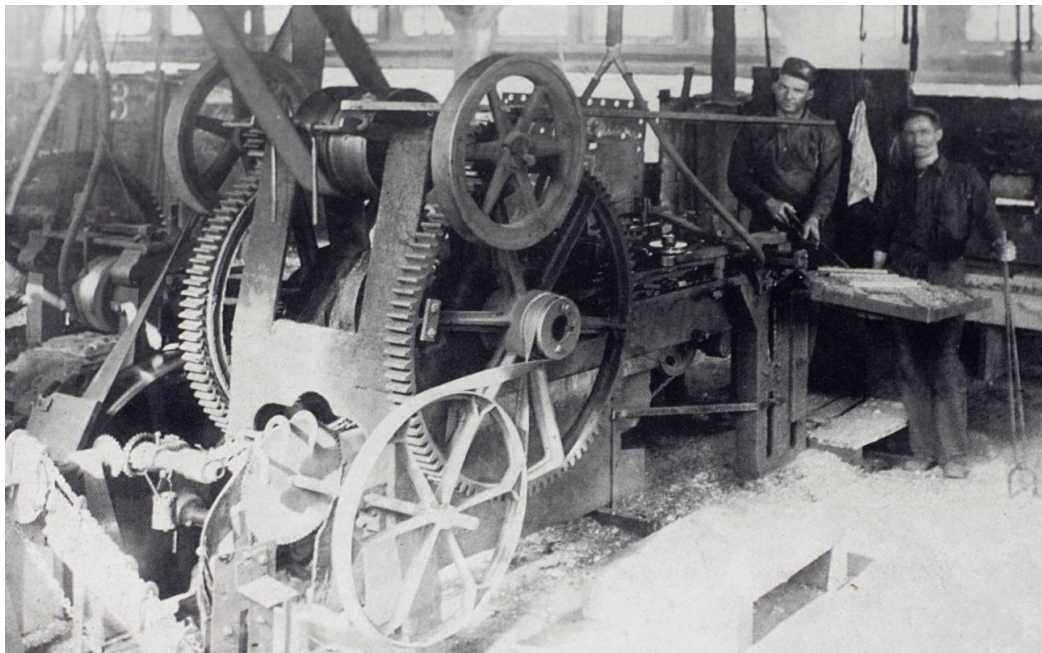
**(Figure 60.)** This is a replica of the overshot wheel at Tredegar that was powered by water from the James River and Kanawha Canal. With a 50 foot drop from the canal to the James River, each water race could power up to three mills in sequence. Widening the canal in 1838 greatly increased available water volume. (Source: OHHIC)



**(Figure 61.)** From the 1870s, water powered turbines replaced the overshot wheel as the source of power at Tredegar Iron Works. (Source: Tredegar Papers, Box 40, Accession Number 23881, 24808, Library of Virginia)

After the canal ceased to be used for transportation in the 1880s, it continued to provide a valuable source of cheap water power for the Tredegar Iron Works. In 1933, Tredegar and the C. & O. Railroad were involved in extensive litigation; at issue was the water supply from the canal, which was accumulating sediment that reduced the water volume. Tredegar presented over 800 exhibits (now part of the Tredegar Papers at the Library of Virginia), carefully documenting the water leases and grants, and the historical dimensions of the canal. The case was settled out of court, but the court documents provide a treasure trove of information on the canal and its history.<sup>58</sup> While Tredegar and the C&O Railroad disputed the volume of water to which Tredegar was entitled, their surveys of the water elevation in the canal were very similar.

*(Venture Richmond claims that narrowing the canal to a 50 foot width would create a safer, and gradually sloped canal bank. But a simple fence, as utilized on the renovated Haxall Canal beside Brown's Island with far steeper drops, would be a less expensive and practical alternative to achieve this same goal without altering the character and width of the canal.)*



**(Figure 62.)** This photograph shows machinery relating to the horseshoe manufactory at Tredegar with belts powered by water from the canal. Buildings related to the horseshoe manufactory were on the site of what is now Venture Richmond's proposed amphitheater. Tredegar continued to rely on water power from the James River and Kanawha Canal to power the machinery at Tredegar Iron Works into the 20<sup>th</sup> century, when other industries increasingly relied on electrical power. After transportation on the canal had ceased, the canal continued the vital function of providing water power for the Tredegar Iron Works. (Source: Historical interpretive plaque, Tredegar Iron Works)

<sup>58</sup> Tredegar papers, Boxes 31-44, Accession Number 23881, 24808, Library of Virginia



### **Canal is a carefully engineered, impermeable structure:**

Few would be so insensitive to suggest slicing off a portion of a Civil War earthwork in order to improve sight-lines for a new outdoor music venue. The south tow path embankment of the James River and Kanawha Canal must now be defended against such an unwise proposal, but the canal tow path was a more carefully engineered structure than a Civil War earthwork because it was required to be leak-proof. The portion of the canal where Venture Richmond proposes to remove over half of the tow path embankment was one of the first segments of the canal at the falls of the James River to be undertaken in the mid-1780s. It was a laborious process to build a canal without benefit of modern equipment. Both slaves and immigrant laborers toiled to construct one of the engineering marvels of its day. Due respect should be paid to this remarkable achievement for which many lives were sacrificed.

**The canal banks are not just mounds of earth that could be later easily replaced but are carefully engineered structures with “puddled” clay as an impermeable layer.** Puddling clay is now largely a “lost art,” which would be difficult to reproduce if the south canal bank is damaged by Venture Richmond. In the 18<sup>th</sup> and 19<sup>th</sup> century, puddling was a labor intensive technique of mixing and re-mixing fine grain clay with water to a plastic cement-like consistency. When the 2<sup>nd</sup> Street connector road was built in 2012, adjacent to the proposed amphitheater, a cross section of the canal revealed the puddled clay layer. Dr. Bill Trout, a noted canal authority, inspected the cross section and observed that the clay layer was intact to the east and west of the connector road. He took a sample of the clay layer and demonstrated how the clay was puddled and made impermeable by mixing it with water.<sup>59</sup>

Slicing the carefully engineered and centuries-old canal tow path should be avoided at all costs. Removing a substantial portion of the south bank of the canal would weaken the intact, authentically engineered structure and change the original dimensions and appearance of the tow path that is listed on the National Register of Historic Places. According to the Secretary of Interior Standards for Rehabilitation, “The removal of distinctive materials or alteration of features, spaces, and special relationships that characterize a property will be avoided.”

Removing half of the tow path of Washington’s canal to improve sight-lines is a short-sighted proposal when one respects the structural engineering involved in creating the impermeable canal. The canal walls must hold back hundreds of tons of water when the canal is rewatered and safety is of paramount importance. The proposal to remove half of the canal’s south bank ignores the fact that this would compromise and weaken the carefully engineered structure.

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<sup>59</sup> Trout, William, “Puddling on the James River Canal, *The Tiller*, publication of the Virginia Canals and Navigations Society, Vol. 34-1, 2012, pages 8-9



(Figure 63.) This cross section of the canal was revealed when the 2<sup>nd</sup> Street Connector was constructed in 2012, adjacent to the site of Venture Richmond's proposed amphitheater. This cross section exposes the intact layer of the clay that was "puddled" in a process to make an impermeable water-tight canal bank. The James River and Kanawha Canal was a carefully engineered structure, designed to withstand the vicissitudes of weather and traffic, while holding back the considerable volume of water in the canal. (Source: OHHIC)





(Figure 64.) Canal authority, Dr. Bill Trout, sampled the clay from the canal tow path in 2012 when the canal was cut in order to build the 2<sup>nd</sup> Street Connector, which is adjacent to the proposed amphitheater site. He demonstrated that puddling this clay made it leak proof. (Source: Dr. Bill Trout, *The Tiller*, publication of the Virginia Canals and Navigations Society, Vol. 34-1, Pages 8-9, 2012)



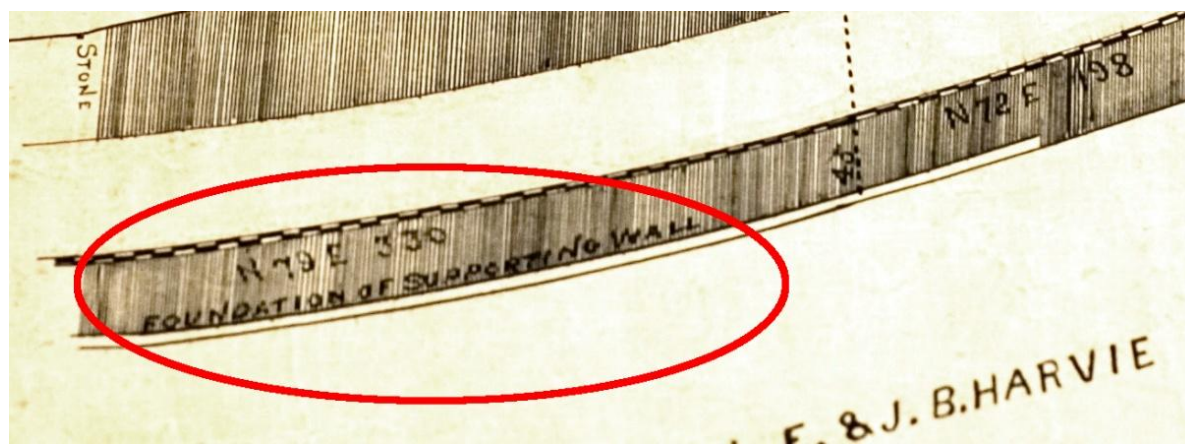
[F.]

STATEMENT of the average Prices of the several kinds of work executed in the construction of the Canal between Lynchburg and Maiden's Adventure, up to this date.

EXCAVATION.			EMBANKMENT.					PUDDLING.	WALLING.	
1st.	2d.	3d.	1st.	2d.	3d.	4th.	5th.		1st.	2d.
Of earth, gravel or loose stone.	Of granite or other rock.	Of slate.	Excavated from canal, transported over 120 feet.	Not excavated from canal, transported less than 120 feet.	Not from canal, transported over 120 feet, and less than 1 mile.	Not from canal, transported over 1 mile, and less than 1/2 mile.	Not from canal, transported over 1/2 mile.		Of stone from canal excavation.	Of stone not excavated from canal.
Per cubic yd.	Per cubic yd.	Per cubic yd.	Per cubic yd.	Per cubic yd.	Per cubic yd.	Per cubic yd.	Per cubic yd.	Per cubic yd.	Per cubic yd.	Per cubic yd.
D. C. 12 1/4	D. C. 64 1/2	D. C. 38 1/4	D. C. 9	D. C. 14	D. C. 22 1/2	D. C. 29 1/4	D. C.	D. C. 11 1/2	D. C. 54 1-6	D. C. 1 38 2-5

OFFICE OF THE JAMES RIVER AND KANAWHA COMPANY, }  
1st December, 1836.

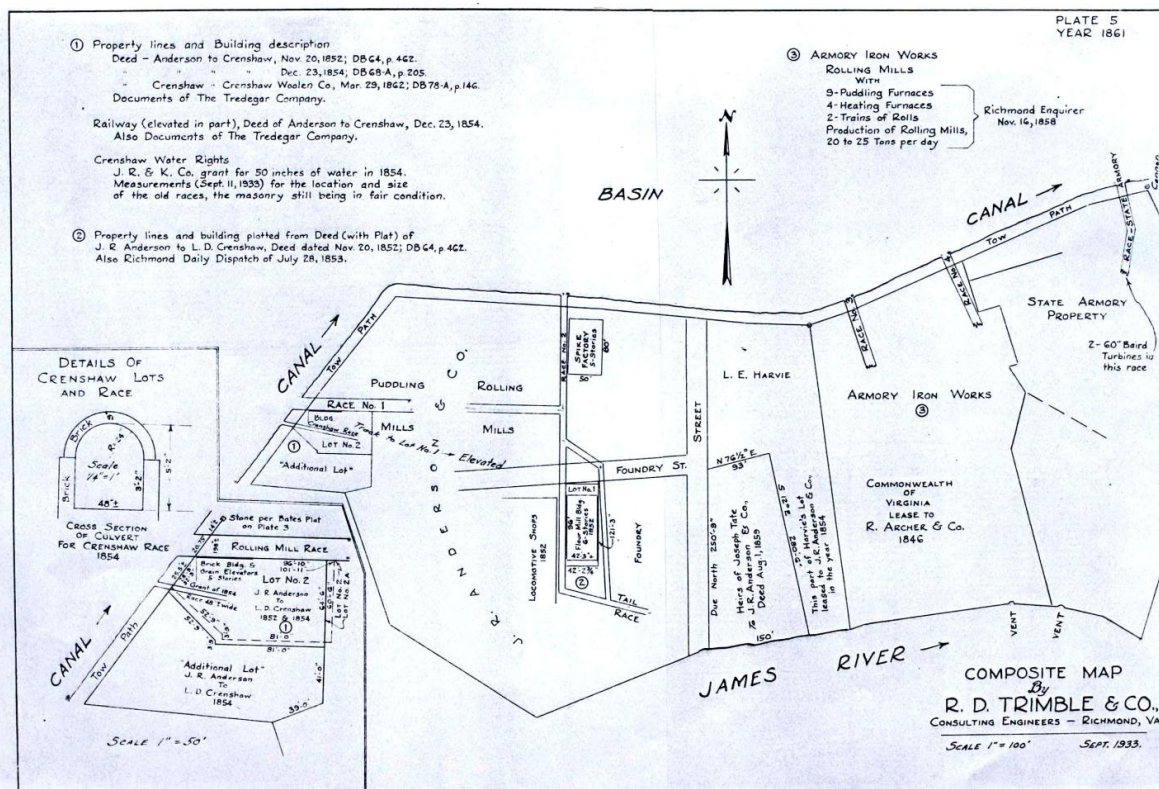
(Figure 65.) Along with Excavation, Embankment and Walling, Puddling costs are enumerated as a major canal expense in 1836. Puddling was a labor intensive process that required hand mixing and remixing of fine grained clay with water to the correct consistency to form an impermeable, leak-proof layer that has survived for centuries. (Source: Virginia Board of Public Works Reports, Film 372, Library of Virginia)



(Figure 66.) In addition to being engineered with an impermeable clay layer, the tow path embankment at the location of Venture Richmond's proposed amphitheater is structurally reinforced by an interior supporting wall. The 1880 copy of the 1868 Pleasants map (detail) shows the "Foundation of Supporting Wall" that supports the tow path for 5100 feet. The canal walls are carefully engineered structures, and this "Supporting Wall" could be irreparably damaged by Venture Richmond's proposal to slice off the tow path embankment to improve sight lines and to make it easier to mow the grass. (Source: C&O Records, 755.43 c2 1868/1880, Library of Virginia)

According to the 1840 annual meeting report of the James River and Kanawha Company, “The excavation of this [lower] level was of an unusually difficult and expensive character. For about one half the distance the bed of the canal was formed by excavations made in granite rock, and for 5100 feet, the tow-path embankment is supported by a massive vertical wall averaging 20 feet in height.”<sup>60</sup> This “foundation of supporting wall” is shown on the 1880 C&O Railroad copy of the 1868 canal map surveyed by Joseph Pleasants.<sup>61</sup> This structural component of the canal embankment may be damaged by Venture Richmond’s proposed slicing of the tow path.

In addition to the impermeable “puddled” clay liner and the internal supporting wall of the tow path embankment, structural features threatened by Venture Richmond’s insensitive proposal also include the former mill races at this section of the canal. These mill races powered industries below the canal and are shown in Trimble’s composite map for 1861.<sup>62</sup>



(Figure 67.) R. D. Trimble composite map showing the many water races from this section of the canal in 1861, with a detail of the Crenshaw race. The canal was carefully engineered to provide transportation and water power for one of the most important industrial areas in the nation. Bulldozing the south bank of the canal would irreparably damage the carefully engineered structure and possibly damage remains of old mill races. (Source: Tredegar Papers, Box 32, Accession Number 23881, 24808, Library of Virginia)

<sup>60</sup> Annual Report, James River and Kanawha Company, September 1, 1840, page 294, Film 372, Reel 5, Library of Virginia

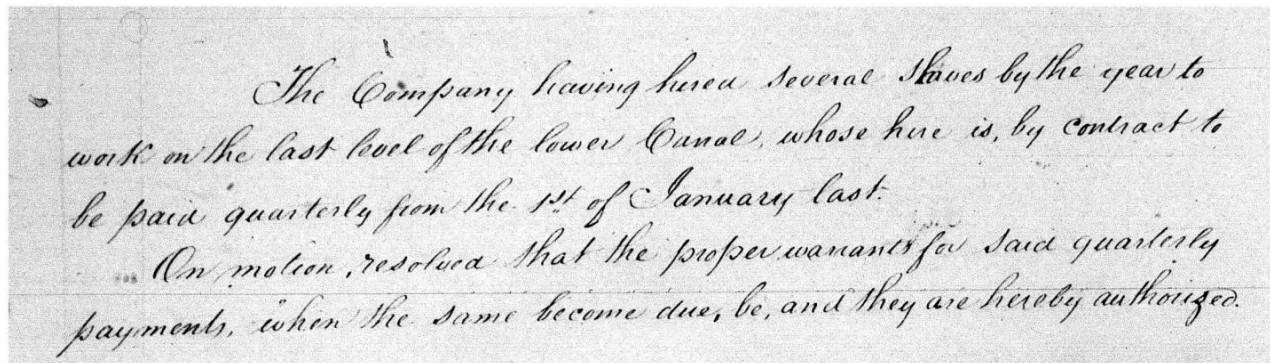
<sup>61</sup> C&O Records, 755.43 c2 1868/1880, Library of Virginia

<sup>62</sup> R.D. Trimble Composite Map, Tredegar Papers, Box 32, Accession Number 23881, 24808, Library of Virginia



## **Sacrifice of slaves and immigrants:**

No discussion regarding the preservation of the surviving authentic James River and Kanawha canal can be made without an acknowledgement of the sacrifices made by the slaves and Irish and German immigrant laborers who built the canal. Many suffered and lost their lives in the extreme and primitive working conditions. It was grueling and dangerous work building the canal and the canal company relied on German and Irish immigrants and slaves for the hard labor. Slaves were inhumanely hired from their owners for the work, much like today one might rent a piece of equipment.



(Figure 68.) The James River and Kanawha Company preferred to hire slaves by the year for work on widening the lower level of the canal because they could not go on strike or protest working conditions. (Source: James River and Kanawha Company minutes, March 7, 1837, Misc. Reel 2049, Library of Virginia)

In 1837 and 1838 the canal company hired hundreds of laborers to enlarge the lower canal, including widening the canal at Tredegar from 40 to 60 feet (now the site of Venture Richmond's proposed amphitheater). The company's 4<sup>th</sup> Annual Report in December 1838 indicated that two-thirds of the workers were immigrants, the majority of whom were Irish, and one third of the workers were slaves. The immigrants went on strike in May and in June for better wages and working conditions. In July hundreds of Irish workers walked off the job after "some fifteen or twenty of the Irishmen suddenly expired under the intensity of the heat." The company redoubled its efforts to hire more slaves, and by September two-thirds of the workers were slaves.<sup>63</sup>

Slaves were considered the most efficient workforce for large construction projects like the James River and Kanawha Canal.<sup>64</sup> Slaves toiled on the canal through the unpredictable Virginia winters and in rain downpours, and in the summer fever season.

<sup>63</sup> Report of the 4<sup>th</sup> Annual Meeting of the James River and Kanawha Company, "Enlargement of the Lower Canal", p. 228-240, Film 372, Library of Virginia

<sup>64</sup> Nomination Report, *The Slave Trade as a Commercial Enterprise in Richmond, Virginia, Multiple Property Submission*, File Number 127-6196, Archives, Virginia Department of Historic Resources



**L**ABORERS WANTED.—The James River and Kanawha Company are in immediate want of several hundred good laborers to work on the old canal within three miles of the city of Richmond—For such, one dollar per day will be paid, they finding their own board. Gentlemen wishing to send negroes from the country are assured that the very best care shall be taken of them. The work is *dry* and I believe perfectly safe. The board of the negroes shall only cost one dollar per week, and their wages paid on the 12th May, 9th June, 14th July, and 11th August.

RICHARD REINS,  
*Agent of the James River & Kanawha Co.*

April 3

108—tf

(Figure 69.) When the canal was enlarged in 1838, including the enlargement of the canal from 40 to 60 feet in width at Tredegar, the James River and Kanawha Company advertised for laborers. "Gentlemen wishing to send negroes from the country are assured that the very best care shall be taken of them." Owners were charged one dollar per week for boarding the slaves. The canal company redoubled its effort to hire slave labor after immigrant workers went on strike for improved wages and working conditions. (Source: *Richmond Enquirer*, April 30, 1838, page 1, column 3, Library of Virginia)

Blacks were treated as if they were immune to these forces that ate away at a free laborer's work year.<sup>65</sup> Health problems, serious injuries, yellow fever, malaria and cholera were annual problems.<sup>66</sup> Contractors paid a bounty of five dollars a head "for each strong able bodied Negro man who should be hired..." for work on the canal. One contractor demanded partial credit of the \$721 contracted to keep each of seven slaves for eight months for work on the James River and Kanawha Canal on the grounds that he had to provide shoes for the slaves and that the slaves were sometimes sick. Another contractor demanded partial credit of the payment for hiring a slave named Tom, whose owner was paid \$115 per year for his work on the canal; Tom was "an old man and totally unable to perform the labor" on the canal, according to the contractor.<sup>67</sup>

<sup>65</sup> Way, Peter, *Workers and the Digging of North America's Canals, 1780-1860*, Cambridge University Press, 2009, p. 128.

<sup>66</sup> Robertson, Gary, *Canal was carved with slave labor*, *Richmond Times Dispatch*, September 26, 1999.

<sup>67</sup> *Digital Library of American Slavery*, University of North Carolina at Greensboro, Petition Analysis Records: 21084209, 21683908, and 21684216.

The Chief Engineer and the Agent on the Lower Canal having stated their views to the Board as to the force necessary to finish the work on the Lower Level and at the Basin, as well as the force necessary to keep the work in order when completed up to Boshes Dam.

Resolved that the Agent be authorized to engage by the year, as many as 20 black men, and to engage by the day as many of the Germans, or Scotchmen, or Portuguese now employed in the Company's service as the Chief Engineer may direct so as to make an aggregate force varying at said Chief Engineer's discretion of between 50 and 70 hands.

(Figure 70.) As work was being completed on widening the lower canal, including the section at Tredegar Iron Works, the Board of the James River and Kanawha Company authorized hiring 20 black men and German, Scotchmen or Portuguese immigrants. It is noteworthy that the slaves were to be engaged by the year while the immigrants were to be engaged by the day. The Irish immigrants, who were responsible for the strikes in May and June, were not included in this employment effort. (Source: James River and Kanawha Company minutes, December 22, 1838, Misc. Reel 2049, Library of Virginia)

**STOP THE RUNAWAYS—**

**\$200 REWARD.**

The following negro men left the Tredegar Iron Works on Saturday last. We will pay a reward of two hundred dollars for their apprehension and delivery to us in this city, or in any jail where we can get them; or in the same proportion for the arrest of either of them:

**FLEMING**, has a dark skin, about 5 feet 8 inches high, has a slight impediment in his speech, and has a wife living on the Brook turnpike.

**JIM LIGHTFOOT**, has a very dark skin, good teeth, about 5 feet 4 inches high, has a wife in Hanover county, at Dr. Gaines's.

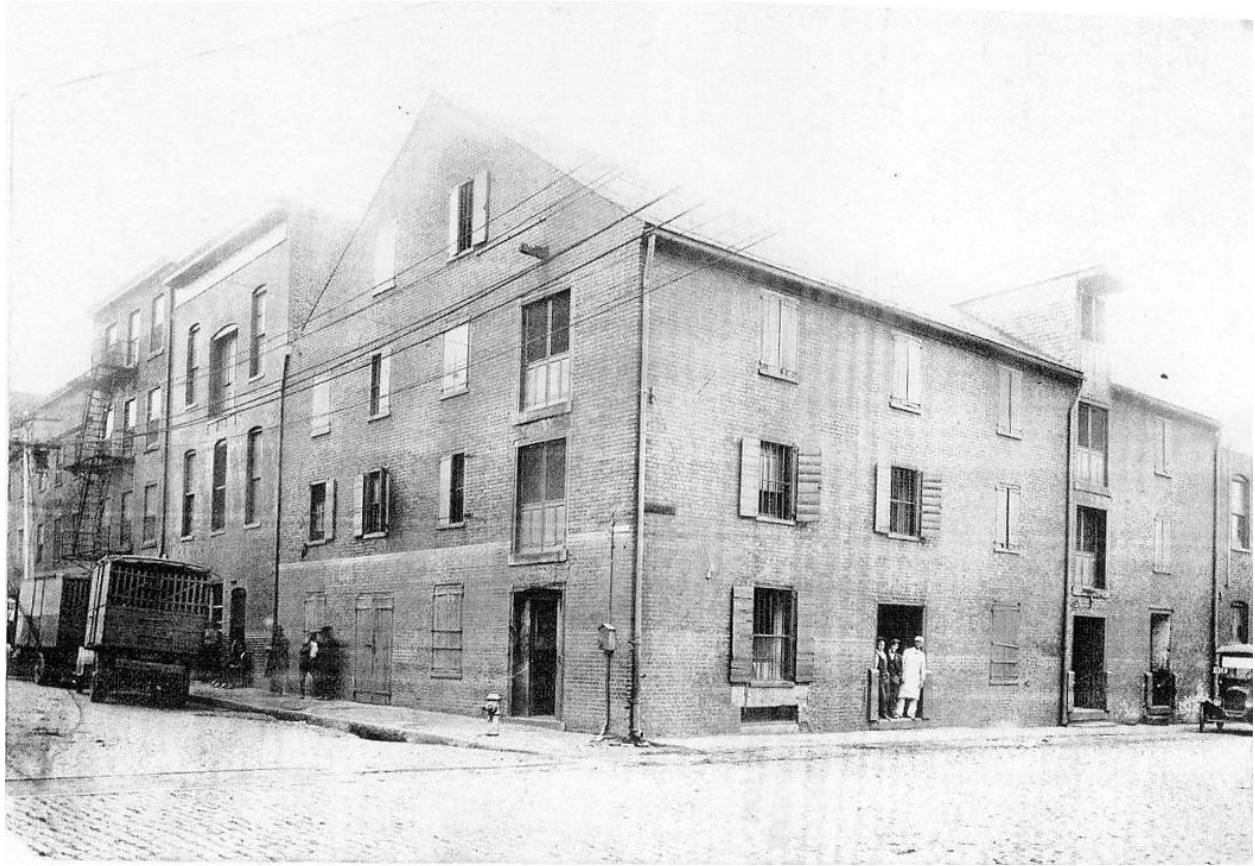
**GEORGE WASHINGTON**, has a brown skin, downcast look when questioned, about 5 feet 6 inches high.

**CAMBRIDGE**, has not a very healthy appearance, brown skin, 5 feet 8 inches high, has a wife near the Second African Church.

**WILLIS DICKENSON**, has a dark skin, large mouth and eyes, speaks slowly, about 6 feet high, can read and write, good teeth, and has a wife in the city.

my 13-1w J. R. ANDERSON & CO.

(Figure 71.) This advertisement offered a reward for the return of five slaves who escaped from the Tredegar Iron Works, one of whom ironically was named George Washington. Tredegar increasingly relied upon slave labor during the Civil War. (Source: *Richmond Daily Dispatch*, May 16, 1862, EncyclopediaVirginia.org)



(Figure 72.) It is chilling to see the bars on even the fourth story windows in this early 20<sup>th</sup> century photograph of the former slave market at 15<sup>th</sup> and Cary Street in Richmond. Many slaves who worked on the James River and Kanawha Canal were probably sold at Richmond slave markets. Two-thirds of the workers on the canal were slaves in the autumn of 1838 when the enlargement of the lower level of the canal was being completed, including widening the canal at Tredegar from 40 to 60 feet wide. (Source: Cook Collection, Valentine Museum)

The James River and Kanawha Canal was added to Richmond's Slave Trail to honor the slaves who toiled and lost their lives in this huge construction project. **The authentic canal built with so much sacrifice by slave and immigrant laborers should be respected and not damaged for trivial reasons, like improving sight lines for a stage and making it easier to mow the grass.**

The Tredegar Iron Works employed many immigrants, particularly German and Welsh immigrants who were highly skilled iron workers, and many of these immigrants lived in the adjacent Oregon Hill neighborhood.<sup>68</sup> The iron works were also grueling and dangerous work. Tredegar increasingly relied on slave labor during the Civil War which caused friction with the free workers. In 1862 an advertisement posted a reward for the capture of five runaway slaves who left Tredegar Iron Works. There is a terrible irony in the fact that one of the runaway slaves was named after George Washington, who founded the canal that powered Tredegar.

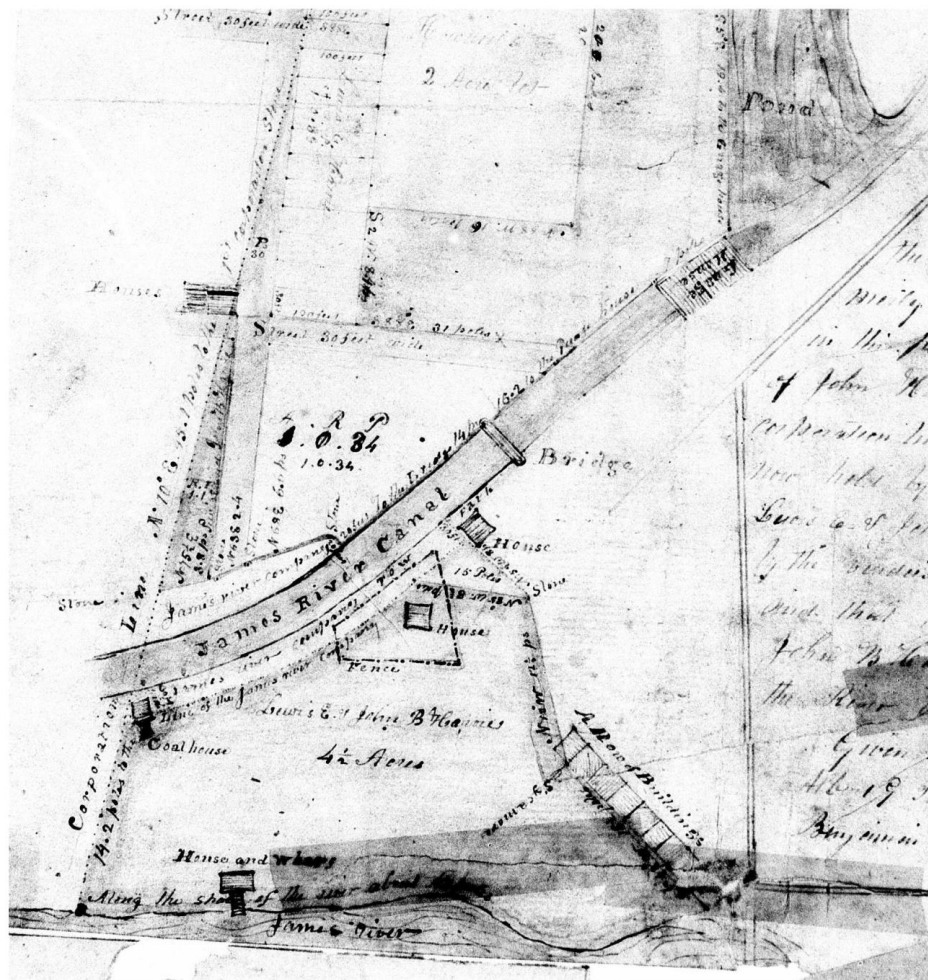
<sup>68</sup> Nomination Report, Oregon Hill Historic District, File Number 127-362, Archives, Virginia Department of Historic Resources.



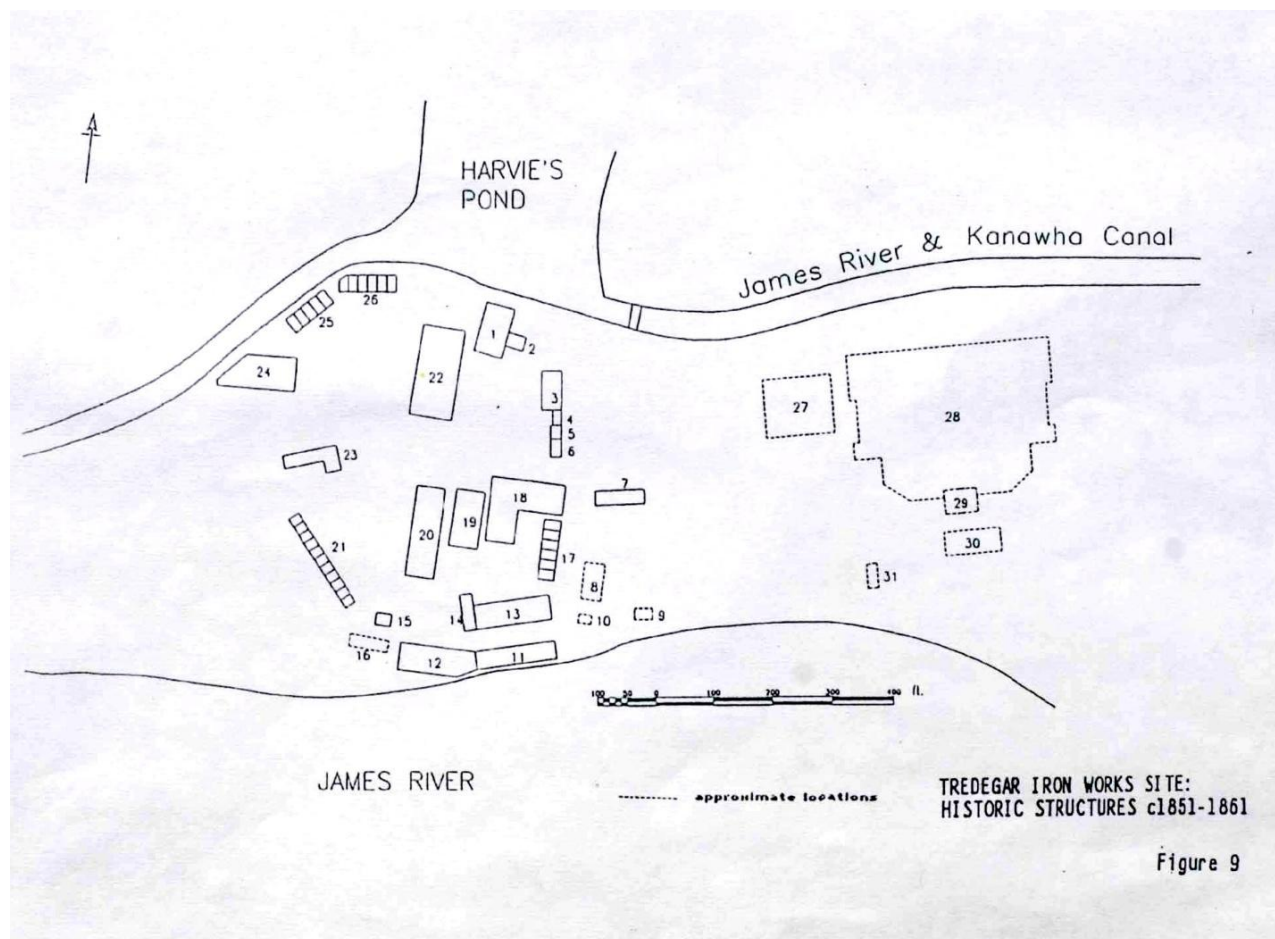
### Archaeological resources on the proposed amphitheater site:

The “Tredegar Green” property is the site of important archaeological resources, which were extensively catalogued chronologically in the 1992 Raber Associates report on the Tredegar Iron Works Historic Site. The 1848 Harvie Plat also indicated that there was a coal house and worker housing on the site, and a house that was possibly a canal toll house.

*(Venture Richmond’s historic assessment did not reference the extensive research of the Raber-Tredegar report and did not even indicate that the Venture Richmond property below the canal was included in the Tredegar Historic Site. To quote from the inaccurate assessment of Venture Richmond’s consultant, “We also know that prior to the Tredegar Iron Works Company acquiring the land containing the project area shortly after the Civil War, that there is no map evidence of significant or substantial develop [sic] or use of this property.”)*



(Figure 73.) This Harvie plat from 1848 shows a coal house, a row of worker housing, and a house that was possibly a canal toll house. (Source: Henrico Plat Book 3, Page 417, 1848, Library of Virginia)



(Figure 74.) Raber Associates in 1992 conducted a detailed evaluation of the archaeological resources on the Tredegar Site for the period 1798 to 1957. The study included the property now owned by Venture Richmond. Archaeological resources dating from c. 1851-1861 are shown on Figure 9. The row of dwellings (21) is also shown on the 1848 survey of Harvie property. (Source: Raber Associates, Tredegar Report)

LEGEND TO FIGURE 9

No.	Map Period Site Name(s)	Site Date Range	Table 1 Reference
1	J. R. Anderson spike mill	c1799-1872	
2	J. R. Anderson spike mill furnaces	c1852-1861	2
3	J. R. Anderson iron storehouse	c1799-1872	3
4	J. R. Anderson dwelling	c1837-1865	23
5	J. R. Anderson dwelling	c1837-1865	23
6	J. R. Anderson office and dwelling	c1803-1865	5
7	J. R. Anderson office	c1816-present	12
8	J. R. Anderson bark house	c1804-1861	15
9	J. R. Anderson engine house	c1804-1861	13
10	J. R. Anderson stable	c1804-1861	14
11	J. R. Anderson blacksmith shop	c1850-1895	27
12	J. R. Anderson boiler shop	c1852-1957	30
13	J. R. Anderson pattern shop	c1837-1957	21
14	J. R. Anderson lumber house/gun chipping house	c1832-1861	18
15	J. R. Anderson blacksmith shop	c1832-1863	19
16	Bowers & Snyder stove works: office & pattern depository	c1852-1868	28*
17	J. R. Anderson foundry dwellings	c1837-1864	24
18	J. R. Anderson foundry	c1837-1863	20
19	Crenshaw flour mill/woolen mill	c1854-present	31
20	J. R. Anderson locomotive shop	c1852-1863	6
21	J. R. Anderson dwellings	c1832-1872	17
22	J. R. Anderson rolling mill	c1837-1861	22
23	J. R. Anderson dwelling	c1799-1865	7
24	Crenshaw warehouse & grain elevator	c1854-1873	32
25	J. R. Anderson rolling mill dwellings	c1840-1872	25
26	J. R. Anderson rolling mill dwellings	c1840-1872	25
27	R. Archer & Co. rolling mill	1847-1861	26
28	Virginia Manufactory of Arms (main building)	c1800-1865	8
29	Virginia Manufactory of Arms foundry	c1807-1865	10
30	J. B. Bragg flour mill	c1807-1865	9
31	Virginia Manufactory of Arms dwelling	c1801-?	11

\*location conjectural; Bowers & Snyder foundry and stove works location presently unclear and not mappable

(Figure 75.) Legend to Raber Associates Figure 9 (above) identifies the many buildings on the site from 1851-1861. This is a very well-documented archaeological site. It is documented that there were buildings on what is now the site of Venture Richmond's proposed amphitheater before and after the Tredegar Iron Works opened in 1836. (Source: Raber Associates, Tredegar Report)



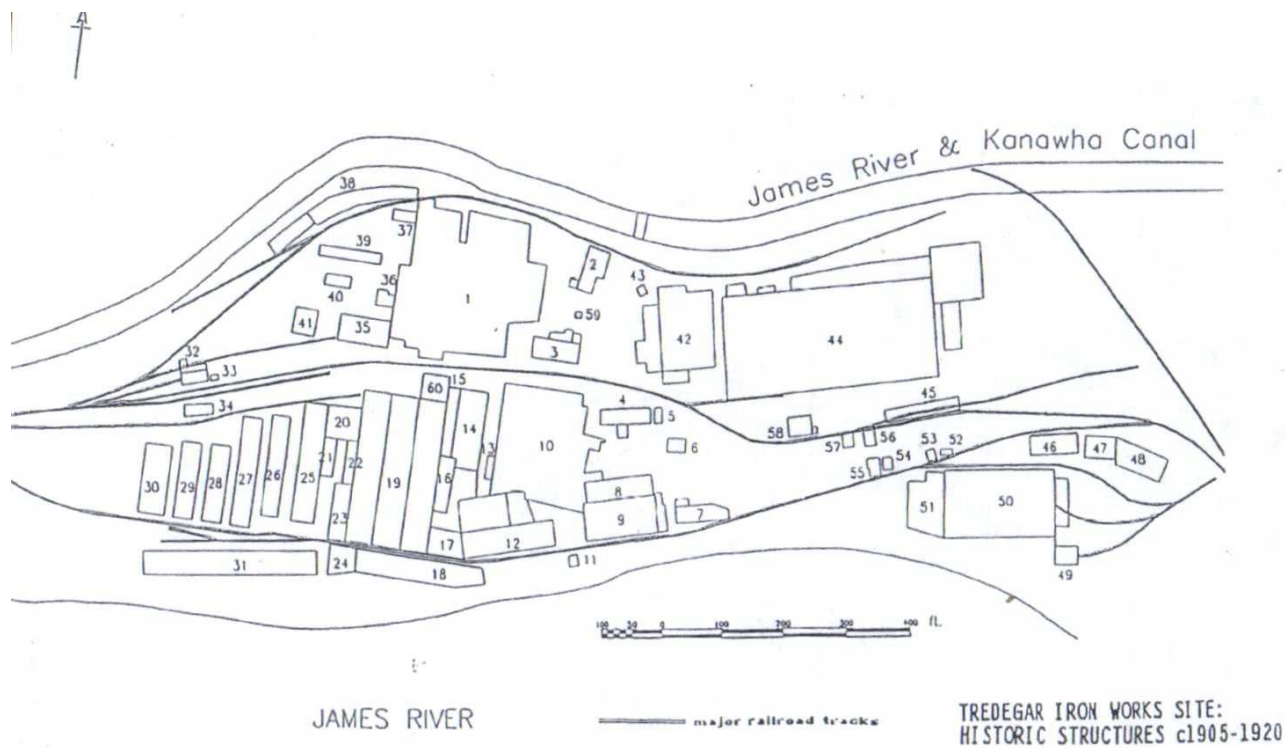


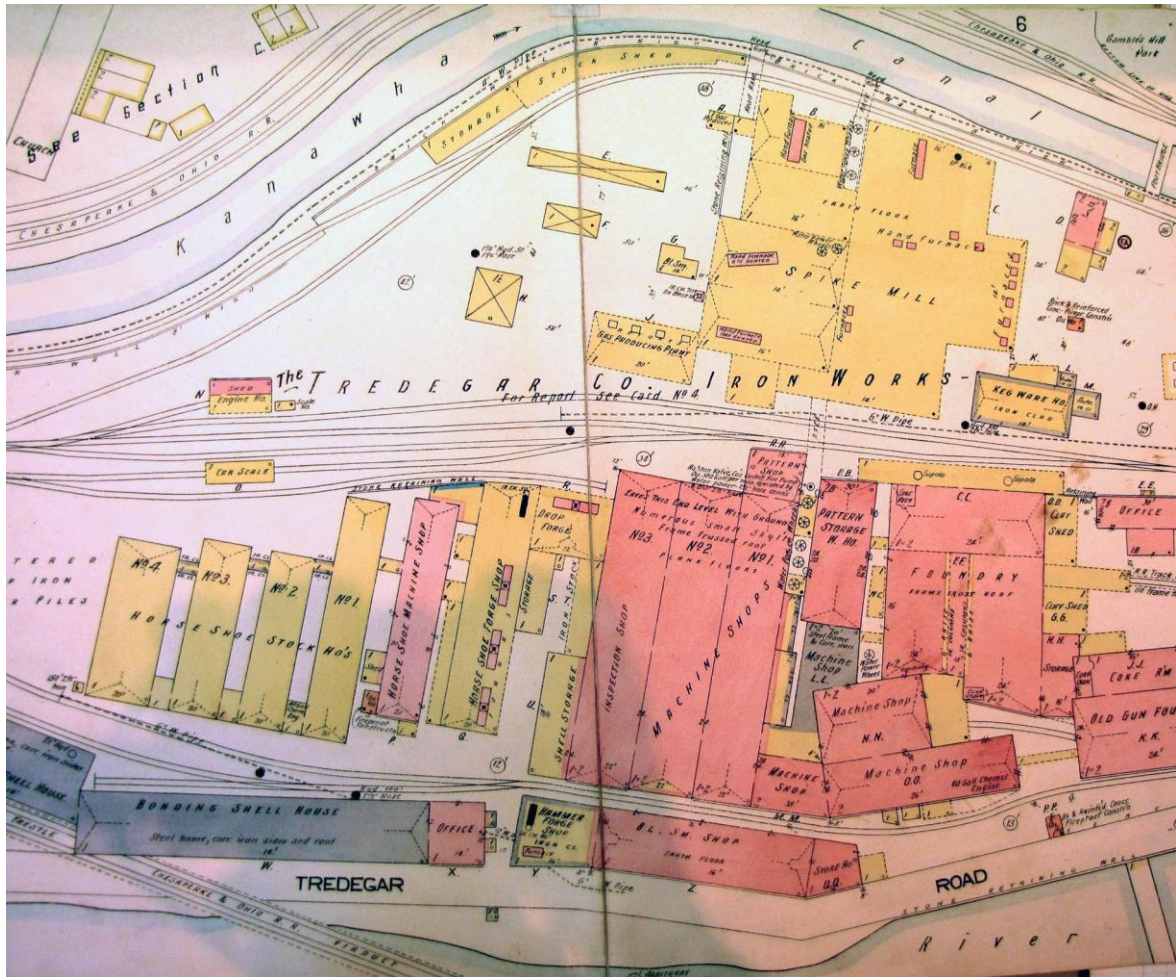
Figure 15

(Figure 76.) Archaeological resources dating from c. 1905-1920 are shown on Figure 15 of the Raber Associates report. These resources correspond to the buildings shown in the 1905 Sanborn map. The Raber Associates report cited the horseshoe manufactory as being of special archaeological interest. At least two of the buildings associated with the Tredegar horseshoe manufactory were on the site of what is now Venture Richmond's proposed amphitheater. (Source: Raber Associates, Tredegar Report)

LEGEND TO FIGURE 15  
(all Tredegar Company structures)

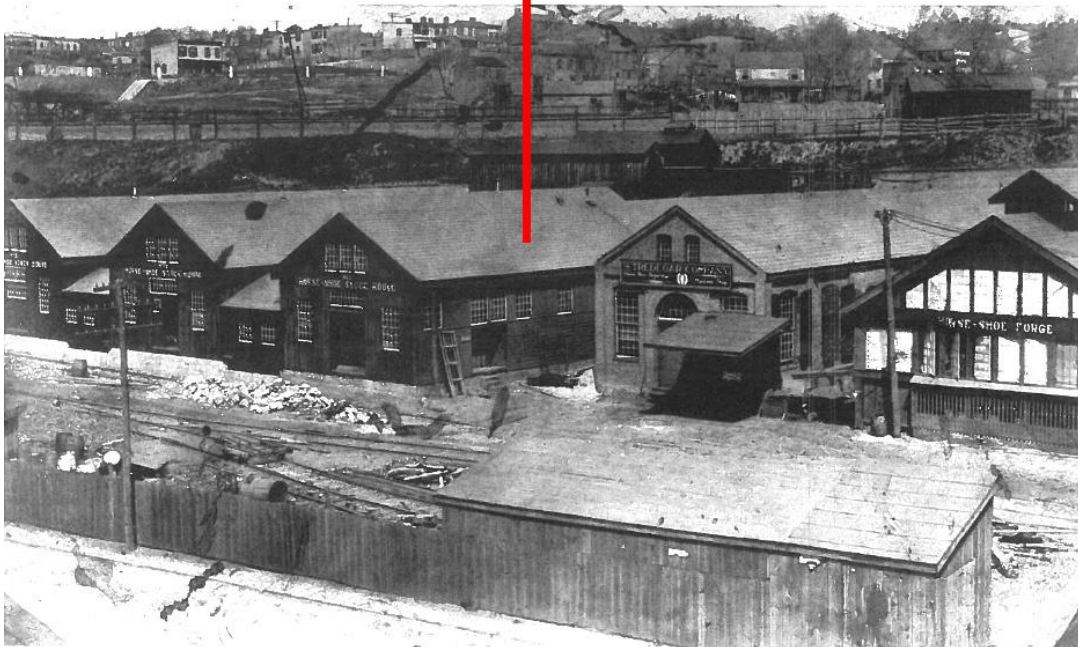
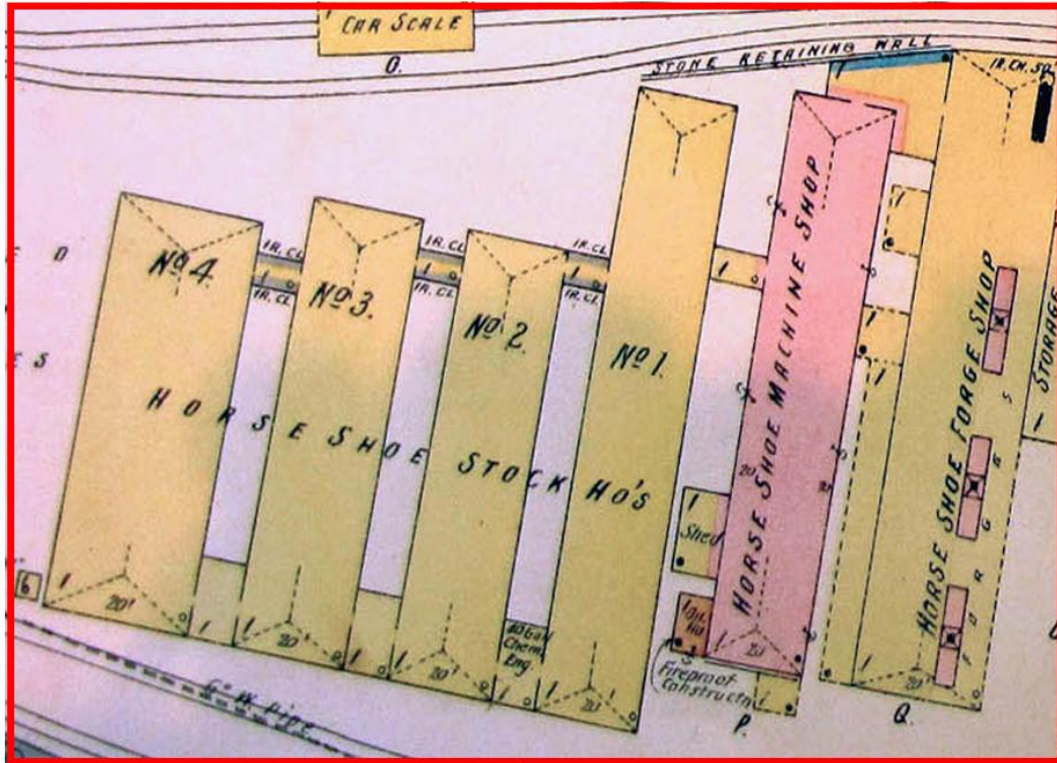
No.	Map Period Site Name(s)	Site Date Range	Table 1 Reference
1	spike mill	c1861-1957	22
2	store	1868-present	41
3	keg storage	c1863-1957	36
4	office	c1816-present	12
5	office addition	c1905-1950	12
6	carpenter shop	c1863-1920	37
7	casting and cleaning shed	c1915-1980	81
8	furnace house	1861-present	34
9	foundry	1861-present	34
10	car wheel foundry	1889-1957	20
11	oil house	c1915-1957	82
12	machine shop	c1837-1957	21
13	foundry addition/toilet	c1915-1957	20
14	pattern storage building	c1867-present	31
15 & 16	machine shop sheds	c1915-1957	46
17	machine shop	c1867-1957	44
18	blacksmith shop	c1889-1957	30
19	boiler & machine shop	1872-1956	46
20	drop forge shop	c1915-1957	46
21 & 22	storage sheds	c1915-1925	46
23	shell storage shed	c1915-1957	46
24	hammer forge shop	c1915-1957	30
25	horseshoe forge shop	c1887-1927	57
26	horseshoe machine shop	c1887-1927	58
27	horseshoe warehouse	c1887-1927	59
28	horseshoe stock house no. 2	c1910-1926	74
29	horseshoe stock house no. 3	c1910-1926	75
30	horseshoe stock house no. 4	c1910-1926	76
31	bonding shell house and office	c1915-1957	83
32	engine house	c1915-1957	85
33	shed	c1915-1945	85
34	car scales	c1915-1945	84
35	Siemens gas producer	c1884-1920	52
36	blacksmith shop	c1905-1957	69
37	gas producer house	c1905-1930	64
38	storage sheds	c1890-1940	63
39	wagon shed	c1905-1926	42
40	storage barn	c1905-1957	42
41	stable	c1905-1975	68
42	forge shop	c1884-1957	53
43	shed	c1905-1940	72
44	merchant/bar mill	c1905-1957	26
45	iron stock shed	c1910-1920	73
46	hoop warehouse	c1915-1975	79
47	cooper shop	c1915-1957	78
48	stave shed	c1915-1957	77
49	clay shed	c1915-1957	80
50	new shell foundry	1917-1986	87
51	cleaning shed	c1917-1986	88
52	turbine house	c1904-1986	66
53	dynamo shed	c1904-1940	67
54	iron cutter shed	c1904-1940	65
55	turbine house	c1903-1957	--
56	storage shed	c1905-1940	72
57	carpenter shop	c1905-1940	71
58	pay office	c1861-1957	35
59	oil house	c1915-1957	--
60	carpenter shop	c1915-present	86

(Figure 77.) Legend to Figure 15 (above) identifies the buildings on the Tredegar Historic Site from 1905-1920 as surveyed by Raber and Associates in 1992. Because Tredegar buildings were on the west side of the complex, this area (now owned by Venture Richmond and the City of Richmond) was included in the Tredegar Historic Site. (Source: Raber Associates, Tredegar Report)



(Figure 78.) This 1905 Sanborn map identifies Tredegar buildings, including buildings for the horseshoe works, which were formerly on the site of what is now Venture Richmond's proposed amphitheater. Venture Richmond's historical analysis failed to mention that all of the Venture Richmond property below the canal is listed on the National Register of Historic Places as part of the Tredegar Historic Site. (Source: Library of Virginia)





(Figure 79.) The Tredegar horseshoe works are shown in a 20<sup>th</sup> century photograph and in the corresponding 1905 Sanborn insurance map. The two horse shoe buildings No. 3 and No. 4 were on the site of what is now Venture Richmond's proposed amphitheater. (Sources: Sanborn map, Library of Va; Tredegar photograph, Valentine Museum)



(Figure 80.) This photograph shows the Tredegar horseshoe manufactory buildings from the west. The two most western buildings of the Tredegar horseshoe works were on the site of what is now Venture Richmond's proposed amphitheater. (Source: Interpretive signage, Tredegar Iron Works)

The Raber Associates survey of the extensive archaeological resources of the site identified the horseshoe manufacture as being of particular interest. According to the Raber report, "There appears to be little available information on the American industrial horseshoe manufacture. The undisturbed site of the demolished c1887 horseshoe forging shop could provide some archaeological information on shop layout, if used in conjunction with informant and historic view data, making his site potentially significant under National Register criterion D. The c1872 horseshoe shop, later incorporated into the spike mill, could also retain some potentially significant archaeological data ..."<sup>69</sup> Two Tredegar buildings related to the horseshoe enterprise were on the site of what is now Venture Richmond's proposed amphitheater.

**A site with such significant archaeological resources should not be indiscriminately bulldozed to create an artificial incline that bears little relationship to the character of the landmark historical site.** The "Tredegar Green" property below the canal is all listed on the National Register of Historic Places as part of the Tredegar Historic Site, and the site includes buildings associated with Tredegar's horseshoe industry. Venture Richmond's proposal to create one artificially smooth amphitheater incline ignores the great historical significance of the site and could possibly cause the property to be de-listed from its inclusion in the Tredegar Historic Site.

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<sup>69</sup> Raber Associates, *Historical and Archaeological Assessment Tredegar Iron Works Site*, prepared for Valentine Museum and Ethyl Corporation, page 67, Lyle Browning Collection



## **Railroad tracks connecting Tredegar with Belle Isle:**

The railroad tracks that are now on the tow path on City of Richmond and Venture Richmond property were the connecting link between the Tredegar Iron Works and the Belle Isle Manufacturing Company, later known as the Old Dominion Iron and Nail Company on Belle Isle. The rail line was constructed in the 1870s or 1880s as the Tredegar Branch of the Richmond and Danville Railroad. The stone pylons have survived in the James River of the bridge that carried the Tredegar Branch Railroad across the James River from Belle Isle.



(Figure 81.) The railroad tracks on the tow path connected the iron works on Belle Isle with Tredegar. Venture Richmond proposes removing these railroad tracks, which only add a few inches to the height of the towpath, in order to improve the sight lines of the amphitheater and to build a bike path. Venture Richmond successfully opposed placing a dedicated bike lane on the new 2<sup>nd</sup> Street connector, so replacing the authentic Tredegar-Belle Isle rail link with a bike path would result in a 100 foot bike trail to nowhere. (Source: OHHIC)

These railroad tracks contribute to the understanding of Tredegar's relationship to the iron works on Belle Isle. Tredegar was closely involved with the manufacturing railroad tracks and spikes, and it is possible that these tracks and spikes were made at Tredegar. The tracks help interpret the evolution of transportation from when the canal was the preeminent mode of moving goods to the railroad era. Every effort should be made to preserve the surviving historic fabric relating to the nationally significant Tredegar Historic Site. **The tracks add only inches to the height of the tow path but add a significant piece of the story of the canal's interrelationship with the railroad, and Tredegar's connection with the iron works on Belle Isle.** Why remove the authentic Tredegar Branch railroad tracks from the Tredegar Historic Site? According to the Secretary of Interior standards for rehabilitation, "Changes to a property that have acquired historic significance in their own right will be retained and preserved."

Venture Richmond has proposed removing the remnant of this rail connection with Belle Isle to improve sight lines for its amphitheater and to build a bike trail. Since Venture Richmond successfully opposed having a bike lane on the new 2<sup>nd</sup> Street Connector, this would be a 100 foot long bike trail to nowhere. The tracks are a negligible impediment to sight lines.





**(Figure 82.) These surviving railroad tracks on the canal tow path were part of the Tredegar Branch of the Richmond and Danville Railroad. They connected the Old Dominion Iron and Nail Company on Belle Isle with Tredegar Iron Works. Tredegar made railroad tracks and spikes, so it is possible that these tracks and spikes were made at Tredegar. The tracks contribute to the Tredegar Historic Site as well as to the James River and Kanawha Canal Historic District. It is unnecessary to remove these tracks, which are a negligible impediment to the sight lines of the proposed amphitheater. The tracks help interpret the evolution from canal to railroad as the primary transportation mode for moving goods in the Commonwealth. (Source: OHHIC)**



**(Figure 83.)** These railroad tracks within the N.P.S. Tredegar Historic Site are a continuation of the Tredegar Branch tracks on the tow path on Venture Richmond and City of Richmond property. Also visible in this photograph is the Tredegar wall; a 100 foot section of this same wall was illegally demolished in 2012 on City of Richmond property that was leased to Venture Richmond. (Source: OHHC)



**(Figure 84.)** The stone pylons in the James River and a bridge section on the banks of Belle Isle have survived from this bridge, which was photographed around 1972. A former bridge on these same surviving stone pylons carried the Tredegar Branch of the Richmond and Danville Railroad, connecting Tredegar Iron Works with Old Dominion Iron and Nail Company on Belle Isle. (Source: VintageRVA.blogspot.com)





(Figure 85.) This photograph dated 1870s-1880s includes a canal boat in Harvie's Pond and shows the rail bridge connecting the Old Dominion Iron and Nail Company on Belle Isle with the Tredegar Iron Works. The stone pylons for this rail bridge still survive in the James River. Trains crossed this rail bridge and arrived at Tredegar via the surviving railroad tracks now on the tow path of the canal. The two transportation modes coexisted for a while as the primary means of transport slowly evolved from canal to railroad. (Source: Valentine Museum)

"To the officers, employees and agents of the James River and Kanawha Company.  
 By deed executed on the 4th day of March, 1880, this Company has conveyed all of its works, property and franchises to the Richmond and Alleghany Railroad Company and that Company has entered into possession, control and management of the same. Your future instructions will be received from the office of that Company and be obeyed accordingly.  
 The James River and Kanawha Company, by  
 John W. Johnston, President.  
 Richmond March 5-1880."

(Figure 86.) Minutes of the Board of the James River and Kanawha Company record the conveyance of all of the canal's "works, property and franchises to the Richmond and Alleghany Railroad Company" on March 4, 1880. The Tredegar Branch railroad tracks aid in the interpretation of the evolution of the primary means of transporting goods in Virginia from canal to railroad. (Source: James River and Kanawha Company minutes, March 4, 1880, Misc. Reel 2050, Library of Virginia)





**(Figure 87.) The surviving railroad tracks of the Tredegar Branch of the Richmond and Danville Railroad are seen from the west on the tow path of the James River and Kanawha Canal. These tracks provide an historical link between Tredegar and the iron works on Belle Isle and help interpret the evolution of transportation history. Also visible in this photograph is a pallet of bricks that were stacked after the illegal demolition of the Tredegar wall on City of Richmond property in October 2012. (Source: OHHIC)**



### **Tredegar wall (anticipatory demolition?):**

On October 16, 2012, a contractor illegally demolished with a bulldozer, on city property leased to Venture Richmond, the historic 100 foot long Tredegar wall on the site of the proposed amphitheater. The Tredegar wall had survived for almost a century-and-a-half on the canal tow path and had enclosed the northern boundary of the Tredegar Iron Works. **The Tredegar wall demolition was carefully coordinated to occur two days after the end of the Venture Richmond's Folk Festival and one day before the beginning of the construction of the 2<sup>nd</sup> Street Connector.** The contractor accessed the Tredegar wall by bulldozing a rut up the side of the canal on Venture Richmond property. The Tredegar wall would have been in the sight lines of Venture Richmond's proposed amphitheater, which includes this city property. The contractor claims the 100 foot wall "accidentally" fell down. An investigation is warranted to determine who hired the contractor, J. E. Liesfeld Contractor, and determine if this was anticipatory demolition to avoid regulatory review.



(Figure 88.) A bulldozer accessed the 100 foot long Tredegar wall on city property through Venture Richmond property. This contractor was not hired as part of the construction of the 2<sup>nd</sup> Street Connector. Workers were photographed at the scene of the illegal demolition stacking the bricks on pallets within an hour of the demolition. The wall demolition was carefully coordinated to occur two days after the Richmond Folk Festival and one day before the construction of the 2<sup>nd</sup> Street Connector began. No entity has been held accountable for hiring the contractor to illegally demolish the Tredegar wall on City of Richmond property without a permit. An investigation is needed to determine if the removal of this wall anticipatory demolition. (Source: OHHIC)

**At the time of the Tredegar wall demolition on October 16, 2012, Venture Richmond was leasing and had full legal responsibility for the city property where the wall was demolished.** The city property, identified with city assessor code W0000051010, was leased to Venture Richmond on July 23, 2012 by Richmond City Council ordinance.<sup>70</sup> According to a Venture Richmond time-line, the Venture Richmond director met with staff of the Virginia Department of Historic Resources on September 7, 2012, and may have been informed at this meeting that a Section 106 review would be required.<sup>71</sup> It is important to recognize how quickly the city's treasured history can "accidentally" disappear when bulldozers operate on historic sites.

The Mayor of the City of Richmond is the President of Venture Richmond, but Venture Richmond failed to file a police report regarding the illegal wall demolition. The City of Richmond Police Department did not allow a witness of the wall demolition to file a police report.<sup>72</sup> According to a radio interview, the Director of Venture Richmond stated that he was never interviewed by the police regarding the wall demolition.<sup>73</sup> No entity has been held accountable for hiring J. E. Liesfeld Contractor that undertook this illegal demolition. An investigation is warranted to determine if the illegal demolition on city property of the Tredegar wall was intentional anticipatory demolition to avoid state and federal regulatory review.



**(Figure 89.) An investigation is needed to determine if the illegal demolition on city property of the Tredegar wall was intentional anticipatory demolition to avoid state and federal regulatory review. A citizen who witnessed the demolition was not even allowed to file a police report. (Source: OHHIC)**

<sup>70</sup> Exhibit F, "Lease Agreement," Richmond City Council Ordinance No. 2012-153-110, July 23, 2012.

<sup>71</sup> *Key Stakeholder Meetings*, Venture Richmond, submission to the City of Richmond Planning Department

<sup>72</sup> Charles Pool witnessed the bulldozer demolishing the Tredegar wall, on October 16, 2012, and photographed the workers staking the bricks on pallets to resell, but the Police Department refused to accept a police report.

<sup>73</sup> Don Harrison interview with Venture Richmond Director Jack Berry; comment at 1 hour, 11 minutes, 14 seconds in interview; Open Source program, WRIR, July, 26, 3013.





**(Figure 90.)** On October 16, 2012, approximately 100 feet of the historic eight-foot-tall Tredegar wall was illegally demolished by a bulldozer on City of Richmond property on the site of Venture Richmond's proposed amphitheater. Venture Richmond was leasing the property at the time of the illegal demolition and failed to file a police report. The proposed amphitheater includes the site of the demolished wall, which would have blocked amphitheater sight lines. An investigation is needed to determine if this wall was removed as anticipatory demolition to preempt the Section 106 review of the project. (Source: OHHIC)

### **Oregon Hill's important associations with the canal:**

While it is widely known that there is a close association between the Oregon Hill Historic District and the Tredegar Iron Works, because of the large number of Tredegar workers who lived in Oregon Hill, it is less commonly known that there are important associations between Oregon Hill and the James River and Kanawha Canal. The southern boundary of the Oregon Hill Historic District is defined by the steep decline at the edge of Oregon Hill Park that leads to the James River and Kanawha Canal.<sup>74</sup>



(Figure 91.) Belvidere, here shown in a painting by Benjamin Latrobe, was purchased in 1798 by John Harvie, who served with George Washington as a founding Director of the James River Company. Belvidere was later owned by Benjamin James Harris who served as an engineer for the canal. Harris' father, James Harris, was the first General Manager of the James River Company. (Source: Marie Tyler-McGraw, *At the Falls of the James*, University of North Carolina Press, page 47, 1994)

On August 20, 1785 John Harvie was elected as a founding Director of the James River Company at the same meeting of the subscribers that elected George Washington as the newly formed company's president.<sup>75</sup> Fourteen years later Harvie purchased from Washington's nephew, Bushrod Washington, the Belvidere estate that was originally built on Oregon Hill by William Byrd III, of Richmond's founding family.

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<sup>74</sup> Nomination Report, Oregon Hill Historic District, File Number 127-362, Archives, Virginia Department of Historic Resources.

<sup>75</sup> Dunaway, Wayland, *History of the James River and Kanawha Company*, Columbia University, New York, 1922, page 26.



John Harvie lived at Belvidere until his death in 1807.<sup>76</sup> Harvie, a lawyer and merchant, not only had a vital role in the advancement of the canal, but he also had the vision to realize the important role that the canal and Harvie's Pond could play in providing water to power industries on his property below the canal. At the beginning of the 19<sup>th</sup> century, Harvie established several industries on his property between the canal and the banks of the James River powered by the water from the canal, including a flour mill and tannery.<sup>77</sup>

In 1814, Benjamin James Harris purchased the Belvidere estate after the death of John Harvie. Benjamin James Harris formerly served as an engineer for the canal, and his father, James Harris, was the first General Manager of the James River Company. Benjamin Harris built a cotton mill near Oregon Hill powered by the water from the canal. Harris had an important role in the development of Oregon Hill by laying out the Plan of Belvidere from the original 17 acres of the estate. The canal was the southern border for the Belvidere property. Harris partnered with Jaquelin Harvie, the son of John Harvie, and fellow Quaker George Winston in developing the Plan of Sydney, which included the portion of Oregon Hill north of Spring Street and much of the Fan District.<sup>78</sup>

ARCHIBALD THOMAS.

april 15—ts

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## BELVIDERA.

**T**HAT beautiful and desirable situation, of a mile from the Capitol, containing elegant buildings, with about 10 acres of Land, under a brick fence 9 feet high, with a large garden, well laid out, and a green House.

RABBIT WARREN, &c. &c. is for lease or rent.

BENJ. JAMES HARRIS.

feb. 24—ts

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### Ten Dollars Reward.

**A**BSCONDED from the Subscriber on Tuesday, the 11th inst. a Slave named

(Figure 92.) Benjamin James Harris purchased the Belvidere estate in 1814 and advertised it for lease in 1820. Harris formerly served as an engineer for the canal, and his father, James Harris, was the first general manager of the canal company. (Source: *Richmond Compiler*, April 19, 1820, page 1, column 2, Library of Virginia)

<sup>76</sup> Scott, Mary Wingfield, *Old Richmond Neighborhoods*, William Byrd Press, Richmond, 1984, page 213 and 214

<sup>77</sup> Raber Associates, *Historical and Archaeological Assessment Tredegar Iron Works Site*, prepared for Valentine Museum and Ethyl Corporation, page 16, Lyle Browning Collection

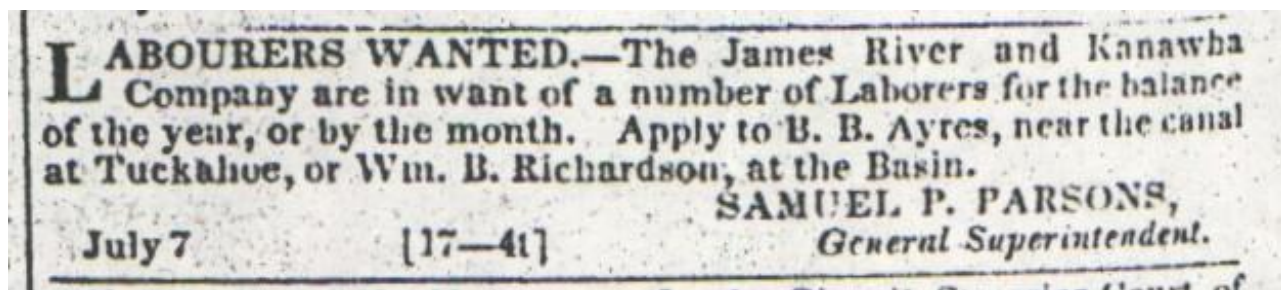
<sup>78</sup> Pool, Charles and Ward, Dulaney, *Plainly Significant, The Jacob House; Richmond Journal of History and Architecture*, Vol. II, No. 1, Spring 1995, William Byrd Branch, Association for the Preservation of Virginia Antiquities





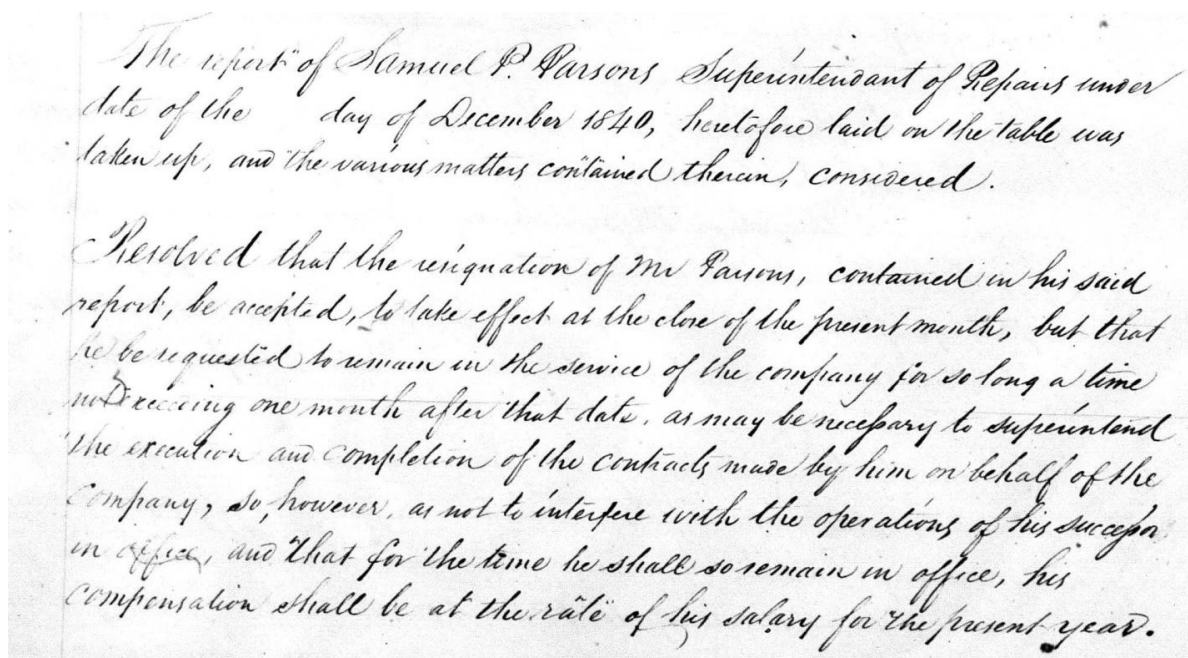
**(Figure 93.) The 1819 Samuel Parsons House at 601 Spring Street is a contributing structure to the Oregon Hill Historic District. The park across Spring Street from the house is named for Parsons. Samuel P. Parsons served as the Superintendent of the Canal in 1840 when the canal was expanded to Lynchburg. (Source: Historic American Buildings Survey, c. 1933, 44-RICH, 78—1, Library of Congress)**

Samuel P. Parsons was the Superintendent of the canal in 1840 when it was successfully expanded to Lynchburg. Parsons' home, built in 1819, survives in the Oregon Hill Historic District at 601 Spring Street. Parsons was a Quaker who served two decades earlier as the Superintendent of the Penitentiary. As Superintendent of the Canal, Parsons placed advertisements seeking laborers for work by the month or for the balance of the year.



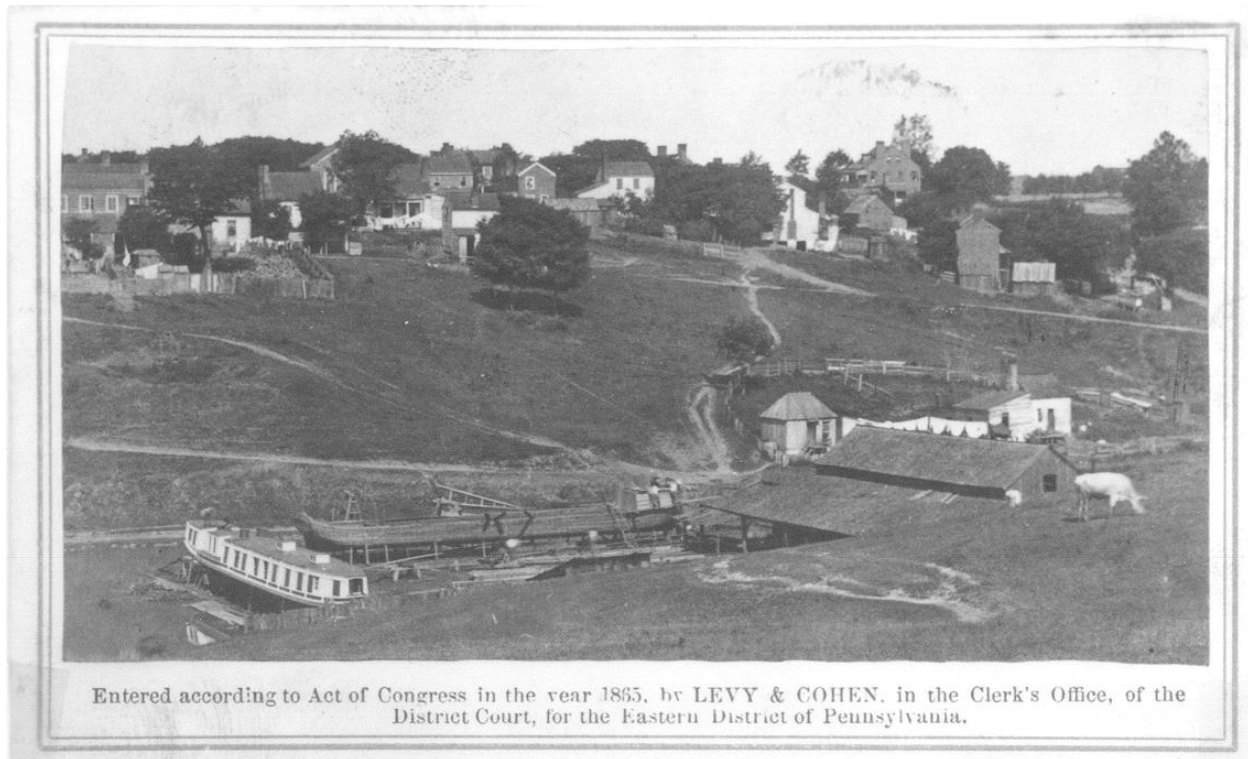
(Figure 94.) Parsons advertised in 1840 for workers to complete the canal to Lynchburg. The volume of canal traffic greatly increased, and the revenue from canal tolls doubled in 1841 after the expansion of the canal to Lynchburg. (Source: *Richmond Enquirer*, July 7, 1840, page 2, column 6, Library of Virginia)

Parsons advertised for lock-keepers, of sober and steady habits, for over thirty locks in the canal, noting that they would not be allowed to sell groceries or “raise animals or fowls to go at large.” Parsons printed regulations for the canal that indicated the canal was narrower above Maiden’s Adventure Dam: “No boats of a width more than thirteen and a half feet will be permitted to pass the locks above Maiden’s Adventure Dam.” In 1840 Parsons wrote his daughter, “I have now disposed of getting the boats higher up the canal than Joshua Falls Dam twelve miles from Lynchburg. To this point they may, I think, go in about ten days. Like most other public work in Virg’a things are managed with tails in instead of a head.”<sup>79</sup>



(Figure 95.) The minutes of the James River and Kanawha Company record that Parsons’ resignation was accepted in December of 1840. Parsons died in February of 1842 at age 58. (Source: James River and Kanawha Company minutes, December 22, 1840, Misc. Reel 2049, Library of Virginia)

<sup>79</sup> Pool, Charles, *The Samuel Pleasants Parsons House*, for the Oregon Hill Home Improvement Council, 1990



(Figure 96.) Harvie's Pond [also known as the Penitentiary Basin], was shown in an 1865 Levy and Cohen photograph. Several creeks and springs fed Harvie's Pond, including the spring for which Spring Street derived its name. Harvie's Pond was the site of John Messler's canal boat building business and was an important basin for maneuvering the canal boats. The topography required that the south bank of the canal serve as a dam for the pond. (Source: Levy and Cohen photograph, Library Company of Philadelphia)

Another significant association of the canal with the Oregon Hill Historic District was the canal boat works in Harvie's Pond that was operated by John Messler for many years. In the 1870s, the Messler family lived in Oregon Hill's oldest home, the 1817 Jacob House at 610 West Cary Street. The Messlers had a short walk from Cary Street to the Penitentiary Basin where they ran a canal boat building business from the 1850s until the 1880s. His enterprise was photographed by Levy and Cohen in the Basin in April 1865, after the fall of Richmond. The photograph probably captured Messler himself at work building a canal boat.

Half-a-century before the Messler's rented the Jacob House, it was owned in 1821 by Benjamin James Harris, who also owned the Belvidere Estate. Harris with Jaquelin Harvie, the son of John Harvie, and George Winston established the Town of Sydney, and the Jacob House was the first house built in the development.<sup>80</sup>

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<sup>80</sup> Pool, Charles and Ward, Dulaney, *Plainly Significant, The Jacob House; Richmond Journal of History and Architecture*, Vol. II, No. 1, Spring 1995, William Byrd Branch, Association for the Preservation of Virginia Antiquities





**(Figure 97.) The Jacob House, here photographed in 1895, was built in 1817, at 610 West Cary Street. In the 1870s to the Messler family, who had a canal boat building business in Harvie's Pond occupied the dwelling. The Jacob House was owned in 1821 by Benjamin James Harris who was formerly an engineer for the canal. (Source: Robert Willis Collection)**



**(Figure 98.) The restored Jacob House as photographed in 2004 during the Virginia Department of Historic Resources dedication ceremony for historic highway markers for the Jacob House, the Samuel Parsons House, and the John Miller House. The 1817 Jacob House is Oregon Hill's oldest building with important associations with the James River and Kanawha Canal. It is now a contributing building to the Oregon Hill Historic District and the office of the Oregon Hill Home Improvement Council. (Source: OHHIC)**

### **Zoning considerations:**

The property at “Tredegar Green” owned by the City of Richmond and Venture Richmond straddles the James River and Kanawha Canal. South of the canal is zoned M-1 (light industrial), and north of the canal at “Tredegar Green” is zoned R0-3 (residential-office). An amphitheater is not a permitted primary use of the property in the R0-3 zoning. This property above the canal is an historically sensitive area on which Oregon Hill homes were demolished to make way for the Virginia War Memorial. The Oregon Hill Historic District and the Overlook condominiums on Belvidere Street face the proposed amphitheater, and these neighbors purchased their property with the expectation that the existing zoning would prohibit any use of this area that creates loud noise and crowd congestion. If Venture Richmond’s amphitheater at “Tredegar Green” is limited to the property below the canal, there would be no cause for damaging the canal, the volume of the music would be reduced because it would not need to be amplified above the canal, and the amplified music could be re-directed to the east away from the Virginia War Memorial and Oregon Hill.



(Figure 99.) The City of Richmond Zoning Map indicates that the property north of the canal is zoned R0-3 (residential-office). An amphitheater is not a permitted primary use in the R0-3 zoning because of the excessive noise and crowding. The Virginia War Memorial is directly north of the proposed amphitheater, and the Oregon Hill Historic District is across Belvidere Street from the Virginia War Memorial. If the proposed amphitheater is confined to the industrial zoned area below the canal, it would limit damage to the canal and limit adverse noise impact upon the Va. War Memorial and the Oregon Hill Historic District. (Source: Zoning Map, City of Richmond)

## **Plans for rewatering the James River and Kanawha Canal:**

Richmond City Councilman Parker Agelasto submitted a capital budget request in October 2013 for rewatering the canal westward from Tredegar. The water levels and structure of the canal are not just of academic interest because when rewatered the canal must safely hold a huge volume of water so that canal boats can clear the water pipe now in the canal bed.

“The idea of connecting westward found lodgment in the minds of her far-sighted men and remained a cherished idea for many years.”<sup>81</sup> This vision of early Virginians who saw the potential of the canal might also apply to the far-sighted men and women who now envision a remarkable and rare “blueway,” an historic conduit revitalizing the canal westward to Maymont and Boshers’ Dam. Such a vision would be compromised by lowering the tow path to an elevation of 83 feet (which was historically the elevation of water in the canal) and by damaging the structural integrity of the canal by removing half of the tow path of the canal (which at this location was 30 feet wide from 1801.)

The initial goal has been to rewater the James River and Kanawha Canal westward, with a canal boat dock at Maymont, and to eventually connect the canal to the renovated Haxall Canal below Tredegar. So long as the banks of the canal are not damaged, and the tow path is not lowered, rewatering the James River and Kanawha Canal between Tredegar and Maymont will not be a prohibitively expensive proposition. In 1988, the Historic Richmond Foundation commissioned a study on the revitalization of the James River and Kanawha Canal, including a conceptual plan for a canal lock to the east of the Tredegar Iron Works, on the property of the old state Armory.<sup>82</sup>

In 1990, Richmond Renaissance commissioned the engineering firm of Whitman, Requardt and Associates to evaluate the feasibility of rewatering the canal westward from Tredegar. They determined that such an effort was entirely feasible at a cost of about \$3 million (in 1990 dollars). The firm determined that the best location for a canal boat dock near Tredegar was on the very City of Richmond property that is now being considered as the location for an amphitheater. The Whitman, Requardt and Associates estimate included new canal boat docks at Maymont and on what is now the proposed amphitheater site.<sup>83</sup>

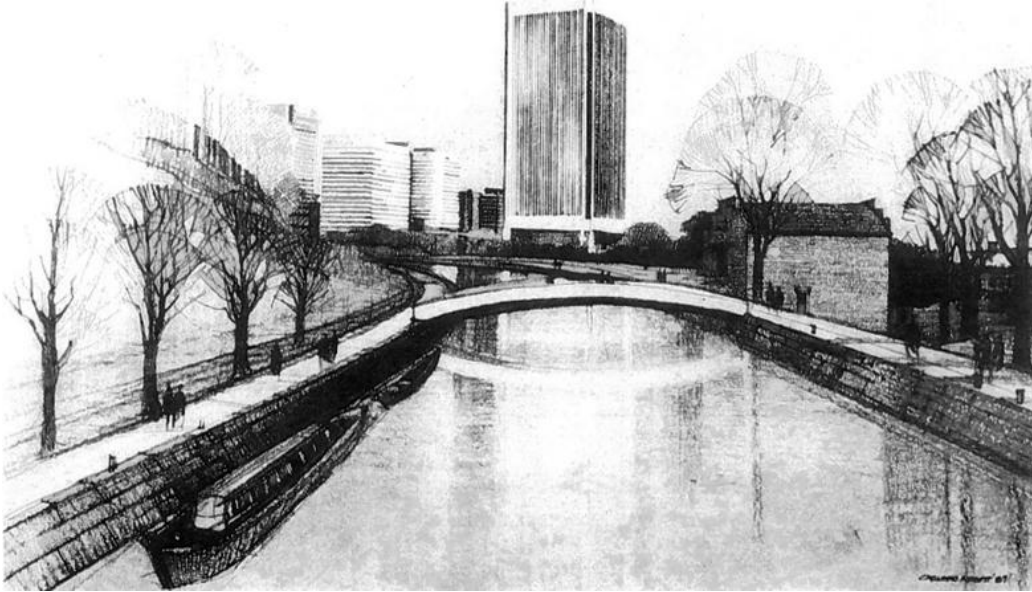
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<sup>81</sup> Dunaway, Wayland, *History of the James River and Kanawha Company*, Columbia University, New York, 1922, page 9.

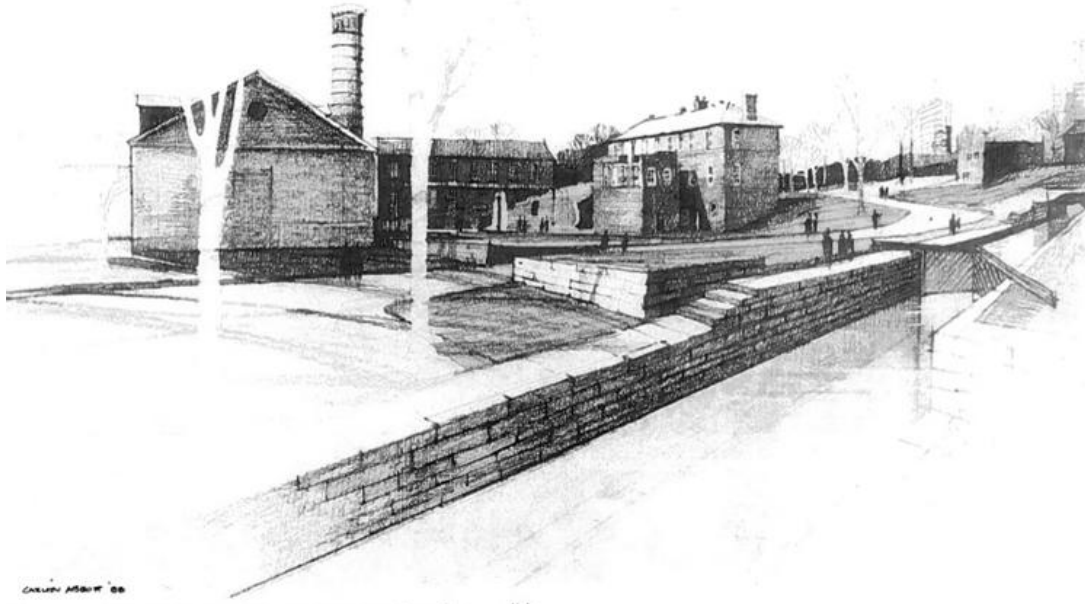
<sup>82</sup> Carlton Abbott & Partners, P.C., *The Richmond Canals*, 1988, Historic Richmond Foundation, Collection of Jack Pearsall.

<sup>83</sup> *James River and Kanawha Canal Feasibility Study*, Whitman, Requardt & Associates Engineers, for Richmond Renaissance, March 1990





(Figure 100.) Revitalization of the James River and Kanawha by the Tredegar Iron Works, near the site of Venture Richmond's proposed amphitheater, is envisioned in this conceptual drawing from a 1988 study commissioned by the Historic Richmond Foundation. (Source: Carlton Abbott & Partners, P.C., *The Richmond Canals*, 1988, Historic Richmond Foundation, Collection of Jack Pearsall)

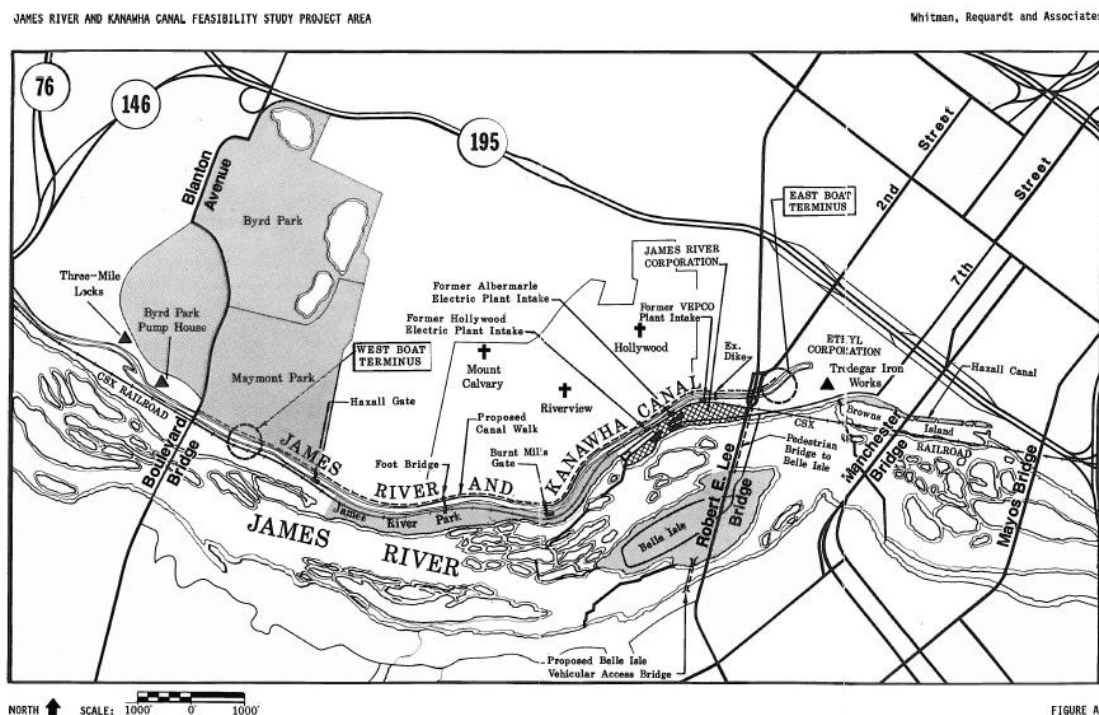


(Figure 101.) Plans for a lock east of the Tredegar Iron Works connecting the renovated Haxall Canal with a re-watered James River and Kanawha Canal were envisioned in this conceptual drawing in the 1988 canal study commissioned by the Historic Richmond Foundation. In 1841 the Board of Public Works produced a map with a plan for a lock on the James River and Kanawha Canal in a similar location east of Tredegar. (Source: Carlton Abbott & Partners, P.C., *The Richmond Canals*, 1988, Historic Richmond Foundation, Collection of Jack Pearsall)

The goal of rewatering and protecting the canal on the site of Venture Richmond's property at "Tredegar Green" is reflected in the wording of the 2012 Richmond Riverfront Plan:

**All public improvements to and investments in Tredegar Green should support the goal of westward (or appropriate) canal restoration, as the canal could once again become a functioning connective conduit, a historic blueway.<sup>84</sup>**

Lowering the tow path elevation to 83 feet above sea level, as proposed by Venture Richmond, would certainly not support the goal of westward canal restoration. The water elevation of the canal was historically at 83 feet from 1841 to 1936 and the tow path needs to be about two feet above the water level so that the water will not overflow the banks of the canal in times of heavy rain and flooding. The water elevation in the canal needs to be at an elevation of 83 feet so that canal boats can clear the water transmission pipe, the top of which is at an elevation of 80.5 feet according to the City of Richmond Department of Public Utilities. Once restored, the rewatered canal will again be one of Richmond's most scenic features. One day, plays may be presented from canal boats in the canal (such as the "Sarah Jane" play performed in 1880s Lynchburg, set on board a canal boat in a theater). The canal has enormous creative potential.



(Figure 102.) The 1990 Whitman, Reardon & Assoc. engineering study determined that it was quite feasible to rewater the James River and Kanawha Canal. They recommended a canal boat dock on the City of Richmond property that is now included as part of the proposed amphitheater site. (Source: City of Richmond)

<sup>84</sup> Richmond Riverfront Plan, page 28, 2012, City of Richmond, Virginia

### Alternatives to damaging the canal:

This may well be the first time in the nation that an organization has actually proposed removing a portion of a structure on the National Register of Historic Places simply because it might block the view of someone from seeing a rock concert. Fortunately, there are prudent and feasible alternatives to damaging the James River and Kanawha Canal and the Tredegar Historic Site for such an insignificant reason.

#### Alternative 1:

Venture Richmond proposes an amphitheater at “Tredegar Green,” bisected by the James River and Kanawha Canal, for the largest outdoor stage in Richmond to accommodate 10,000 spectators. **A far better location for Venture Richmond’s largest stage is the nearby Brown’s Island outdoor stage venue, which at 5.8 acres is over an acre larger than the “Tredegar Green” site.** Brown’s Island is owned by the City of Richmond, and Venture Richmond already leases Brown’s Island, holding Folk Festival and other outdoor music events at this venue.



(Figure 103.) Brown’s Island shown during the Folk Festival with two white tented stages. At 5.8 acres, the Brown’s Island site, operated by Venture Richmond, would be the logical venue for Venture Richmond’s largest stage. Brown’s Island has the infrastructure in place to accommodate a crowd of 10,000 spectators. The two tented stages, shown on Brown’s Island in this photograph during the Folk Festival, could be accommodated above and below the canal at “Tredegar Green” without damaging the canal and without blasting the Virginia War Memorial and the Oregon Hill Historic District with loud noise. (Source: Google Maps)



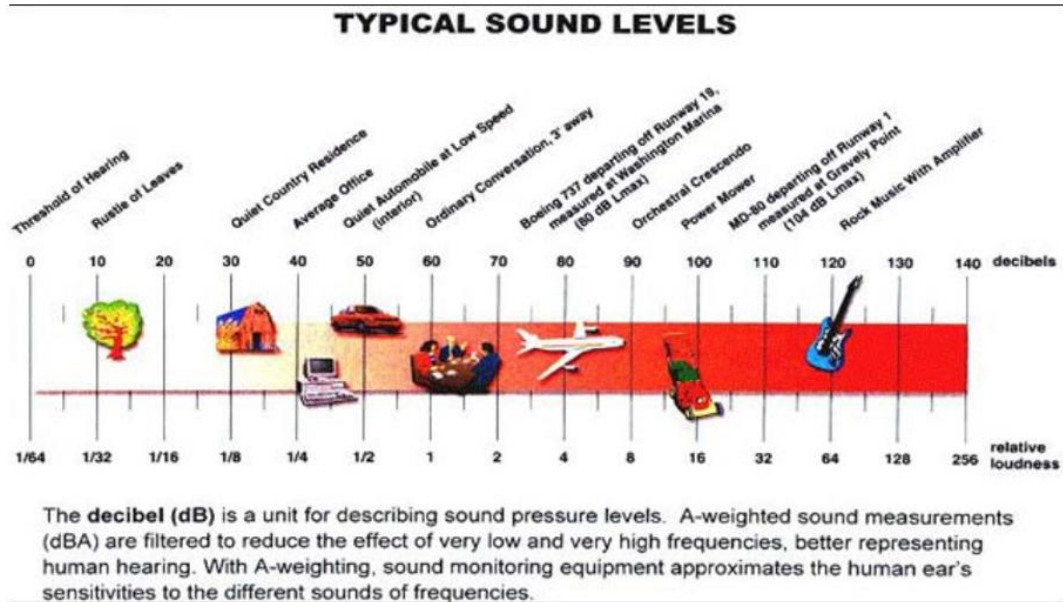
Brown's Island has the infrastructure in place in terms of lighting, pathways, and walk-bridges for crowd control, and has easy access to many parking facilities. The stage on Brown's Island is about three times the distance as the stage at "Tredegar Green" from the Virginia War Memorial and the Oregon Hill neighborhood, so the loud music on Brown's Island would have less adverse impact upon these historically sensitive locations. The "Tredegar Green" site could accommodate (above and below the canal) the two tented stages, which have in the past been placed on Brown's Island during the Folk Festival, without any damage to the canal.

Venture Richmond plans to eventually lease its largest stage with no limit on the number of performances annually. According to Venture Richmond Director Jack Berry, staging big events for thousands of people carry big risks.<sup>85</sup> These risks are minimized by planning performances for Richmond's largest outdoor stage on a site like Brown's Island, where crowd control can be maximized and where there is infrastructure to support a crowd of 10,000. **The impact of the crowds, parking, and loud amplified music upon the Virginia War Memorial and the Oregon Hill Historic District would be minimized by putting the largest stage on Brown's Island.**

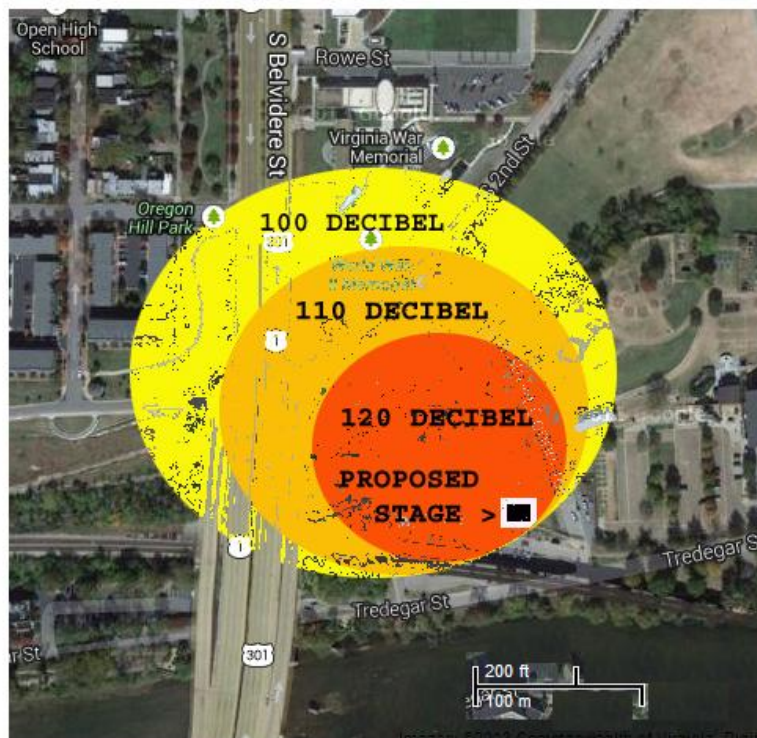


(Figure 104.) This photograph shows a crowd of about 10,000 spectators on Brown's Island, which is operated by Venture Richmond. Venture Richmond anticipates a crowd of 10,000 spectators at the proposed "Tredegar Green" amphitheater bisected by the James River and Kanawha Canal. Brown's Island is a more suitable venue to accommodate a crowd of this size because of its lighting, pathways, walk-bridges for crowd control, and access to parking facilities. Brown's Island is over an acre larger than "Tredegar Green," and it is farther from the Virginia War Memorial and the Oregon Hill Historic District so that the loud noise from the rock concerts would have less of an adverse impact. Foot traffic of 10,000 people should be avoided on the historically sensitive canal banks, just as foot traffic is avoided on Civil War earthworks. (Source: BrownsIsland.com)

<sup>85</sup> *Richmond Times Dispatch*, Section A, page 10, August 27, 2013.



(Figure 105.) Amplified rock music typically reaches a 120 decibels sound level. This would be an adverse impact on the Va. War Memorial and the Oregon Hill Historic District. (Source: Washington Metro Airport Authority)



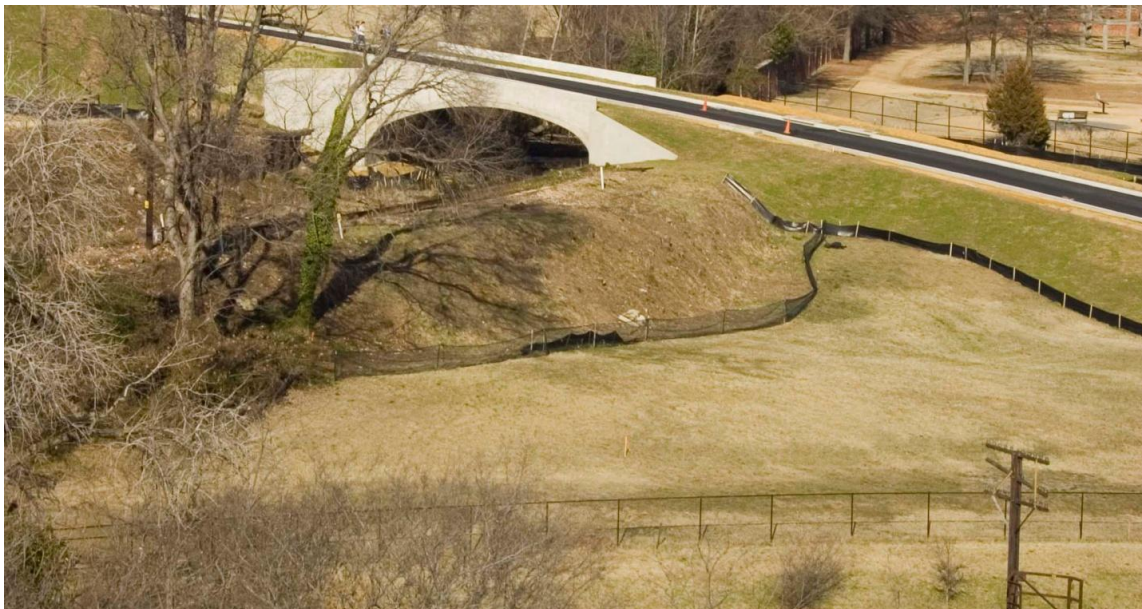
(Figure 106.) This chart illustrates the projected noise levels from a rock concert with 120 decibels at “Tredegar Green.” The noise levels would be about 100 decibels at the Virginia War Memorial and the Oregon Hill Historic District. The amplified noise from the stage on Brown’s Island would have far less negative impact on the Virginia War Memorial and the Oregon Hill Historic District because of the greater distance. (Source: OHHIC)



## Alternative 2:

**By confining Venture Richmond’s proposed amphitheater to the property below the canal at “Tredegar Green,” the negative impact to the canal and the historic setting could be limited.**

There would be no cause to cut or lower the canal tow path embankment. This reasonable alternative was endorsed by the editorial staff of the Richmond Times Dispatch, “The alternative of confining the amphitheater to space below the canal has considerable appeal, and we endorse it. It is our choice.”<sup>86</sup> The Oregon Hill Neighborhood Association also approved of the compromise of confining the amphitheater to the land below the canal at the October 2013 meeting of the neighborhood civic group.



**(Figure 107.) The Oregon Hill Neighborhood Association and the Richmond Times Dispatch editorial staff have endorsed the compromise of confining Venture Richmond’s proposed amphitheater to the land below the canal. This would reduce damage to the canal and make it possible to redirect the amplified music away from the Virginia War Memorial and the Oregon Hill Historic District, which are above the canal. (Source: OHHIC)**

About two-thirds of the “Tredegar Green” property is below the canal, so a sizable amphitheater could still be provided by limiting the venue to that area. Confining the amphitheater to the land below the canal would respect the existing zoning of the land; an amphitheater is an approved use in the light-industrial (M-1) city zoning below the canal, but an amphitheater is not a permitted primary use under the residential-office (RO-3) city zoning for the land above the canal.<sup>87</sup>

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<sup>86</sup> Editorial Page, *Richmond Times Dispatch*, October 13, 2013

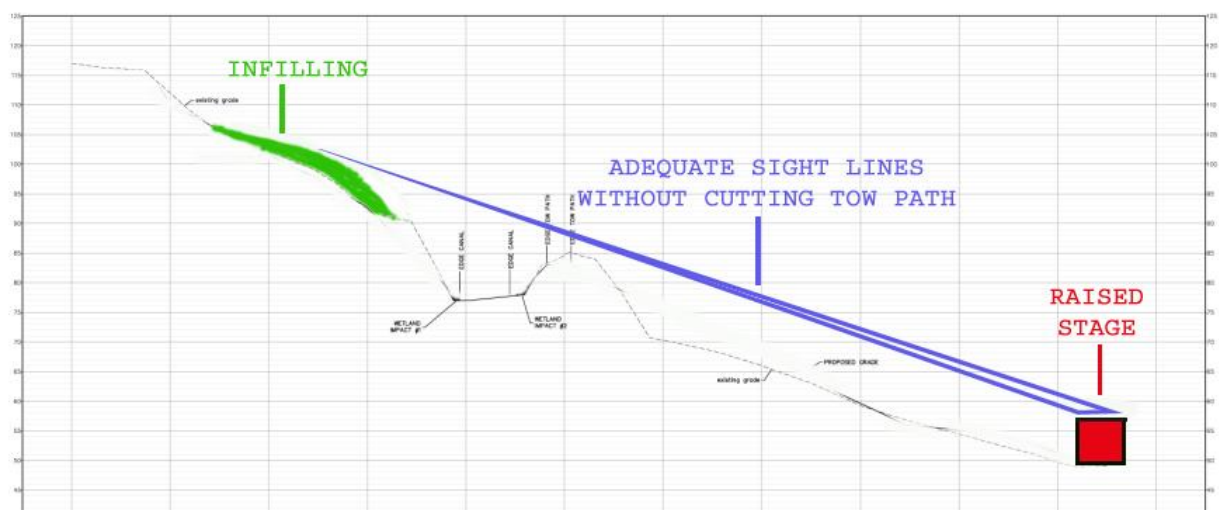
<sup>87</sup> Zoning map, Department of Planning, City of Richmond



If the amphitheater does not include the property above the canal, there would be no cause to damage the canal tow path embankment and no need for the noise from the stage to be aimed above the canal. The amplified sound could be redirected away from the Virginia War Memorial and the Oregon Hill Historic District. Since Venture Richmond plans to eventually lease the venue for outdoor rock concerts, it is imperative that the noise impact on the Virginia War Memorial and the Oregon Hill neighbors be limited.

### Alternative 3:

In this very historically sensitive setting, including the James River and Kanawha Canal and the Tredegar Historic Site, Venture Richmond could obtain adequate sight lines by using infill above the canal and by raising the stage as an alternative to cutting and lowering the canal tow path embankment.

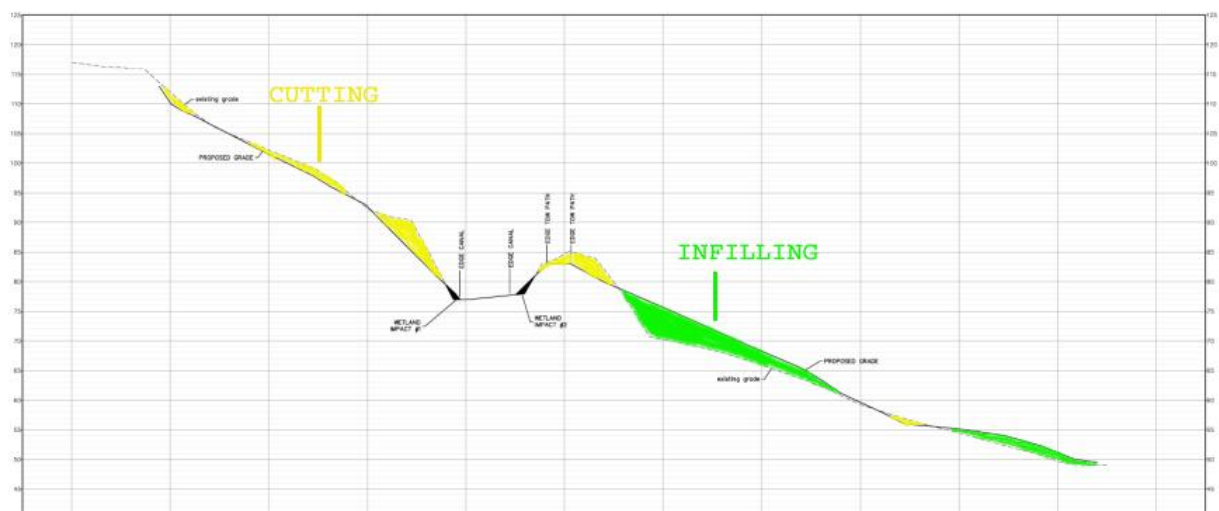


(Figure 108.) Adequate sight lines can be created by raising the amphitheater stage and by using infill above the canal instead of cutting and lowering the canal tow path embankment. (Source: OHHC illustration on City of Richmond topography map of the amphitheater site)

The use of infill above the canal would be a preferable means of improving site lines than by irreparably lowering and cutting away half of the tow path embankment. Other creative ways of improving sight lines without damage to the canal have not been explored, such as raising the stage or limiting spectators from standing on the tow path during a performance. There are reversible and sensitive alternatives for improving sight lines for spectators without compromising the integrity of the canal by irreparably cutting and removing a significant portion of the historic tow path embankment. Unfortunately, instead of infilling above the canal as an alternative means of improving sight lines, Venture Richmond's intractable landscape plan indicates that they ill-advisedly proposed infilling below the canal (where infill is not needed). The character of the canal tow path embankment would be completely obscured.

According to Richmond City Councilman Parker Agelasto, the Virginia War Memorial, which is across 2<sup>nd</sup> Street from the proposed Venture Richmond amphitheater, may soon undertake a building project that could provide roughly 1,600 truckloads of surplus fill dirt, which could be used to raise the area above the canal to ensure adequate sight lines without cutting the canal.

Wrote Councilman Agelasto, “Likewise, discussions are underway that would provide significant landfill for grading of the Tredegar Green site such that the canal embankments would not be disturbed. This dirt would be coming from an area on the Virginia War Memorial site and would be a win-win for them, Venture Richmond, and canal preservationists. This grading would benefit from roughly 1,600 truckloads of additional, locally-sourced, dirt and could be considered a material change to the grading plan as proposed.”<sup>88</sup>



(Figure 109.) Venture Richmond’s landscape plan for “Tredegar Green,” as presented to the City Planning Commission in January 2014. *(Venture Richmond’s landscape plan is poorly conceived with a massive amount of unneeded infill proposed for the area below the canal, unnecessarily obscuring the topography of the Tredegar Historic Site and the canal tow path features. If infill was used above the canal, the sight lines could be improved without cutting or lowering the canal tow path.)* (Source: Venture Richmond, with color added by OHHIC)

Venture Richmond’s landscape plan shows cutting above the canal and cutting away half of the tow path, but proposes using massive fill below the canal to create an artificially smooth slope, removing the character of the landmark setting. **Venture Richmond’s landscape plan is backwards from a historically sensitive preservation plan that would protect the character and structure of the canal. If infill is used above the canal instead of below the canal, there would be no need to cut or lower the tow path embankment to improve sight lines, and the Tredegar Historic Site and the canal would retain their landmark topography and character.**

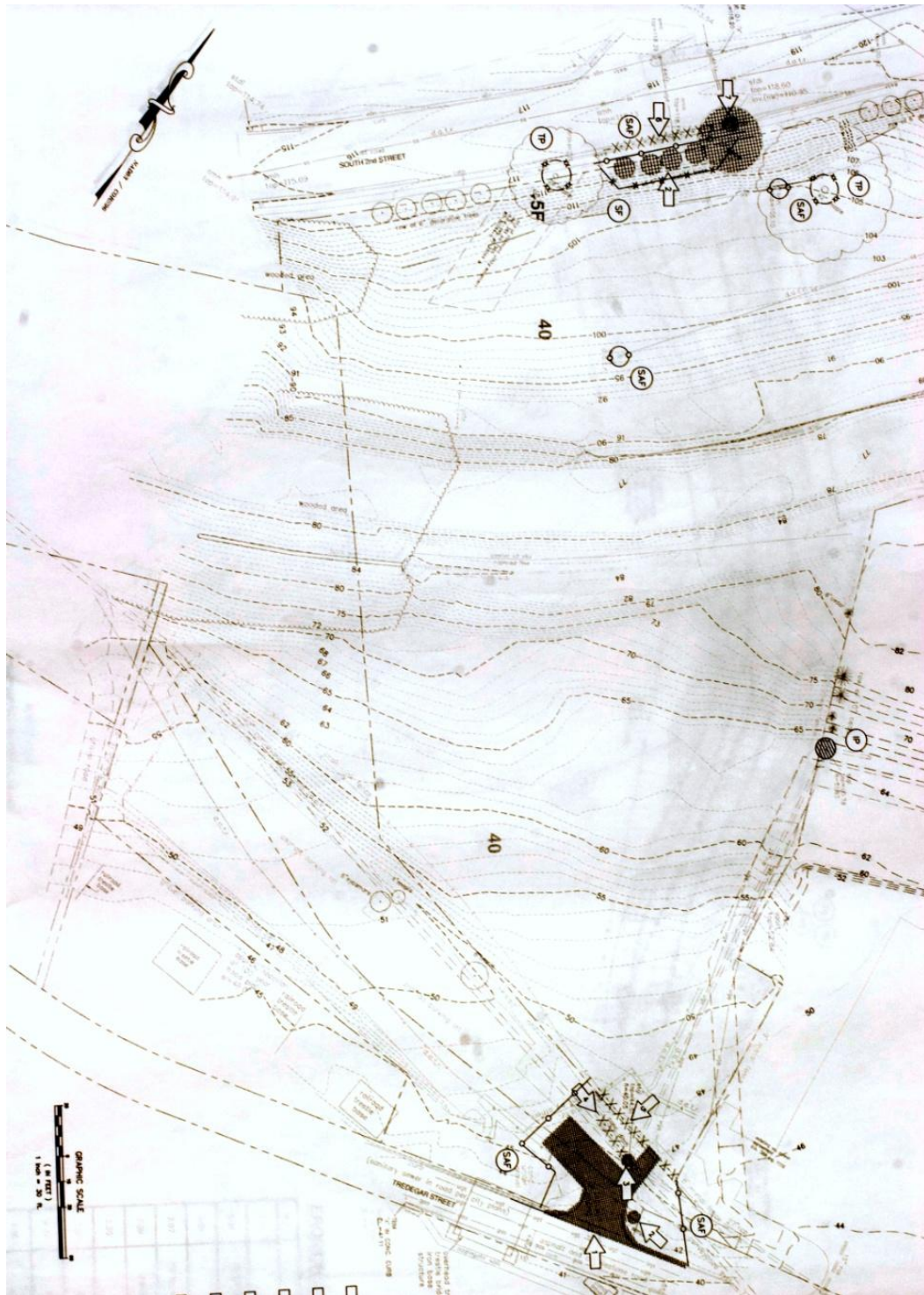
<sup>88</sup> Correspondence from City Councilman Parker Agelasto to Scott Burger, January 9, 2014, posted on OregonHill.net

While the alternative of using fill above the canal and raising the stage would improve sight lines without cause for damage to the canal tow path embankment, the negative impacts of the noise, parking and congestion on the Virginia War Memorial and the Oregon Hill Historic District would still need to be carefully addressed. It should be noted that Venture Richmond does not propose providing any additional parking for the expected 10,000 spectators, nor has Venture Richmond proposed any limit on the decibel levels of the performances, nor has Venture Richmond agreed to limit the number of events annually.



**(Figure 110.) The Folk Festival stage is seen at top center in this photo that was taken from the area above the canal at “Tredegar Green.” With a moderate amount of infill above the canal and by raising the stage, the proposed amphitheater would have adequate sight lines without cutting or lowering the canal tow path embankment. (Source: Venture Richmond)**





(Figure 111.) This is an accurate and detailed topography map of the site of the proposed amphitheater. The north bank of the canal, at 90 feet elevation, is already about 6 feet higher than the tow path on the south bank of the canal. Raising the stage along with a moderate amount of infill between elevations 90 to 95 feet on the north bank of the canal would adequately improve sight lines without cutting or lowering the tow path embankment. (Source: 2<sup>nd</sup> Street Connector Erosion Control Plan, Draper Aden Associates, City of Richmond, 2012)

## **Summary:**

The James River and Kanawha Canal was the most significant public improvement in the Commonwealth of Virginia prior to the Civil War. The section of the canal below Oregon Hill, at the falls of the James River, was one of the first sections of the canal completed after the James River Company was founded in 1785, when George Washington served as president of the company. The canal transformed Virginia's transportation, and it provided water power for many mills and industries, including the Tredegar Iron Works. The canal is of great state and national historical significance with important associations to the adjacent Oregon Hill Historic District.

The canal was a carefully engineered structure with impermeable "puddled" clay walls. There is evidence that the canal section below Oregon Hill has an internal supporting wall and remnants of millraces. We are fortunate that the canal has survived in an authentic and structurally sound condition, but the impermeable canal walls, internal supporting wall, and remnants of millraces would be damaged if half of the tow path embankment is cut, as proposed by Venture Richmond.

It is incredibly insensitive for Venture Richmond to propose lowering and cutting half of the tow path of George Washington's remarkably engineered canal because the historic canal might be in the way of spectators' view of a rock concert. Any review of the proposed amphitheater must weigh the great rarity and national importance of George Washington's historic 18<sup>th</sup> century canal with that of yet another common and ubiquitous outdoor performance venue. Respect should be shown for our Virginia heritage and for the sacrifice of the immigrant and slave laborers who built the canal, many of whom died under the grueling conditions of the effort.

Careful documentation, including deed research, detailed surveys, period maps, and annual canal reports, confirms that the authentic canal has survived at this location with a great deal of integrity. The James River and Kanawha Canal at the location of Venture Richmond's proposed amphitheater had the following dimensions during the canal's primary period of significance:

- **30 foot wide towpath dating from 1801, as documented by June 26, 1801 Harvie deed and by 1848 Harvie plat**
- **60 foot canal width dating from 1838, as documented in annual reports of the James River and Kanawha Company and Tredegar Papers.**
- **83 foot water elevation from 1841 through 1936, as documented in Board of Public Works maps and in detailed Tredegar and C&O Railroad surveys**
- **2 foot elevation of the tow path above the water level in the canal, as documented in Civil War era photographs of the canal near Hollywood Cemetery**

If the tow path is lowered to an 83 foot elevation, as proposed by Venture Richmond, the canal will not safely hold the historical water level of 83 feet elevation at this location. If the height of the tow path is lowered it may be impossible to restore the canal for canal boat travel because the canal will not hold water at the elevation of 83 feet that will be necessary for canal boats to clear the water transmission pipe (the top of which is at 80.5 feet elevation) that now crisscrosses the bed of the canal. If over half of the tow path is removed, as proposed by Venture Richmond, it will jeopardize the integrity and character of the structure that is carefully engineered to be safe and leak-proof with impermeable “puddled” clay.

The tow path at this location was 30 feet wide from 1801 when it was built as a substantial embankment to hold back the water from Harvie’s Pond, and when John Harvie reserved for himself and his heirs by deed a 30 foot wide public road by the south edge of the water in the canal. Venture Richmond’s proposal to slice off half of the tow path would alter the character and structural integrity of the canal.

Venture Richmond is proposing to narrow the canal to 50 feet in width when the canal at this location was never 50 feet wide. Careful documentation indicates that the canal was widened at this site from 40 to 60 feet in 1838.

The city is committed to preserving the canal and in 2012 devoted \$385,000 to protect the canal when building the 2<sup>nd</sup> Street Connector. In October 2013, City Councilman Parker Agelasto submitted a capital budget request to fund the rewatering of the canal. Lowering the tow path or compromising the structural integrity of the canal embankment will damage the authentic integrity of the historic structure and jeopardize the plan to restore the canal.

Venture Richmond’s property below the canal is included in the Tredegar Historic Site because of the Tredegar buildings that were formerly on this property. Archaeological resources include a coal house, workers housing, a possible toll house, mills and water races and foundations of the Tredegar buildings. The site should not indiscriminately be bulldozed to make a smooth slope, destroying significant archaeological resources and the characteristic topography of the Tredegar Historic Site. The Tredegar Branch railroad tracks on the tow path that connected Tredegar with the iron works on Belle Isle are a significant historic feature of the canal and Tredegar Historic Site and should not be removed from the tow path.

Prudent and reasonable alternatives exist because Venture Richmond already leases the nearby venue on Brown’s Island that is over an acre larger than Venture Richmond’s “Tredegar Green” property. The Brown’s Island site has the infrastructure in place to accommodate an outdoor venue for 10,000 spectators without damage to the canal or archaeological resources.



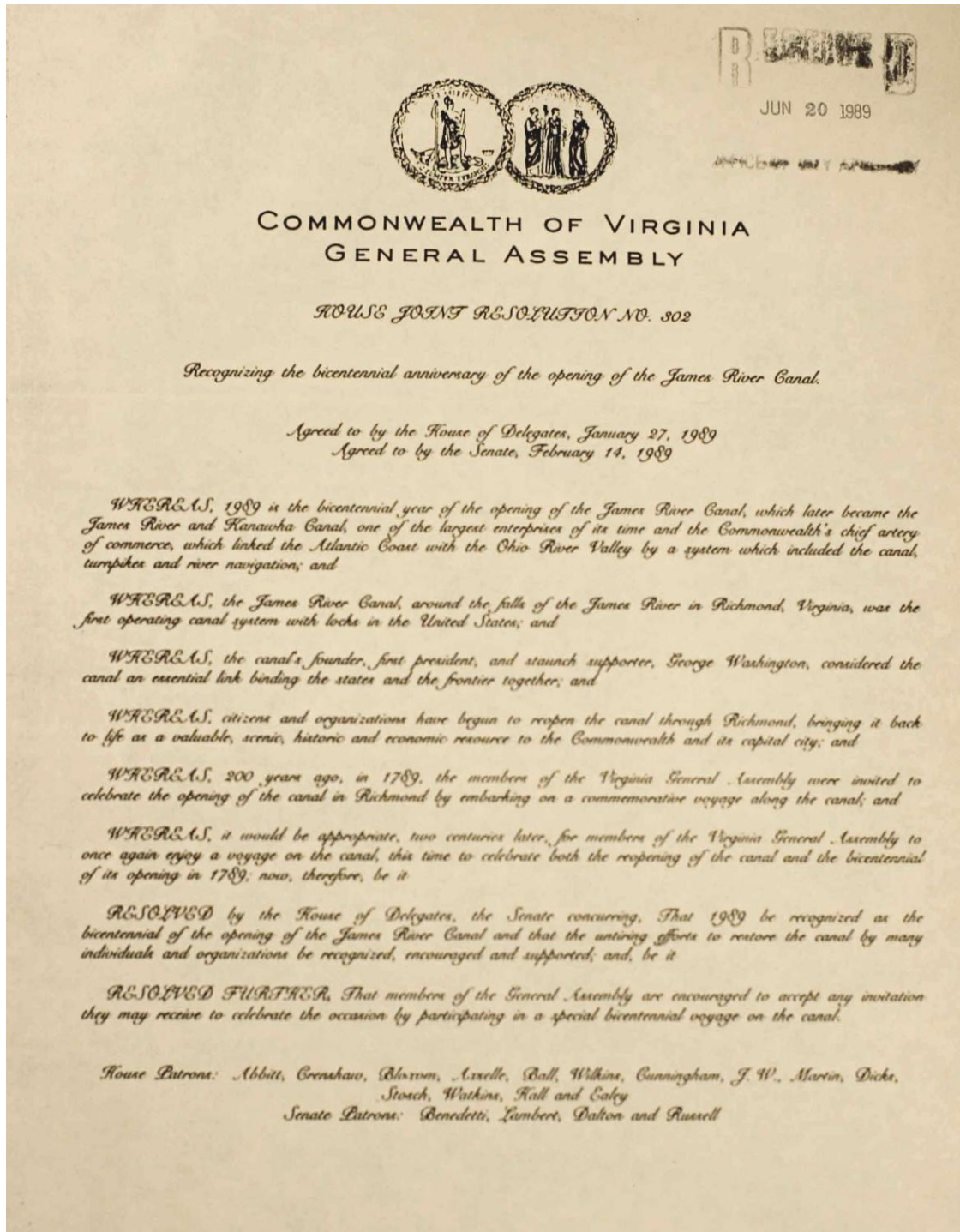
Placing the city's largest and loudest venue for 10,000 spectators directly below the Va. War Memorial, a place of quiet meditation would be extremely poor planning. Prudently installing Venture Richmond's largest stage on Brown's Island would avoid the negative impact of excessive noise and crowds on the Va. War Memorial and the Oregon Hill Historic District.

The compromise of confining the amphitheater to the area below the canal has merit and was endorsed by the Oregon Hill Neighborhood Association and the Richmond Times Dispatch editorial board. But, if the area above the canal is included in the amphitheater, sight lines should be improved by raising the stage and by using infill above the canal rather than cutting the historic tow path embankment.

Because of its national importance, the James River and Kanawha Canal should not be altered, cut, lowered or filled for trivial reasons, such as for improving sight lines or making it easier to cut the grass. It is vital that George Washington's 18<sup>th</sup> century canal be afforded the respect that it deserves so that this rare historic resource one day can be a restored "blueway," a treasure for future generations of citizens of the Commonwealth.



**Figure 112.)** George Washington's canal has survived intact for 225 years and is a rare historic treasure that should be preserved for future generations. It can be rewatered to Maymont and points west so long as the carefully engineered tow path embankment is not lowered or cut. (Source: OHHIC)



(Figure 113.) In 1989 a joint Virginia House and Senate resolution honored the bicentennial anniversary of the opening of the James River Canal, recognizing that the “James River Canal, around the falls of the James River in Richmond, Virginia was the first operating canal system with locks in the United States,” and recognizing the canal, “... as a valuable, scenic, historic and economic resource to the Commonwealth and its capital city.” The James River and Kanawha Canal has survived and been treasured as a remarkable feature for a dozen generations. Will we be the generation that jeopardizes the canal, allowing the tow path embankment of this rare, historic structure to be cut because it blocks the view of a rock band? (Source: City of Richmond)