

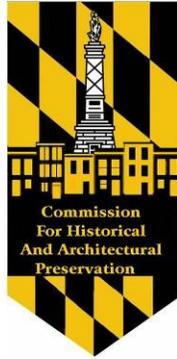
**The Commission for Historical and  
Architectural Preservation**

**Landmark Designation Report  
April 9, 2013**



**Cross Keys Valve House**

5106 Falls Road  
Baltimore, Maryland



COMMISSION FOR HISTORICAL & ARCHITECTURAL PRESERVATION

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## **Significance Summary**

The Cross Keys Valve House was one of three stone Classical Revival gatehouses that serviced Baltimore City's municipal water system along a conduit that ran from Lake Roland to the Mt. Royal Reservoir. Begun in 1858 and completed in 1862, this gravity-powered conduit system then located in Baltimore County provided the citizens of Baltimore with safe clean water. It was an engineering marvel when completed, and was the city's first truly public utility. The waterworks was designed by James Slade, City Engineer for Boston and consulting engineer for the Baltimore Waterworks, and the waterworks was informed by the best practices of waterworks and engineers in other major American cities. The Cross Keys Valve House, completed in 1860, was originally called the "Harper Waste Weir", which described a lower chamber in the valve house that collected debris from the water as it rushed through the conduit on its way to the city boundaries. The Valve House and the conduit over which it sits played a significant role in the city's municipal water system, and represents a major engineering feat for the City of Baltimore.

## **Property History**

This property is located just north of the modern gatehouse entrance of the Village of Cross Keys on the west side of Falls Road. It is comprised of a small Greek Revival building located on an embankment atop a defunct water conduit. The building and conduit were part of the city's original waterworks. (See Image 1) The building was originally called "Harper Waste Weir" by the Baltimore City Water Department, but today is called the Cross Keys Valve House.<sup>1</sup> (See Image 2)

The valve house and its related conduit was located on a portion of 25 acres of property in Baltimore County condemned by the Mayor and City Council of Baltimore in 1857 for use for the city's water works.<sup>2</sup> These 25 acres were part of the Oakland estate, which was purchased in 1801 by Charles Carroll of Carrollton as a gift for his daughter, Catherine, who was married to Robert Goodloe Harper. The Greek Revival Springhouse at Oakland was designed by Benjamin Latrobe, and today is located on the grounds of the Baltimore Museum of Art and is a Baltimore City Landmark. The estate grew to over 440 acres by 1818, and was bound approximately by the Jones Falls to the west, what is now Roland Avenue to the east, Coldspring Lane to the south, and Northern Parkway to the north.<sup>3</sup> In 1857, the property was owned by Charlotte Harper. She was paid \$14,250 for 19.5 acres condemned by the Mayor and City Council, and was later paid \$2,500 for an additional 5.5 acres needed by the city for the conduit.<sup>4</sup>

The valve house was constructed in 1860 over the conduit which ran between Swann Lake and Hampden Reservoir. Swann Lake, named for Baltimore Mayor Thomas Swann, is today called Lake Roland, and is located in Robert E. Lee Park in Baltimore County. Hampden Reservoir was filled in and serves as athletic fields for Roosevelt Park in Hampden. Construction began on the waterworks began in 1858, and was completed during the Civil War in 1862. The conduit was a 3-mile-long brick elliptical tunnel with

an area of almost 25 square feet and a capacity of 3.75 million gallons.<sup>5</sup> The conduit was located above-ground in an embankment at the site of the valve house, but for much of its 3 mile course was located below-ground. (See Images 1 and 2) South of the Hampden Reservoir, a pipeline brought the water to the Mount Royal Reservoir, which was located adjacent to the Jones Falls north of North Ave, the city boundary. This water system serviced city residents with clean water that was free from water-borne diseases or pollution. The history of the water works is discussed in depth in the Contextual History section of this report.

The construction of the conduit line, which required the use of 6 million bricks, the excavation of three tunnels that equaled a mile long, was completed in only 20 months because the work was done day and night. The contractors for the conduit line were J.W. Maxwell & Co., J.H. Hoblitzell & Co., and F.C. Crowley.<sup>6</sup>

The building has been called a gate house, valve house, and waste weir, all of which are accurate terms for its function, and were used somewhat interchangeably in documents about the structure. Regardless, this building served an important purpose in the waterworks system. The building allowed access to the conduit at a midpoint on the conduit, and fifteen feet below the conduit there is a lower chamber called a waste weir that collected debris. In addition, the waste weir served as an access point for draining water from the conduit. A gate clapper opened by hand-operated machinery in the building would shift the flow of water from the conduit to an open stream that ran west to the Jones Falls.<sup>7</sup> This open stream was still used into the 1950s. (See Image 3) Both of the gatehouses at the reservoirs also operated gate clappers that opened or closed the flow of water in the conduit.

The valve house is architecturally similar to two gatehouses that still exist today at Lake Roland and on the SPCA property in Hampden. These gatehouses were completed in 1862 and served to control the flow of water from Lake Roland and the Hampden Reservoir.<sup>8</sup> These two buildings are slightly larger than the Cross Keys gatehouse and feature windows, but in design are strikingly alike. These two buildings still exist today, but have been altered to serve new uses. All three were likely designed by James Slade, consulting engineer for the Baltimore City Waterworks. In a letter from Slade to the Water Board in 1858, Slade wrote that “Plans are now making for the Gate House and Dam at the Lake. Until these are made, the work cannot be let. When let, the preparation of stone for the Gate House will take some time...” which indicates that Slade either designed the gatehouses and waste weir himself, or an associate designed them.<sup>9</sup>

In its early history, the exterior of the conduit was examined on a weekly basis by the gatekeepers who lived at Lake Roland and Hampden Reservoir, each inspecting the length of the conduit from their respective gatehouses to the Harper waste weir. The grassy embankment covering the conduit was fenced off, a measure that prevented cattle from grazing on the embankment.<sup>10</sup> The city-owned land around the conduit was used to grow hay and was rented out for pasture, which provided the Water Department with extra income.<sup>11</sup> The 1871 Annual Water Department Report reported on the conditions of the water infrastructure, and stated the following about the conduit, which was drained

annually for repairs and cleaning: "The banks near Cross Keys have received a top dressing of manure. The culverts and fencing are in good order. In October six men passed through the Conduit, and swept its entire length from Harper's Waste Weir to Hampden Reservoir with hickory brooms, a distance of two and a half miles, the whole work is in excellent condition."<sup>12</sup> At that time, Cross Keys was an African American village located approximately a half mile south of the valve house on Falls Road. Only a few homes from this enclave still exist today.<sup>13</sup>

In his Annual Report for 1874, Robert Martin, the Civil Engineer for the Water Department, reported that "I found the Conduit from Lake Roland to the Reservoir as clean as the day it was built. On this occasion, as on previous inspections, no defects of any kind were seen. I am therefore able to report our main artery as perfect a piece of work as the day it was built."<sup>14</sup>

The conduit was used to provide water to the city until 1915, when siltation and disease ended the use of the water from Lake Roland.<sup>15</sup> By that time, the property surrounding the valve house on the both east and west sides of Falls Road had been owned by the Roland Park Company since the late 1890s, and the Roland Park Country Club's golf course was located adjacent to the conduit line on the west.<sup>16</sup> Following the update of water infrastructure, the conduit line fell out of maintenance, and the property surrounding the valve house became owned by the Roland Park Country Club. In 1963, the Roland Park Country Club sold property to the Rouse Company, which constructed the Village of Cross Keys.<sup>17</sup> Water still runs through the conduit under the valve house but is no longer part of the city's water system. In the 1960s, the defunct conduit caused some flooding in the Village of Cross Keys entrance gatehouse, which lies south of the valve house on the path of the conduit. The construction of the entrance gatehouse damaged that section of the conduit.<sup>18</sup>

Today, the Cross Keys Valve House is owned by the Cross Keys Management Corporation, and managed by Village Management, Inc. Jim Holechek, former resident of Cross Keys Village and author of *Baltimore's Two Cross Keys Villages: One Black. One White*, has been the steward of the Cross Keys Valve House for many years. He raised \$9,000 to restore the structure in 2009, and still personally maintains the property today. He has requested the landmark designation of this property.

The Cross Keys Valve House is not listed on the National Register of Historic Places, but is certainly eligible for inclusion given that other parts of the same waterworks are designated. Lake Roland was designated in 1992 as a National Register Historic District significant for its architecture and role in Baltimore's municipal waterworks, serving as an important example in Maryland of a major public engineering work. The lake, dam, and gatehouse are all included in the designation.<sup>19</sup> The Hampden Reservoir gatehouse is located on the property of the Snyder-Carroll House, also known as Evergreen-on-the-Falls, which is individually listed on the National Register of Historic Places.

## Contextual History

### *Baltimore's Water System*

Baltimore has had a water system for almost the entirety of its history. Two years after Baltimore City was created in 1797, a city council committee recommended laying pipes for water distribution. In 1800, following an outbreak of yellow fever, a deadly water-borne disease, an act was passed in City Council allowing the Mayor and City Council to administer a city water supply.<sup>20</sup> In 1804, the private Baltimore Water Company was established for the purpose of supplying residents with water, constructing a waterworks on the Jones Falls, installing a system of wooden pipes, and building pumps, spring houses, and fountains. In 1854, the City of Baltimore purchased the Baltimore Water Company for \$1.35 million, established a water board, and quickly went to work expanding the waterworks to meet the growing city's needs for clean, safe water.<sup>21</sup> Deadly water-borne diseases, such as yellow fever, were common in Baltimore and other American cities. The distribution of fresh water was imperative for public health and also played an important step in fostering the city's growth.

The plans for creating the conduit began in 1858 after studying similar water systems and consulting with engineers in other cities that had similar systems, such as Boston and Washington, D.C.<sup>22</sup> The Board also requested surveys and recommendations from several water engineers, including James Slade, City Engineer for Boston; Captain Thomas Philoteos Chiffelle, engineer for the Baltimore Water Works from 1843-1846 and 1852, Baltimore City surveyor, and engineer for national railroads; and Theophilus E. Sickels, formerly with the Boston Water works, and later an engineer for several national railroads.<sup>23</sup> The construction of the entire waterworks was overseen by Charles P. Manning, engineer-in-chief.<sup>24</sup> James Slade, Boston's City Engineer, was chosen as the consulting engineer and designed the plans for the Baltimore City Waterworks.<sup>25</sup>

Officially opened in 1862 after almost ten years of planning and construction. Baltimore's new water system was the city's first truly public utility, described as "a stupendous feat, placing our great metropolis on the Olympian heights of the ancients and their hydraulic genius," and the classical temples that served as gate houses and waste weir symbolized this aspiration of ancient infrastructural prowess.<sup>26</sup> On January 7, 1862, Acting Mayor Baker addressed the City Council, stating that "... we can now look upon the whole [works] with satisfaction and pride, knowing that the City of Baltimore possesses durable water works, furnishing a full and constant supply of pure, wholesome water, unsurpassed by any other city."<sup>27</sup> It was considered such a tremendous feat, because the water works could supply the city with almost four times the needed amount of water daily, and delivered the water only using gravitational force, without a need for expensive steam-powered pumps or other equipment that risked breaking down and cutting off the water supply.<sup>28</sup> The waterworks project also included the construction of an extensive network of pipelines in the city, as well as fireplugs and fountains. The water works was completed at a cost of \$3.5 million, which included the cost of purchasing the earlier privately-held waterworks.<sup>29</sup>

Although the water works officially opened in 1862, by August 1861, some citizens had already been enjoying the excellent water for six months. The portions of the project that remained to be completed were the “ornamental superstructures of the gate-houses of the dam and Hampden reservoir, the gate-keepers cottages, and the new Mount Royal Reservoir.”<sup>30</sup> The gate houses at Lake Roland and the Hampden Reservoir (now located on the SPCA property) are the same Classical Revival design as the Cross Keys Valve House. The Cross Keys Valve House was completed in 1860, and the gate houses were completed in 1862.

By 1863, over 18,000 households received water.<sup>31</sup> The next year, the water works could supply four times more water than was needed by the populace, but the city determined that it needed to increase its water supply, anticipating greater demand.<sup>32</sup> The Jones Fall water supply was improved with the Druid Lake, which was the first major earthfill dam in the US when it was completed in 1871.<sup>33</sup> Later additions include the Western Pumping Station and Western High Service Reservoir, also in Druid Hill Park.

Following a severe drought in 1872, the city decided to further expand the city’s water supply north to the Gunpowder River. The Gunpowder supply was brought into the city via Lake Montebello and the now-defunct Clifton Lake. The city’s water supply was further sustained through the construction of other reservoirs and water towers in the northern portions of the city, including the Roland Park water tower, which is a Baltimore City Landmark.<sup>34</sup> The original conduit provided water to the city until 1915, when siltation and disease ended the use of the water from Lake Roland.<sup>35</sup>

Much of the infrastructure from the original waterworks has been destroyed. The Hampden Reservoir and Mount Royal reservoir have been filled in. The above-ground remnants of the brick conduit between Lake Roland and the now-defunct Hampden Reservoir was destroyed by the construction of Cross Keys Village and the Poly/Western building.<sup>36</sup>

#### *James Slade, Consulting Engineer*

James Slade was the consulting engineer for the Baltimore Waterworks and designed the plans for the waterworks.<sup>37</sup> The Water Board found him to be competent for this task based on “his experience in the construction of works of a similar character” in Boston.<sup>38</sup> From 1855 to 1862, he was the City Engineer for Boston. During his tenure in that position, he extended Boston’s waterworks to the Back Bay district of Boston. He also served as a consulting engineer for the waterworks of other major American cities, including Hartford, Washington, D.C., and Salem.<sup>39</sup> He is also credited, along with original architect George Meacham, as a designer for the Boston Public Garden, a National Historic Landmark.<sup>40</sup> Slade was responsible for the design of the Baltimore waterworks, which likely included the architecture of the gatehouses and valve house.

## **Architectural Description**

The Cross Keys Valve House is an 11' x 16' front-gabled stone Classical Revival building. Located on top of the conduit embankment, it faces east towards Falls Road. The tooled ashlar stone is square cut in regular courses on all elevations. The façade has a central arched doorway, ornamented with quoining. The doorway features an iron gated door. This door was designed by Jim Holechek and wrought in 2009 by Baltimore's oldest ironwork company, G. Krug & Sons. This gate allows visitors to see into the structure and view the original valve pedestals, clapper, and grates within the building. The exterior of the building features quoins on the building corners and around the arched entrance. The building has a simple cornice, above which the date "1860" is carved into the pediment under the gable eaves. The building also features a slate roof, which was replaced in kind by Jim Holechek in 2009. The other three elevations do not have any fenestration. On the south, west, and north elevations, a rough-cut stone base is visible.

## **Staff Recommendations**

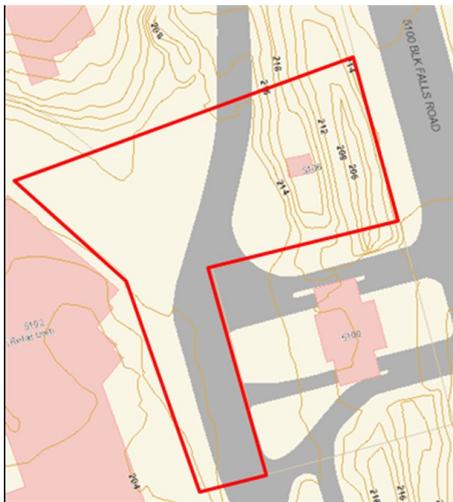
The property meets CHAP Landmark Designation Standards:

B. A Baltimore City Landmark may be a site, structure, landscape, building (or portion thereof), place, work of art, or other object which:

1. Is associated with events that have made a significant contribution to the broad patterns of Baltimore history;
3. Embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master, or that possesses high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.
4. Has yielded or may be likely to yield information important in Baltimore prehistory or history.

The Cross Keys Valve House was one of three stone Classical Revival gatehouses that serviced Baltimore City's municipal water system along a conduit that ran from Lake Roland to the Mt. Royal Reservoir. Begun in 1858 and completed in 1862, this gravity-powered conduit system then located in Baltimore County provided the citizens of Baltimore with safe clean water. It was an engineering marvel when completed, and was the city's first truly public utility. The waterworks was designed by James Slade, City Engineer for Boston and consulting engineer for the Baltimore Waterworks, and the waterworks was informed by the best practices of waterworks and engineers in other major American cities. The Cross Keys Valve House, completed in 1860, was originally called the "Harper Waste Weir", which described a lower chamber in the valve house that collected debris from the water as it rushed through the conduit on its way to the city boundaries. The Valve House and the conduit over which it sits played a significant role in the city's municipal water system, and represents a major engineering feat for the City of Baltimore.

# Locator Map



Topographic map depicting the location of the Valve House and the conduit on the parcel.

## Historic Maps



Image 1: “A topographical map of the Swann Lake and aqueduct of the Baltimore city water works, 1862”, Augustus Faul. Courtesy of the George Peabody Library, Sheridan Libraries, Johns Hopkins University. Accessible at: <http://jhir.library.jhu.edu/handle/1774.2/34966>

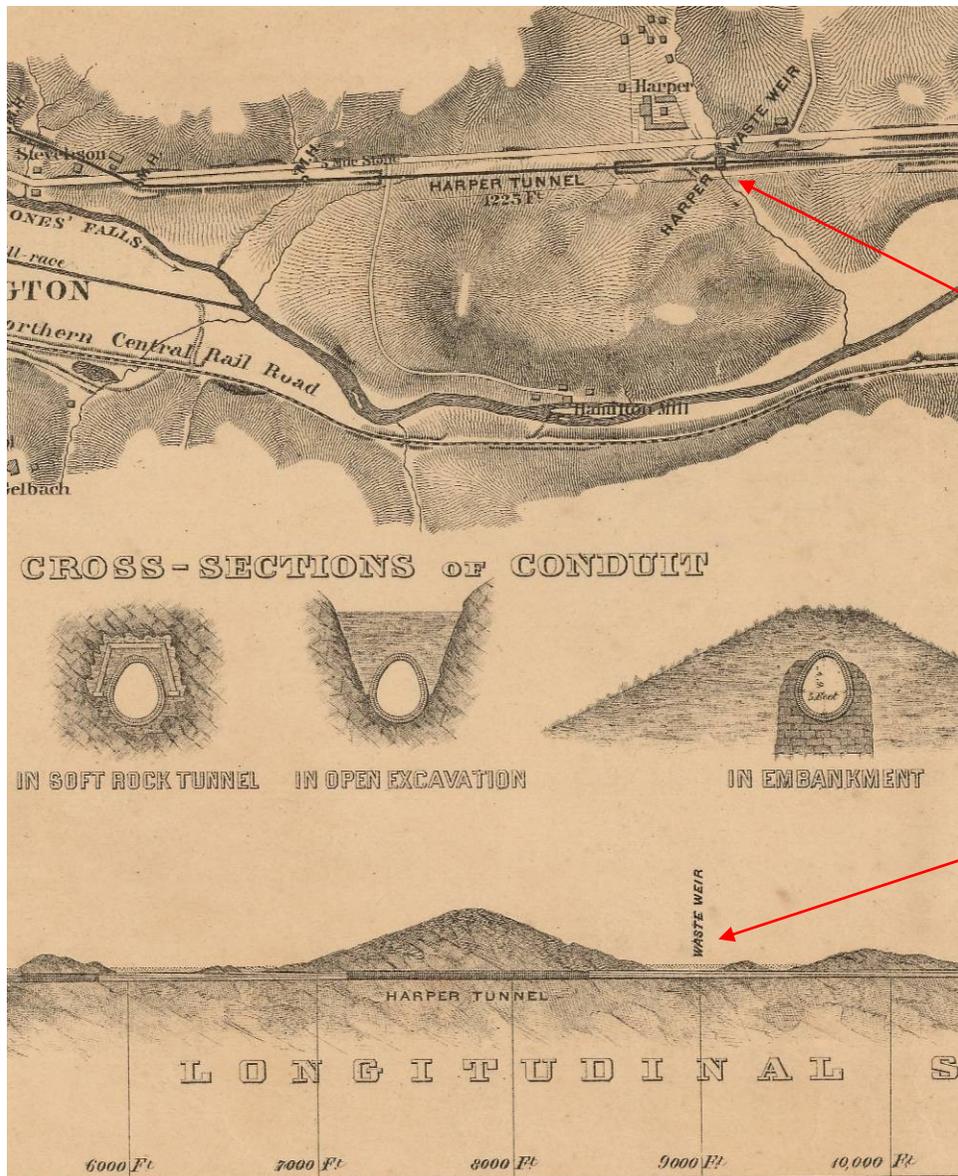


Image 2: Detail of the Harper Waste Weir in “A topographical map of the Swann Lake and aqueduct of the Baltimore city water works, 1862”, Augustus Faul. Courtesy of the George Peabody Library, Sheridan Libraries, Johns Hopkins University. Accessible at: <http://jhir.library.jhu.edu/handle/1774.2/34966>



Image 3: Detail of 1953 aerial photograph of the Roland Park Golf Course, showing the Valve House and the stream of “waste” water running its course to the Jones Falls. From “Then and Now: Northwest” page of Roland Park’s website. Accessible at: <http://www.rolandpark.org/ThenAndNowNorthwest>

## Images



Image 4: Photo titled “Harper’s Waste Weir - Roland Supply,” depicting the Cross Keys Valve House on August 8, 1912. The purpose of the wooden building is unknown, but may have been used for storage. Courtesy of Ronald Parks, Baltimore City Water Department.

## Photos



View from Falls Road of the Cross Keys Valve House, located on the embankment over the defunct conduit.



Detail of the datestone.



View of the Valve House from the north.



View of Valve House from the south. The building in the forefront is the gate house for the Cross Keys community.



The interior is not the subject of this designation; however, it retains a high degree of integrity.

**Photos of other Gatehouses built for the Baltimore Waterworks**



Façade of Lake Roland Gatehouse, built 1861, located in Robert E. Lee Park in Baltimore County.



The Lake Roland Gatehouse is adjacent to the dam built for the waterworks.



Façade of Hampden Reservoir Gatehouse, built 1861, located on the property of the SPCA adjacent to the parking.



Today, the Hampden Reservoir Gatehouse is used by the SPCA as a Spay and Neuter Clinic.

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<sup>1</sup> “A topographical map of the Swann Lake and aqueduct of the Baltimore city water works, 1862”, Augustus Faul. Courtesy of the George Peabody Library, Sheridan Libraries, Johns Hopkins University. Accessible at: <http://jhir.library.jhu.edu/handle/1774.2/34966>

<sup>2</sup> “Water Department- Harper, Mrs. C.C. property bounded by John Cockey B.B. Chamberlain Rural Mills”, Baltimore City Archives, Water Supply Records, Administrative Files, 1857, BRG 25-1-2-5-20, HRS # 430; “Water Department- Harper, Mrs. C.C. bounded by Falls Turnpike, William Stevenson”, Baltimore City Archives, Water Supply Records, Administrative Files, 1857, BRG 25-1-2-5-21, HRS # 431.

<sup>3</sup> Jim Holechek, *Baltimore’s Two Cross Keys Villages: One Black. One White.* (New York: iUniverse, Inc. 2003), pg. xi-xii.

<sup>4</sup> “Water Department- Condemnation of Land, damages awarded Conduit Line” Baltimore City Archives, Water Supply Records, Administrative Files, 1857, BRG 25-1-2-2-12, HRS # 352; “Water Department- Harper, Mrs. C.C. bounded by Falls Turnpike, William Stevenson”; “Water Department- Condemnation of Property- Reservoir, property crossed by right of way” Baltimore City Archives, Water Supply Records, Administrative Files, 1858, BRG 25-1-2-7-20, HRS # 60

<sup>5</sup> *The Mayor’s Message and Reports of the City Officers, Made to the City Council of Baltimore, for the Year 1877* (Baltimore, MD: John Cox, 1878), pg. 439. Digital copy available at the Internet Archive.

<sup>6</sup> “Baltimore City Water Supply: The City Water Works--Their Rise And Progress The” *The Sun (1837-1986)*; Aug 25, 1869; ProQuest Historical Newspapers: Baltimore Sun, The (1837-1986), pg. 1

<sup>7</sup> Jim Holechek “Cross Keys Historical Valve House” On file with CHAP.

<sup>8</sup> “The New Water Works--Report of the Chief Engineer”, *The Sun (1837-1986)*; Aug 16, 1861; ProQuest Historical Newspapers: Baltimore Sun, The (1837-1986), pg. 1

<sup>9</sup> “Water Department- Correspondence- Reservoir, enlargement of same and other” Baltimore City Archives, Water Supply Records, Administrative Files, 1858, BRG 25-1-2-9-3, HRS # 103

<sup>10</sup> *The Mayor’s Message and Reports of the City Officers, Made to the City Council of Baltimore, for the Year 1877*, pg. 439.

<sup>11</sup> *The Mayor’s Message and Reports of the City Officers, Made to the City Council of Baltimore, for the Year 1888, Volume II* (Baltimore, MD: John Cox, 1889), pg. 1340. Digital copy available at the Internet Archive.

<sup>12</sup> *Reports of the City Officers, Made to the City Council of Baltimore, for the Year 1871* (Baltimore, MD: John Cox, 1872), pg. 313. Digital copy available at the Internet Archive.

<sup>13</sup> Jim Holechek, *Baltimore’s Two Cross Keys Villages: One Black. One White.* (New York: iUniverse, Inc. 2003)

<sup>14</sup> *The Mayor’s Message and Reports of the City Officers, Made to the City Council of Baltimore, for the Year 1874* (Baltimore, MD: John Cox, 1875), pg. 405. Digital copy available at the Internet Archive.

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- <sup>15</sup> Jim Holechek, *Baltimore's Two Cross Keys Villages: One Black. One White*, pg. 133.
- <sup>16</sup> Frank P L Somerville "Plans For New Community Near Roland Park Revealed", *The Sun (1837-1987)*; Oct 28, 1962; ProQuest Historical Newspapers: Baltimore Sun, The (1837-1987), pg. M46
- <sup>17</sup> Frank P L Somerville; Jim Holechek, *Baltimore's Two Cross Keys Villages: One Black. One White*.
- <sup>18</sup> Jim Holechek, *Baltimore's Two Cross Keys Villages: One Black. One White*, pg. 133.
- <sup>19</sup> "Lake Roland Historic District, BA-1274", Maryland Historical Trust Summary.  
<http://mht.maryland.gov/nr/NRDetail.aspx?HDID=1106&CROWD=Towson&COUNTY=Baltimore%20County&MAP=NRMapBA.html&FROM=NRCrowdList.aspx?COUNTY=Baltimore%20County>
- <sup>20</sup> "How City Got Water: An Interesting History Given By Former Mayor ...", *The Sun (1837-1987)*; Oct 10, 1904; ProQuest Historical Newspapers: Baltimore Sun, The (1837-1987), pg. 8
- <sup>21</sup> *The Story of Baltimore's Water Supply*, (City of Baltimore Department of Public Works, Bureau of Water and Waste Water, 1981), pgs. 1-3.
- <sup>22</sup> "Reports of the Joint Standing Committee Upon the Water Question: Report" *The Sun (1837-1986)*; Sep 4, 1855; ProQuest Historical Newspapers: Baltimore Sun, The (1837-1986), pg. 1
- <sup>23</sup> "The Water Question: Report Upon a Supply of Water for the City of Baltimore Examinations" *The Sun (1837-1986)*; Sep 22, 1854; ProQuest Historical Newspapers: Baltimore Sun, The (1837-1986), pg. 1; "Water Commission: Important Report" *The Sun (1837-1986)*; Jun 17, 1857; ProQuest Historical Newspapers: Baltimore Sun, The (1837-1986), pg. 1; "Chiffelle Bio" S.J. Martenet and Co. Inc. History of the Firm, 2009. <http://www.martenet.com/history/Chiffellebio.html>; G. L. Vose and Thomas Doane, "Memoir of Theophilus E. Sickels" Journal of the Association of Engineering Societies, Vol 6. November 1886 – December 1887, (New York: The Board of Managers of the Association of Engineering Societies, n.d.), pg. 233. Accessible as a Google book.
- <sup>24</sup> "Baltimore City Water Supply: The City Water Works--Their Rise And Progress The"
- <sup>25</sup> "Water Commission: Important Report", *The Sun (1837-1986)*; Jun 17, 1857; ProQuest Historical Newspapers: Baltimore Sun, The (1837-1986), pg. 1
- <sup>26</sup> quoted in Louis F. Gore "Baltimore's first public utility", *Baltimore Engineer*, February, 1976: 8-11; pg. 8 and 11.
- <sup>27</sup> Charles J Baker, "Mayor's Message", *The Sun (1837-1986)*; Jan 7, 1862; ProQuest Historical Newspapers: Baltimore Sun, The (1837-1986), pg. 1
- <sup>28</sup> "Local Matters", *The Sun (1837-1986)*; May 15, 1862; ProQuest Historical Newspapers: Baltimore Sun, The (1837-1986), pg. 1
- <sup>29</sup> "Local Matters", *The Sun (1837-1986)*; Feb 13, 1862; ProQuest Historical Newspapers: Baltimore Sun, The (1837-1986), pg. 4
- <sup>30</sup> "The New Water Works--Report of the Chief Engineer"
- <sup>31</sup> "Local Matters", *The Sun (1837-1986)*; Jan 27, 1863; ProQuest Historical Newspapers: Baltimore Sun, The (1837-1986), pg. 1
- <sup>32</sup> "City Affairs Message of Mayor Chapman" *The Sun (1837-1986)*; Jan 13, 1864; ProQuest Historical Newspapers: Baltimore Sun, The (1837-1986), pg. 1
- <sup>33</sup> Gore, pg. 11.
- <sup>34</sup> "How City Got Water: An Interesting History Given By Former Mayor ..."
- <sup>35</sup> Jim Holechek, *Baltimore's Two Cross Keys Villages: One Black. One White*, pg. 133.
- <sup>36</sup> Gustave J. Requardt, "Informal History of Baltimore City Water System," *The Baltimore Engineer*, May 1967: 4-5.
- <sup>37</sup> "Local Matters", *The Sun (1837-1987)*; Jul 30, 1857; ProQuest Historical Newspapers: Baltimore Sun, The (1837-1987), pg. 1
- <sup>38</sup> "Local Mattes", *The Sun (1837-1987)*; Dec 11, 1857; ProQuest Historical Newspapers: Baltimore Sun, The (1837-1987), pg. 1
- <sup>39</sup> Massachusetts Charitable Mechanic Association, *Annals of the Massachusetts Charitable Mechanic Association, 1795-1892*, (Boston: Press of Rockwell and Churchill, 1892), pg. 348.
- <sup>40</sup> "Boston Public Garden" The Cultural Landscape Foundation, <http://tclf.org/landscapes/boston-public-garden>