GOVERNMENT OF THE DISTRICT OF COLUMBIA
HISTORIC PRESERVATION OFFICE

HISTORIC PRESERVATION REVIEW BOARD
APPLICATION FOR HISTORIC LANDMARK OR HISTORIC DISTRICT DESIGNATION

New Designation __X__
Amendment of a previous designation _____
Please summarize any amendment(s) _____

Property name Control Point (CP) Virginia Tower
*If any part of the **interior** is being nominated, it must be specifically identified and described in the narrative statements.*

Address Southeast Corner of 2nd Street SW and Virginia Avenue SW, Washington, DC

Square and lot number(s) Adjacent to 0582 0856 (on north side)

Affected Advisory Neighborhood Commission ANC 6D

Date of construction 1904-1906 Date of major alteration(s) 1930s

Architect(s) Unknown Architectural style(s) Late Victorian Vernacular

Original use Railroad Interlocking Control Tower Present use Railroad Infrastructure

Property owner CSX Transportation, Inc.

Legal address of property owner 500 Water Street, Jacksonville, Florida 32202

NAME OF APPLICANT(S) CSX Transportation, Inc.

***If the applicant is an organization**, it must submit evidence that among its purposes is the promotion of historic preservation in the District of Columbia. A copy of its charter, articles of incorporation, or by-laws, setting forth such purpose, will satisfy this requirement.*

Address/Telephone of applicant(s) 500 Water Street J275, Jacksonville, Florida 32202 (904) 359-1499

Name and title of authorized representative Richard K. Nath, Manager Environmental Development & Construction

Signature of representative Richard K. Nath Date January 19, 2016

Name and telephone of author of application Susan L. Bupp (202) 775-3481

Date received _____
H.P.O. staff _____

GOVERNMENT OF THE DISTRICT OF COLUMBIA
HISTORIC PRESERVATION OFFICE

HISTORIC PRESERVATION REVIEW BOARD
APPLICATION FOR HISTORIC LANDMARK OR HISTORIC DISTRICT DESIGNATION

New Designation __X__
Amendment of a previous designation _____
Please summarize any amendment(s) _____

Property name _Control Point (CP) Virginia Tower_____
*If any part of the **interior** is being nominated, it must be specifically identified and described in the narrative statements.*

Address __Southeast Corner of 2nd Street SW and Virginia Avenue SW, Washington, DC_____

Square and lot number(s) __0582 0856_____

Affected Advisory Neighborhood Commission _____ANC 6D_____

Date of construction __1904-1906____ Date of major alteration(s) __1930s__ __

Architect(s) __Unknown_____ Architectural style(s) _____

Original use _Railroad Interlocking Control Tower_ Present use ___Railroad Infrastructure

Property owner _CSX Transportation, Inc._____

Legal address of property owner _500 Water Street, Jacksonville, Florida 32202 _____

NAME OF APPLICANT(S) _CSX Transportation, Inc._____

***If the applicant is an organization**, it must submit evidence that among its purposes is the promotion of historic preservation in the District of Columbia. A copy of its charter, articles of incorporation, or by-laws, setting forth such purpose, will satisfy this requirement.*

Address/Telephone of applicant(s) _500 Water Street J275, Jacksonville, Florida 32202__(904) 359-2228

Name and title of authorized representative Keith Brinker, Manager Environmental Development & Construction

Signature of representative _____ Date _____

Name and telephone of author of application _Susan L. Bupp (202) 775-3481_____

Date received _____
H.P.O. staff _____

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form.* If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions.

1. Name of Property

Historic name: Control Point (CP) Virginia Tower
Other names/site number: Virginia Interlocking Control Tower_
Name of related multiple property listing**:** N/A

(Enter "N/A" if property is not part of a multiple property listing

2. Location

Street & number: Southeast Corner of 2nd Street SW and Virginia Avenue SW
City or town: Washington State: D.C. County: SW
Not For Publication: ☐ Vicinity: ☐

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby certify that this ___ nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property ___ meets ___ does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

___national ___statewide _X__local

Applicable National Register Criteria:

___A ___B _X__C ___D

Signature of certifying official/Title: **Date**

State or Federal agency/bureau or Tribal Government

In my opinion, the property ___ meets ___ does not meet the National Register criteria.

Signature of commenting official: **Date**

Title : **State or Federal agency/bureau or Tribal Government**

4. National Park Service Certification

I hereby certify that this property is:

___ entered in the National Register

___ determined eligible for the National Register

___ determined not eligible for the National Register

___ removed from the National Register

___ other (explain:) _____

_____

Signature of the Keeper Date of Action

5. Classification

Ownership of Property

(Check as many boxes as apply.)

Private:	[X]
Public – Local	[ ]
Public – State	[ ]
Public – Federal	[ ]

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

Building(s)	☐
District	☐
Site	☐
Structure	X
Object	☐

Number of Resources within Property
(Do not include previously listed resources in the count)

Contributing	Noncontributing	
		buildings
		sites
1		structures
		objects
1	0	total

Number of contributing resources previously listed in the National Register 0

6. Function or Use
Historic Functions
(Enter categories from instructions.)
Transportation/ Rail-Related

Current Functions
(Enter categories from instructions.)
Transportation/Rail-Related

7. Description

Architectural Classification
(Enter categories from instructions.)
Late Victorian

Materials: (enter categories from instructions.)
Principal exterior materials of the property:
Foundation- Concrete/Steel
Walls- Brick
Roof- Asphalt Shingle

Narrative Description
(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources if applicable. Begin with **a summary paragraph** that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

Summary Paragraph

The CP Virginia Tower is a two–story, Late Victorian, red brick, railroad interlocking control tower. The facility is located within the CSX right-of-way on the north side of the CSX railroad tracks, on the southeast corner of 2nd Street SW and Virginia Avenue SW in Washington, DC. The facility still serves as a vital portion of the railroad infrastructure. CP Virginia Tower was constructed between 1904 and 1906 along with construction of the First Avenue Tunnel (running north-south from Union Station) and the citywide effort to eliminate at-grade railroad crossings with city streets. Distinctive architectural features include a water table of two rows of red concave plinth brick separating the basement and first floor; red brick laid in common bond with recessed header rows on the first floor exterior; a flared metal or stone band course separating the first floor and the second floor on the south elevation and a discontinuous stone band course separating the floors on the east and west elevations; red brick laid in common bond with no recessed elements on the second floor exterior; metal-wrapped fascia, soffit, and cornice; two six-over-two double-hung windows, approximately 40” by 84”, with limestone jack arch, keystone, and sill on the first floor; a four-panel bay window with metal lintels, casings, and sills; four 1/3 over 2/3 double hung windows on the second floor (all approximately 40” by 84”); and a pyramidal roof. The structure exhibits minor deterioration, primarily identified on the second floor where water infiltrates through an opening in the roof and in several locations where exposure to the elements results from broken windows. The building has exterior paint over bricks and window lintels (to cover graffiti) as well as dented or deteriorated metal architectural features (metal flashing under the roof line and metal trim around the bay window and extending on the east and west sides of the building).

Narrative Description

See Attached Continuation Sheet

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8. Statement of Significance

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

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

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

- [ ] A. Owned by a religious institution or used for religious purposes
- [ ] B. Removed from its original location
- [ ] C. A birthplace or grave
- [ ] D. A cemetery
- [ ] E. A reconstructed building, object, or structure
- [ ] F. A commemorative property
- [ ] G. Less than 50 years old or achieving significance within the past 50 years

CP Virginia Tower SW, Washington, D.C.
Name of Property County and State

Areas of Significance
(Enter categories from instructions.)
Architecture

Period of Significance
1904-late 1930s

Significant Dates
1904-1906

Significant Person
(Complete only if Criterion B is marked above.)

Cultural Affiliation

Architect/Builder

Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

CP Virginia Tower represents a very specific vernacular architectural style created for railroad interlocking technology in the early 20th century, and it is one of two interlocking towers still extant in Washington, DC. The CP Virginia Tower is a two–story, Late Victorian, red brick, railroad interlocking control tower constructed between 1904 and 1906. It retains its integrity of location, design, setting, materials, and workmanship; while it lacks integrity of feeling and association due to technological advances in the control of railroad interlocking that have rendered the tower obsolete. CP Virginia Tower is considered eligible for listing in the NRHP under Criterion C and is significant at the local level.

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

See attached Continuation Sheet

9. Major Bibliographical References

Bibliography (Cite the books, articles, and other sources used in preparing this form.)

Baer, Christopher T.
2004 PRR Chronology, 1934. Pennsylvania Technical and Historical Society. Available on line at: http://www.prrths.com/Hagley/PRR1934%20Aug%2004.wd.pdf. Accessed February 2, 2011.

2005a PRR Chronology, 1872. Pennsylvania Technical and Historical Society. Available on line at: http://prrths.com/Hagley/PRR1872%20Feb%2005.pdf. Accessed February 2, 2011.

2005b PRR Chronology, 1902. Pennsylvania Technical and Historical Society. Available on line at: http://www.prrths.com/Hagley/PRR1902%20Mar%2005.pdf. Accessed February 8, 2011.

Burgess, George and Miles Kennedy
1949 Centennial History of the Pennsylvania Railroad Company, 1846-1946, Prepared by the Pennsylvania Railroad Co, Philadelphia.

Hoosier Valley Railroad Museum, Inc.
2010 *Rebuild Grasselli Tower: A Preservation Effort of the Hoosier Valley Railroad Museum*. Available on line at: http://www.grassellitower.com/towers.htm. Accessed December 9, 2014.

John Bowie Associates
2011 Interlocking Towers on Amtrak's Right-of-Way in Pennsylvania: A Historic Architectural and Industrial Examination and Determination of Eligibility for Listing into the National Register of Historic Places of 19 Extant Towers along the former Pennsylvania Railroad between Morrisville and Marcus Hook (the Northeast Corridor) and between Philadelphia and Harrisburg (the Keystone Corridor). Prepared for the National Railroad Passenger Corporation (Amtrak), Philadelphia, Pennsylvania. Prepared by John Bowie Associates, Wallingford, Pennsylvania.

Roberts, Charles S. and David W. Messer
2003 Triumph VI, Philadelphia, Columbia, Harrisburg to Baltimore and Washington, DC, 1827-2003. Barnard, Roberts and Co., Inc. Baltimore, Maryland. PP 329-371.

Schotter, H.W.
1927 The Growth and Development of the Pennsylvania Railroad Company: A Review of the Charter and Annual Reports of the Pennsylvania Railroad Company 1846 to 1926, Inclusive. Allen, Lane & Scott, Philadelphia, Pennsylvania.

The New York Times
1903 Tunnel under the Capitol: Permit Granted in Washington to the Pennsylvania Railroad, but it must use Electric Power. Published September 10, 1903. Available on line at: http://query.nytimes.com/mem/archive-free/pdf?_r=1&res=9404EFD61339E333A25753C1A96F9C946297D6CF&oref=slogin Accessed January 23, 2015.

Wright, William
2006 *History of Union Station*. Available on line at: http://www.washingtonunionstation.com/history.html#1. Accessed January 23, 2015.

Previous documentation on file (NPS):

____ preliminary determination of individual listing (36 CFR 67) has been requested
____ previously listed in the National Register
____previously determined eligible by the National Register
____designated a National Historic Landmark
____ recorded by Historic American Buildings Survey #_____
____recorded by Historic American Engineering Record # _____
____ recorded by Historic American Landscape Survey # _____

Primary location of additional data:

____ State Historic Preservation Office
____ Other State agency
____ Federal agency
____ Local government
____ University
____ Other
Name of repository: _____

Historic Resources Survey Number (if assigned): _____

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10. Geographical Data

Acreage of Property ____0.007 (305.25 square feet)_____

Use either the UTM system or latitude/longitude coordinates

Latitude/Longitude Coordinates (decimal degrees)
Datum if other than WGS84:
(enter coordinates to 6 decimal places)
1. Latitude: 38°53'00.77"N Longitude: 77°00'48.65"

Or
UTM References
Datum (indicated on USGS map):

☐ NAD 1927 or ☐ NAD 1983

1. Zone: Easting: Northing:

Verbal Boundary Description (Describe the boundaries of the property.)

The boundaries of CP Virginia Tower are the footprint of the structure itself: approximately 16'6" by 18'6".

Boundary Justification (Explain why the boundaries were selected.)

The boundaries correspond to the extent of exterior rehabilitation required in the Section 106 Memorandum of Agreement among the Federal Highway Administration, the United States Marine Corps, the National Park Service, the District Department of Transportation, the District Department of Parks and Recreation, the District of Columbia State Historic Preservation Office and CSX Transportation, Inc. regarding the Reconstruction of the Virginia Avenue Tunnel, June 5, 2014.

---

11. Form Prepared By

Name/Title: Susan L. Bupp, Senior Cultural Resources Specialist; Seth Wilcher, Architectural Historian; Rachael Mangum, Cultural Resources Specialist
Organization: Parsons
Street & Number: 100 M Street SE
City or Town: Washington State: DC Zip Code: 20003
E-mail: susan.bupp@parsons.com
Telephone: 202-775-3480
Date: March 25, 2015

Additional Documentation

Submit the following items with the completed form:

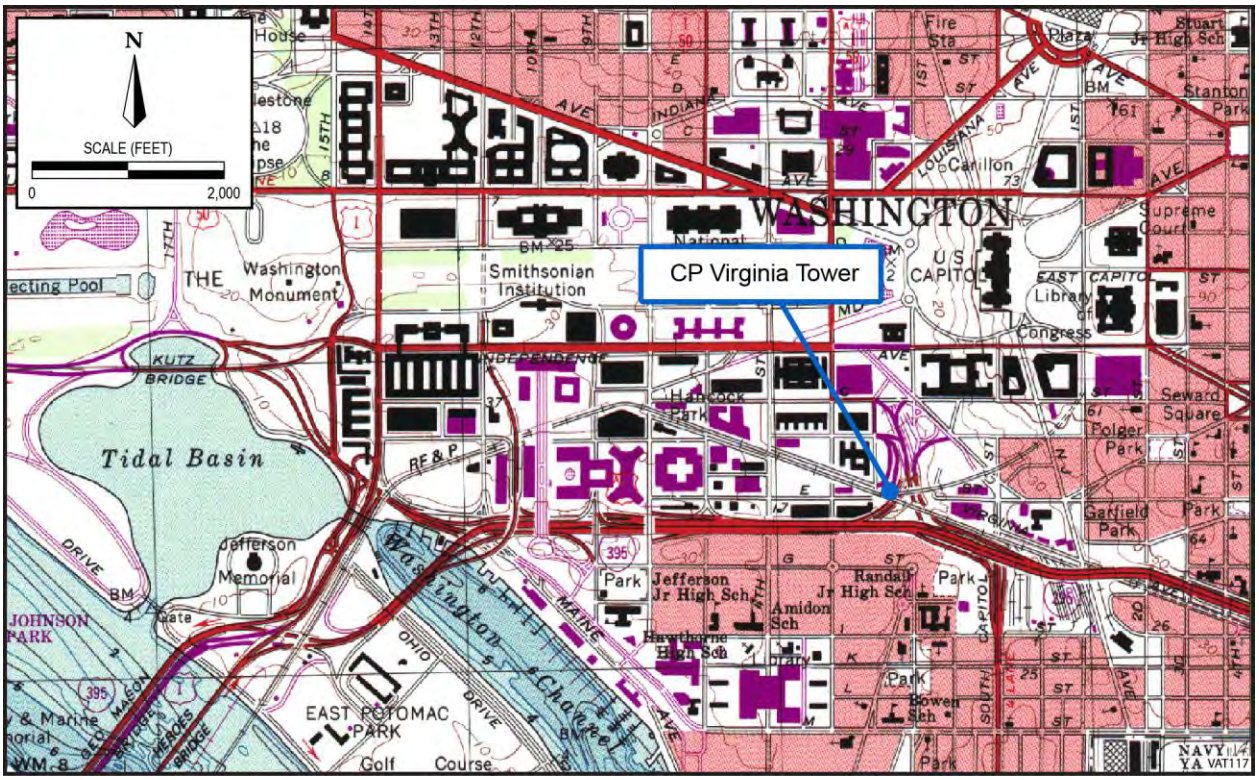
- **Maps:** A **USGS map** or equivalent (7.5 or 15 minute series) indicating the property's location.

- **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.

- **Additional items:** (Check with the SHPO, TPO, or FPO for any additional items.)

Photographs

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels (minimum), 3000x2000 preferred, at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map. Each photograph must be numbered and that number must correspond to the photograph number on the photo log. For simplicity, the name of the photographer, photo date, etc. may be listed once on the photograph log and doesn't need to be labeled on every photograph.



Location of CP Virginia Tower, Washington DC SW. USGS 7.5" Quad Washington West, DC-MD-VA 2014.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

CP Virginia Tower
Name of Property
SW, Washington, DC
County and State
Name of multiple listing (if applicable)

Section number 7 Page 1

The Control Point (CP) Virginia Tower is a two–story, red brick, railroad interlocking control tower with a pyramidal roof. It is located on the north side of the CSX railroad tracks, on the southeast corner of 2nd Street SW and Virginia Avenue SW in Washington, DC (Figure 1). The tower is set on a steel girder and concrete platform, elevated above street level so that its first floor is even with the adjacent railroad track grade (Figure 2). Access to the tower is from a metal frame and concrete tread stairway on the east elevation from the enclosed courtyard below (Figure 3).

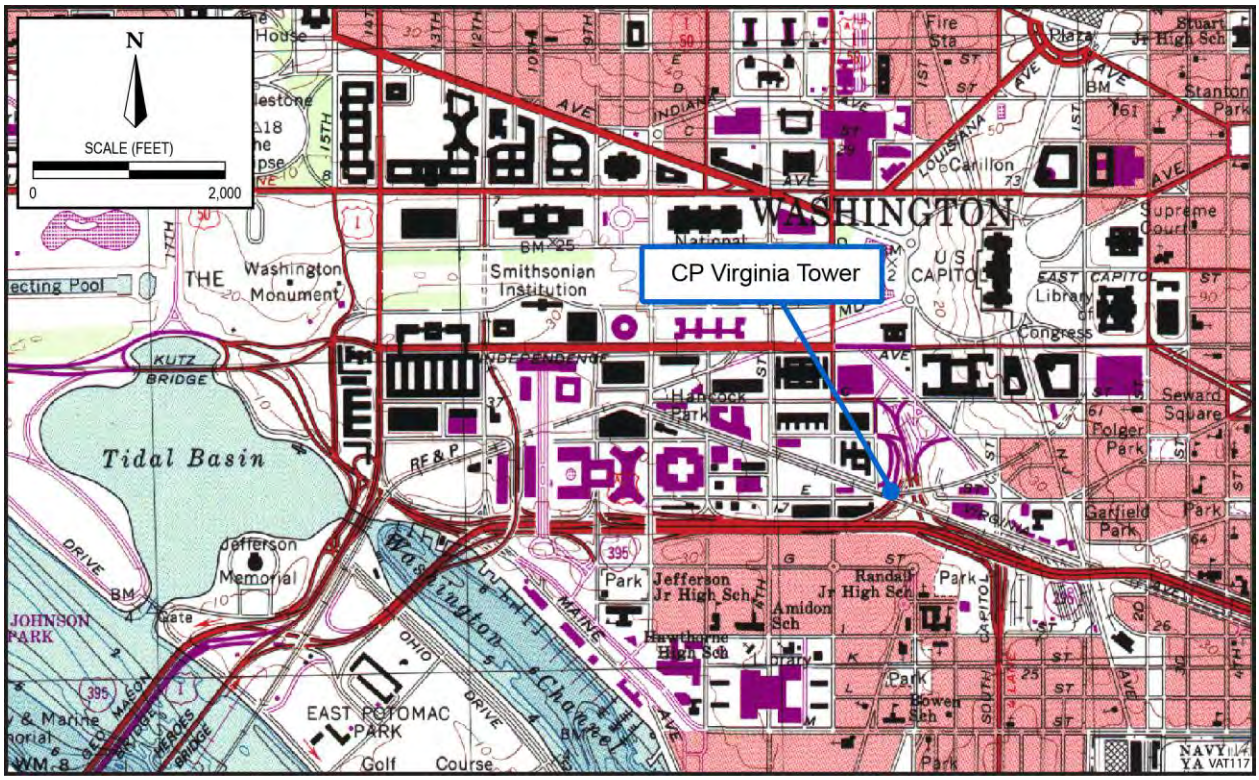


Figure 1. Location of existing Virginia Avenue Tunnel and CP Virginia Tower.

Figure 2. Steel girder and concrete platform under CP Virginia Tower and exterior wall of basement.

Figure 3. Steel frame staircase with concrete treads attached to steel platform on the East Elevation, CP Virginia Tower.

The basement exterior consists of concrete topped with common bond red brick (two series of one header row and four stretcher rows) (Figure 2). The water table (separation between the first floor and the basement) consists of two rows of red concave plinth brick (Figure 4). The first floor exterior consists of red brick laid in common bond. Recessed header rows provide ornamentation to the lower story. A flared metal or stone band course separates the first floor and the second floor on the south elevation, and a stone band course separates the floors on the east and west elevations (it is not continuous, lacking on the north elevation). The second story exterior is clad in common bond red brick and does not contain recessed headers as found on the first story. The fascia, soffit, and cornice are wrapped metal (Figure 3). The cornice consists of three ribbons separated by relief bands of metal. Metal eaves project slightly from the pyramidal roof, which is composed of asphalt shingles. A chimney with matching brick design is located on the northwest corner of the structure, and a metal downspout and polyvinyl chloride (PVC) pipe extensions are attached on the east side of the chimney.

Figure 4. Water table consisting of two rows of red concave plinth bricks, CP Virginia Tower.

South Elevation

The south elevation is the primary elevation and faces the rail line (Figure 5). The first floor contains two double-hung windows, approximately 40" wide by 84" tall, with limestone jack arch, keystone, and sill, located equidistant from the corners of the façade. The two windows are six-over-two and covered with protective expanded metal mesh screens. The second floor is dominated by a four-panel bay window with metal clad lintels, casings, and sills (Figure 6). The four bay windows are double-hung one-over-one with the top sash comprising one-third of the window and the bottom sash consisting of the remaining two-thirds. The windows are approximately 40'' wide by 84'' tall and provide views east, south, and west along the rail lines. The bay window soffit has a cementitious soffit with metal clad trim (Figure 7).

Figure 5. West and South Elevation, CP Virginia Tower.

Figure 6. Bay Window, South Elevation, CP Virginia Tower.

Figure 7. Bay Window Soffit, South Elevation, CP Virginia Tower.

East Elevation

The east elevation provides access to and from the courtyard below via a steel frame platform with concrete riser access stairway (Figure 3). The CP Virginia Tower access door is located near the northeast corner and is topped by a limestone jack arch and keystone. Plywood covers a rectangular transom area above the door (Figure 8). Two double-hung, one-over-one windows with top sash comprising one-third of the window and the bottom sash consisting of the remaining two-thirds of the window are located on the second floor. These windows, approximately 40" wide by 84" tall, are oriented nearer to the south elevation to provide additional sightlines to the east rail line. The windows also have limestone jack arches, keystones and limestone sills. The windows are covered with protective heavy expanded mesh screens.

Figure 8. East and North Elevations, CP Virginia Tower.

North Elevation

The north elevation contains one small fixed window with a limestone jack arch, keystone, and sill on the first floor (Figure 8). The window is about 24" wide by 24" tall and is located higher on the first floor façade (identical to the height of the window on the west elevation) in the second floor stairwell. A brick chimney is located in the northwest corner; its brickwork mimics the patterning on the main building with a series of common bond brick stretcher courses with recessed header rows on the first floor and the common bond brickwork on the second floor. A metal downspout is attached to the east side of the chimney and empties into PVC pipe just above the water table of red concave plinth brick. The stone band course is discontinuous on the north façade.

West Elevation

The west elevation contains one small fixed window with a limestone jack arch, keystone, and sill on the first floor near the northwest corner (Figure 9). The window is about 24" wide by 24" tall and is located higher on the first floor façade, providing light to the lavatory inside. Two double-hung one-over-one windows with top sash comprising one-third of the window and bottom sash comprising the remaining two-thirds pierce the second floor. These windows, approximately 40" wide by 84" tall, are oriented nearer to the south elevation to provide additional sightlines to the west rail line. The windows have limestone jack arches, keystones and limestone sills. The windows are covered with protective expanded metal mesh screens.

Figure 9. West Elevation, CP Virginia Tower.

Interior

Some original interior architectural features are extant and include the rail lintel above the sliding window in the basement, square wood newel post and square spindles on the interior staircase, decorative pressed tin ceiling panels, and heavy plaster cove molding on the second floor. However, the interlocking mechanisms and equipment associated with this structure's function as a control tower for the interlocking have been removed. Previous photographs of the interior indicate that the original CP Virginia Tower interlocking mechanism was pneumatic with a model board and "pistol-grip" switch levers. Based on historic research, most likely in the 1930s, an electric switch machine was installed at CP Virginia Tower. The electric switch machines were much smaller in size than the pistol grip machines associated with the pneumatic system, requiring less space.

General Railroad History

In 1853, a group of plantation owners and merchants located in the southern Maryland counties proposed a rail line from Baltimore to the Potomac River south of Washington DC to provide a reliable transportation system for moving local produce and passengers from the region from the southern counties (a northern rail outlet at Baltimore and a southern water navigation outlet at the Potomac River).[1] Even though the Baltimore and Potomac Railroad was chartered in 1853, due to lack of financial support, surveys for the proposed rail corridor were not conducted until 1859.[2] The Baltimore and Potomac Railroad was originally intended to run from Baltimore to tobacco country in Maryland's lower Western Shore (Popes Creek, Maryland on the lower Potomac); however, a clause in the incorporation papers permitted unspecified branches up to 20 miles long elsewhere, endowing the power that would later provide the means of building a line between Baltimore and Washington, DC which the Maryland Legislature would not have sanctioned.[3]

Grading for the main line (Baltimore to Popes Creek) was completed in 1868 and the line was operational by 1873.[4] In 1867, the Pennsylvania Railroad purchased the Baltimore and Potomac Railroad and that same year, the U.S. Congress authorized construction of the 'branch' from Bowie, Maryland to the Potomac River.[5] The branch line was graded in 1869.[6] On June 21, 1870, Congress approved an act authorizing the Baltimore and Potomac Railroad to enter Washington DC through a bridge across the Anacostia River and a tunnel under Virginia Avenue, SE to connect with the railroads in Virginia across 'Long Bridge.'[7] The tunnel under Virginia Avenue was designed to provide unfettered street access to the entrance to the Washington Navy Yard. This act also granted perpetual use of the bridge free of cost, provided that the Baltimore and Potomac Railroad maintain it for ordinary traffic and permit other railroads to use it. This grant ended the exclusive rights of the Baltimore and Ohio (B&O) Railroad to use Long Bridge.[8] In 1872, Congress authorized the Baltimore and Potomac Railroad to construct a passenger station in Washington, DC[9] and opened to regular passenger service on July 2, 1872.[10]

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[1] Burgess, George and Miles Kennedy 1949, *Centennial History of the Pennsylvania Railroad Company, 1846-1946*, Prepared by the Pennsylvania Railroad Co, Philadelphia; Roberts, Charles S. and David W. Messer 2003, *Triumph VI, Philadelphia, Columbia, Harrisburg to Baltimore and Washington, DC, 1827-2003*. Barnard, Roberts and Co., Inc. Baltimore, Maryland. PP 329-371; Schotter, H.W. 1927, *The Growth and Development of the Pennsylvania Railroad Company: A Review of the Charter and Annual Reports of the Pennsylvania Railroad Company 1846 to 1926*, Inclusive. Allen, Lane & Scott, Philadelphia, Pennsylvania.

[2] Burgess and Kennedy 1949: 274.

[3] Baer, Christopher T. 2004, *PRR Chronology, 1934,* Pennsylvania Technical and Historical Society. Available on line at: http://www.prrths.com/Hagley/PRR1934%20Aug%2004.wd.pdf. Accessed February 2, 2011.

[4] Burgess and Kennedy 1949: 276.

[5] Schotter 1927:86.

[6] Burgess and Kennedy 1949

[7] Ibid: 276

[8] Ibid

[9] Schotter 1927:87

[10] Baer, Christopher T. 2005a, *PRR Chronology, 187,* Pennsylvania Technical and Historical Society. Available on line at: http://prrths.com/Hagley/PRR1872%20Feb%2005.pdf. Accessed February 2, 2011; Roberts and Messer 2003; Schotter 1927:103

Grade Crossings

Grade crossings had been a safety concern in Washington, DC with the rail lines of the B&O Railroad long before the Pennsylvania Railroad established the Baltimore and Potomac Railroad in 1872. Measures to limit danger to the general population from the potential for collisions were established by the DC government in coordination with the two railroads. Such measures consisted of fencing tracks near busy intersections such as along Virginia Avenue and North Capitol Street, enforcing a lower speed limit through the city (6 mph after 1871), constructing two bridges to carry rail lines above the streets, stopping trains and ringing their bells before intersections with street car tracks (enforced through a 1894 law and 1895 regulation), and installing manually operated gates at the majority of the fifty-two grade crossings by the 1890s.[11] Unfortunately these measures were not entirely effective and throughout the 1890s, DC averaged three grade crossing deaths annually and a serious accident about every three weeks.[12]

Grade crossings also resulted in transportation delays for pedestrians, carriage riders, and trolley passengers. The railroads' need for new stations became connected with the population's desire to end grade crossings as both construction activities could be undertaken simultaneously.[13] A station was proposed that would unite both the B&O Railroad and the Pennsylvania Railroad facilities at one location. With the passage of the Union Station Act in 1902, a series of improvements were designed and constructed by the B&O Railroad and the Pennsylvania Railroad. Facilities such as the viaduct, the Capitol Hill Tunnel (First Street Tunnel); rail yards north of Florida Avenue; an express building for small freight, milk, and mail; and a powerhouse were developed jointly. The B&O Railroad created new freight yards, coal yards, and grade separated rights-of-way for two of their branches. The Pennsylvania Railroad replaced Long Bridge, excavated a longer tunnel along Virginia Avenue, developed six miles of new rights-of-way through Northeast, and eliminated grade crossings.[14]

In 1902, the Pennsylvania Railroad consolidated the Baltimore and Potomac and the Philadelphia, Wilmington, and Baltimore railroads forming a new company - the Philadelphia, Baltimore and Washington Railroad; almost all of the capital stock was owned by the Pennsylvania Railroad.[15]

In 1903, DC granted a permit to the Philadelphia, Baltimore, and Washington Railroad to construct a twin tunnel from the intersection of Massachusetts Avenue and First Street, under Capitol Hill, to New Jersey Avenue and D Street, SE.[16] Construction of the First Street tunnel was underway in 1904. The construction of the First Street tunnel (completed in 1906) also included the construction of the Virginia

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[11] Wright, William 2006**,** *History of Union Station*. Available on line at: http://www.washingtonunionstation.com/history.html#1. Accessed on January 23, 2015.
[12] Ibid
[13] Ibid: 43
[14] Ibid:110
[15] Baer, Christopher 2005b, *PRR Chronology, 1902*, Pennsylvania Technical and Historical Society. Available on line at: http://www.prrths.com/Hagley/PRR1902%20Mar%2005.pdf. Accessed February 8, 2011; Burgess and Kennedy 1949:498; Roberts and Messer 2003: 43: Schotter 1927: 279
[16] The New York Times 1903, Tunnel under the Capitol: Permit Granted in Washington to the Pennsylvania Railroad, but it must use Electric Power. Published September 10, 1903. Available on line at: http://query.nytimes.com/mem/archive-free/pdf?_r=1&res=9404EFD61339E333A25753C1A96F9C946297D6CF&oref=slogin Accessed on January 23, 2015.

Interlocking Tower which served to manage train traffic and provide switching operations between the First Street rail line (north/south) and the main rail line of the Philadelphia, Baltimore and Washington Railroad (east/west) following the alignment of Virginia Avenue.

Interlockings

Interlockings were constructed by railroads at grade crossings with other rail lines, at locations where trains would cross over from one track to another (and potentially occupy a section of track normally traveled by trains approaching in the opposite direction), at locations where major branch lines and heavily-used sidings join the main line, and at lift bridges. Interlocking towers housed an interlocking machine that would align switches and signals through a series of trackside pipes. The operator or leverman would manually manipulate the various levers to realign the tracks and shift trains to the appropriate tracks to avoid conflicting routes and prevent accidents.[17]

The interlocking machine would be installed trackside, then the frame of the tower would be constructed around it. Interlocking towers were built as two-story structures because of the size and complexity of the interlocking machine and the need for visual observation by the operator. The inner workings of the machine were located on the first floor, while the operator and levers were located on the second floor.[18]

Interlocking control technology began to emerge in the 1860s on England's rail lines with the development of John Saxby's interlocking machine that combined signal and track switch control.[19] The first switch machines were mechanical and consisted of heavy-duty metal frames fastened to the second floor framing and structural elements of the tower. They contained a series of long metal levers, each controlling an individual track switch or a semaphore signal by means of a long metal rod that dropped into the basement of the tower, turned 90 degrees to exit the building trackside at grade, and turned 90 degrees again to travel to the switch or signal it controlled, and turned 90 degrees again (either horizontally for a track switch or vertically for a semaphore signal) to attach to the device. The rods were typically ganged together and generally were supported on rollers set just above the grade. It took a strong-armed operator to be able to successfully move the switch lever - hence the term "Armstrong," which became an industry moniker.[20]

One of the first refinements in switch and signal control was the use of pneumatic operation. Compressed air was placed into hollow metal pipes, which operated the switch points and semaphores instead of the mechanical action of solid metal rods. Towers were outfitted with air compressors (usually two), air storage tanks, and compressed air drying pipes (usually located on the building exterior, attached to an exterior wall). Initially, Armstrong switch machines were simply adapted to accommodate

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[17] Hoosier Valley Railroad Museum, Inc. 2010, R*ebuild Grasselli Tower: A Preservation Effort of the Hoosier Valley Railroad Museum*. Available on line at: http://www.grassellitower.com/towers.htm. Accessed 12/9/14.

[18] Ibid

[19] John Bowie Associates 2011, *Interlocking Towers on Amtrak's Right-of-Way in Pennsylvania: A Historic Architectural and Industrial Examination and Determination of Eligibility for Listing into the National Register of Historic Places of 19 Extant Towers along the former Pennsylvania Railroad between Morrisville and Marcus Hook (the Northeast Corridor) and between Philadelphia and Harrisburg (the Keystone Corridor)*. Prepared for the National Railroad Passenger Corporation (Amtrak), Philadelphia, Pennsylvania. Prepared by John Bowie Associates, Wallingford, Pennsylvania.

[20] Ibid

pneumatic switches; they were later modified to contain a relay contact to operate a valve at the switch points or at the semaphore, which allowed a blast of high-pressure compressed air in the pipe to move the track or the signal arm accordingly. However, the fundamental logic of the switch machine remained in place - the lever to activate the track switch would not move until the appropriate levers for all affected signals and other switches were properly aligned in the locking bed -but moving the lever did not require as much brute force as with the mechanical rods.[21] The installation of the relays (which provided the connection between the mechanical operation of the switch machine and pneumatic compressed air operation of the various pipelines) necessitated the placement of racks of shelves on the first floors of towers (beneath the switch machines, after the heavy-duty metal rods were removed); basements (or sometimes separate outbuildings) were modified to contain air compressors and air gauges.

Another development at this time was the model board; electrical contacts placed onto the levers in the switch machines were wired to lights placed onto overhead display boards that visually modeled the position and movement of the tracks. The model boards were usually hung from the ceiling directly above the switch machine; they were typically constructed of sheet metal and painted black with a white schematic track diagram depicting the trackage in the interlocking. Different colored lights were placed at the locations of the numbered track switches and signals, so that the operator could observe, at a glance, the position of everything within the interlocking in advance of the oncoming train's arrival. The most significant development arising from pneumatic switch control was the development of "pistol-grip" switch levers and the eventual obsolescence of the Armstrong lever. Because the control of the switches and signals were now accomplished with air and relays instead of rigid rods, levers to physically move them were no longer required.[22] After the turn of the century, electrical contacts were placed onto switch points to provide a closed circuit connection to relays located in the tower, and integrated into the switch machine logic.[23]

By the 1930s, railroads began using electric controls, which provided the same prioritized sequence of checks executed by the locking beds, except with a series of relays. Relays controlled each individual track switch and signal, and they were wired to prevent any track switch from operating without all appropriate signals and related track switches being in proper alignment. Electric switch machines, sometimes called "centralized traffic control" (or CTC) machines, were dramatically smaller in size than pistol grip machines with large locking beds. The CTC machine was small enough that it could fit onto an operator's desk. It contained compact-sized switch levers and a schematic track plan stenciled onto its face. Since it was electrically-controlled, it no longer needed the bulky locking bed and ornamental wood cabinet that typically occupied so much room in the tower. Electric switch machine control also necessitated the use of large numbers of relays to control the interlockings. Consequently, first floor spaces in many towers were packed tightly with relay shelves (or racks), and often there was barely enough room for the track and signal crews to circulate throughout the rooms. Even though the model

[21] Ibid
[22] Ibid
[23] Ibid

board was not longer needed, it was often adapted to graphically depict the switch settings of the CTC machine (usually for the visual benefit of the operator or the dispatcher).[24]

By the 1980s, interlockings were controlled electronically (also called solid-state interlocking - or SSI) using a system of custom-designed software to replace the relays altogether.[25] The principal advantage of SSI is that interlockings could be controlled from remote locations; they were no longer required to be physically located at the interlocking, and numerous interlockings could be controlled from one central remote location.[26]

Interlocking Towers in Washington, DC

Six interlocking towers were constructed in Washington, DC at the turn of the century: "A", "C", "F", "K", "QN", and Virginia towers. "A" tower was located below Massachusetts Avenue, at the point where the tracks serving the lower level platforms of Union Station fed into the tunnel. "C" tower sat near New York Avenue, at the point where both branches of the B&O Railroad, the Pennsylvania Railroad main line, and the leads from the rail yards came together. "F" tower was located east of where the Pennsylvania Railroad main line and Capital Subdivision lines met. "K" tower, located just south of the street from which it took its name, stood at the "throat," the point where the eight tracks leading into the Union Station terminal widened into the approaches to the gates.[27] "QN" tower was located just north of where the B&O main line and the Metropolitan Sub-Division lines met. Virginia Tower managed train traffic and provided switching operations between the First Street rail line and the main rail line of the Philadelphia, Baltimore, and Washington Railroad (part of the Pennsylvania Railroad). Only "K" and Virginia towers are extant; the other four interlocking towers have been demolished.

Tower Architecture

Based on a small study of nineteen Pennsylvania Railroad interlocking towers in Pennsylvania[28], three general periods of tower architecture were defined: 1870s-1900, 1900-late 1930s, and late-1930s-1940s. The first period of tower design (1870s-1900) was characterized by vernacular architectural forms with massing and detailing of the Victorian, Queen Anne, and other eclectic architectural styles. The towers were mostly two stories, set on brick or stone foundations, and constructed of brick or wood. Some towers contained projecting bays facing trackside. The roofs were typically hipped in shape with a center cupola. Most towers from this period had exterior stairways.[29]

The second period of tower design (1900-late 1930s) represents a shift from wood framing and wood cladding construction techniques (of the revival era) to more substantial, completely fireproof construction, including steel, concrete and concrete-clad steel framing with solid masonry walls (either brick, concrete or terra-cotta with or without stucco finishes), and slate or tile roofs. The

[24] Ibid
[25] Ibid
[26] Ibid
[27] Wright 2006
[28] John Bowie Associates 2011
[29] Ibid

Pennsylvania Railroad towers in the early years of this second period were still constructed from individual designs and were not standardized. Another distinct standardized design type of the later second period was a more conservative and less-ornamented design - constructed completely of masonry (concrete or brick foundations/first floors) and brick second floors, with considerably less exterior ornamentation. Like many of the earlier towers of this period, these were two stories in height, square or rectangular in plan, constructed with steel and concrete framing, and containing internal stairways and second floor toilet rooms. Each of these towers also had a projecting second floor trackside bay.[30]

The third period of tower design (late 1930s-1940s) was more consistent in character. The towers were generally two-stories in height and constructed with steel and concrete framing systems and load-bearing brick exterior walls. They all contained broad, overhanging hipped roofs with fireproof (slate, tile or standing seam metal) coverings, and the projecting second floor bays were eliminated entirely. In place of the bay, designers substituted comer window configurations on the second floor. These towers continued to use electro-pneumatic switch machines, but as the interlocking technology evolved, shifted to all- electric CTC machines.[31]

NRHP Eligibility

CP Virginia Tower is not considered eligible for listing in the National Register of Historic Places (NRHP) under Criterion A. CP Virginia Tower is one of six interlocking towers constructed in Washington, DC in 1904-1906 and was associated with railroad improvements mandated by Congress and implemented by the Pennsylvania Railroad or its subsidiaries and the B&O railroad. It was originally a critical element of the railroad infrastructure and served to manage train traffic and provide switching operations between the First Street rail line (north/south) and the main rail line of the PB&W railroad (east/west). With evolving technology of interlocking control systems (from Armstrong switch machines to pneumatic switch control to CTC to SSI), CP Virginia Tower eventually was no longer manned, and all manual interlocking systems within the tower were removed. The tower was used for storage and railroad security. CP Virginia Tower no longer functions as a mechanized interlocking control tower and has therefore lost its integrity to convey significance as a critical element of railroad infrastructure associated with early 20th century railroad improvements in Washington, DC.

CP Virginia Tower is not considered eligible for listing in the NRHP under Criterion B. It was designed in the vernacular style of the early 20th century; it is not known to be associated with any significant architects or builders of industrial structures. CP Virginia Tower also represents basic railroad infrastructure for interlockings and is not associated with specific individuals from the Pennsylvania Railroad or the Philadelphia, Baltimore and Washington Railroad.

CP Virginia Tower is considered eligible for listing in the NRHP under Criterion C. It embodies the distinctive characteristics of a type and period of construction – railroad tower construction in the 1900 to late 1930s. It represents a vernacular architectural style created for railroad interlocking technology in the early 20th century and is one of two interlocking towers still extant in Washington, DC. Based on a

[30] Ibid
[31] Ibid

general pattern of interlocking tower construction[32], CP Virginia Tower is characterized by architectural elements representative of the second period of Pennsylvania Railroad tower construction (1900-late 1930s). It is square and made of brick with steel and concrete framing. CP Virginia Tower has a projecting second floor trackside bay, and an internal stairway and toilet room.

The CP Virginia Tower is a two–story, Late Victorian, red brick, railroad interlocking control tower. Distinctive architectural features include a water table of two rows of red concave plinth brick separating the basement and first floor, red brick laid in common bond with recessed header rows on the first floor exterior, a flared metal or stone band course separates the first floor and the second floor on the south elevation and a discontinuous stone band course separates the floors on the east and west elevations, red brick laid in common bond with no recessed elements on the second floor exterior, the metal-wrapped fascia, soffit, and cornice, two six-over-two double-hung windows, approximately 40" wide by 84" tall, with limestone jack arch, keystone, and sill on the first floor, a four panel bay window with metal lintels, casings, and sills and four 1/3 over 2/3 double hung windows on the second floor (all approximately 40" wide by 84" tall), and a pyramidal roof.

Physical Integrity

CP Virginia Tower retains its integrity of location (located at the southeast corner of 2nd Street SW and Virginia Avenue SW), design (two-story square tower with track visibility from eight windows on the second floor), setting (located at the still active rail interlocking west of the First Street tunnel), materials (original steel girders, original brick, original stone lintels and sills), and workmanship (recessed brick header rows on the first floor, common bond brick rows on the second floor with no recessed rows).

CP Virginia Tower lacks integrity of feeling and association. It is surrounded by modern steel and glass buildings on the north side which contrast with the late Victorian style of the tower. The tower also faces and is visible from a major interstate highway (I-395) crossing through Washington, DC. Although CP Virginia Tower is still associated with the existing rail interlocking and active rail lines in Washington, DC, the loss of interlocking machinery within the tower diminishes its integrity of association as it no longer functions as an interlocking control tower.

CP Virginia Tower is considered eligible for listing in the NRHP under Criterion C and is significant at the local level.

[32] Ibid

CP Virginia Tower
Photo Log

Name of Property: Control Point (CP) Virginia Tower

City or Vicinity: Washington (Southwest)

County: N/A State: District of Columbia

Photographer: Rachael Mangum

Date Photographed: September 12, 2013

Description of Photograph(s) and number, include description of view indicating direction of camera:

Steel girder and concrete platform under CP Virginia Tower and exterior wall of basement, looking west.

1 of 8.

Name of Property: Control Point (CP) Virginia Tower

City or Vicinity: Washington

County: Southwest State: District of Columbia

Photographer: Rachael Mangum

Date Photographed: September 12, 2013

Description of Photograph(s) and number, include description of view indicating direction of camera:

Steel frame staircase with concrete treads attached to steel platform on the East Elevation looking west.

2 of 8.

Name of Property: Control Point (CP) Virginia Tower

City or Vicinity: Washington

County: Southwest State: District of Columbia

Photographer: Susan Bupp

Date Photographed: December 18, 2014

Description of Photograph(s) and number, include description of view indicating direction of camera:

Water table consisting of two rows of red concave plinth bricks, looking north.

3 of 8.

Name of Property: Control Point (CP) Virginia Tower

City or Vicinity: Washington

County: Southwest State: District of Columbia

Photographer: Phil Sheridan

Date Photographed: December 11, 2014

Description of Photograph(s) and number, include description of view indicating direction of camera:

West and South Elevation, looking northeast.

4 of 8.

Name of Property: Control Point (CP) Virginia Tower

City or Vicinity: Washington

County: Southwest State: District of Columbia

Photographer: Susan Bupp

Date Photographed: December 18, 2014

Description of Photograph(s) and number, include description of view indicating direction of camera:

Bay Window, South Elevation, looking north.

5 of 8.

Name of Property: Control Point (CP) Virginia Tower

City or Vicinity: Washington

County: Southwest State: District of Columbia

Photographer: Rachael Mangum

Date Photographed: September 12, 2013

Description of Photograph(s) and number, include description of view indicating direction of camera:

Bay Window Soffit, South Elevation, looking west.

6 of 8.

Name of Property: Control Point (CP) Virginia Tower

City or Vicinity: Washington

County: Southwest State: District of Columbia

Photographer: Rachael Mangum

Date Photographed: September 12, 2013

Description of Photograph(s) and number, include description of view indicating direction of camera:

East and North Elevations, looking southwest.

7 of 8.

Name of Property: Control Point (CP) Virginia Tower

City or Vicinity: Washington

County: Southwest State: District of Columbia

Photographer: Susan Bupp

Date Photographed: December 18, 2014

Description of Photograph(s) and number, include description of view indicating direction of camera:

West Elevation, looking east.

8 of 8.