

A Story Untold: *The Washington Aqueduct Gatekeeper's House*

By Stephanie Spencer



Great Falls Tavern and Lock 20
—Photo by Stephanie Spencer

On a bluff overlooking the Great Falls section of the Chesapeake & Ohio National Historical Park stands an impressive but mysterious masonry structure. Nestled below is a related building with a puzzling, windowless appearance. These stone structures are often unnoticed by the many visitors who pass by on their way toward the historic tavern and Lock 20. The two buildings are the Gatekeeper's house and the gatehouse. They are part of the Washington Aqueduct System and are largely uninterpreted – but their history is fascinating.

Background

The Washington Aqueduct Gatekeeper's House, also known as the Engineer's House (E-House), is located high above the iconic Great Falls Tavern. When standing on the towpath and gazing across the canal prism near Milepost 14.30, the E-House can be found on the hill behind where the comfort station sits. While the bluff it stands on is not an active

visitation area and primarily houses park support structures, the unique red coloration of the E-House's roof can be seen through the trees during winter and early spring.

A historic structure report was completed on the E-House in 2021, providing the C&O Canal National Historical Park with a more in-depth look at the building's history. Since the 1930s, the National Park Service (NPS) has used the area surrounding the E-House to support park operations. The structure stood alone on the hill above the floodplain when it was built in 1875, but presently shares the view with a few other park support structures.

The Washington Aqueduct, along with this sandstone building, was named a National Historic Landmark in 1927. The E-House has been used by the NPS since 1989 for support, including office spaces, storage areas, and a computer server room. Currently, only the server room remains.



Left – A 2022 view of the Washington Aqueduct Gatekeeper's House (E-House); Right – The staircase leading up to the E-House – Photos by Stephanie Spencer



Left and right – E-House architectural details – Photos by Stephanie Spencer



2022: A present day view of the gatehouse – Photo by Stephanie Spencer

The one-and-one-half story asymmetrical stone masonry E-House is just one element of the two masterworks of civil engineering utilizing the Great Falls section of the Potomac River – the C&O Canal and the Washington Aqueduct System.

The Washington Aqueduct System

Composed of a 12-mile-long system of tunnels, bridges, and conduit, the Washington Aqueduct System helps deliver water to the nation's capital and typically runs parallel to the C&O Canal and the river. This complex system was constructed due to the continued growth of the city and the increasing need for larger water capacity than what other systems were able to provide. Freshwater that was impounded and diverted above Great Falls first arrived in Washington, D.C. in 1863.

The United States Army Corps of Engineers (USACE) designed and constructed the system, while the government funded the project. In 1862 President Lincoln reassigned the work from the Department of War to the Department of the Interior. Just five years later in 1867, the project was then transferred back to the Department of War.

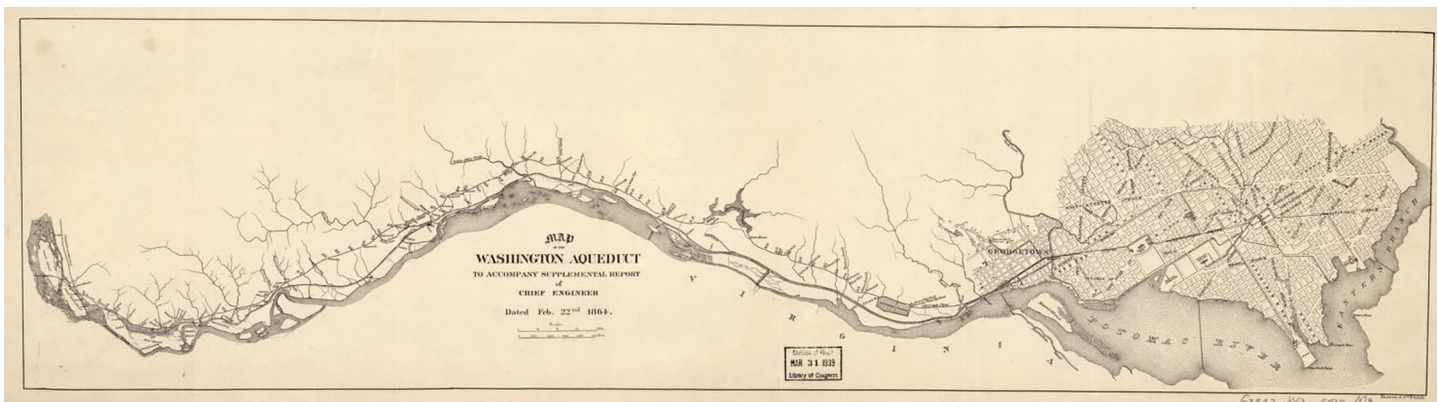
Over the past century, the system has been repaired, expanded, and supplemented but remains in place even today. Designed in 1852 by Lieutenant Montgomery Cunningham Meigs, the system continues to primarily function as originally designed and intended. Out of three proposed

water sources for the capital, the Great Falls portion of the Potomac River was selected.

Meigs' design included a 12-mile-long gravity fed system utilizing a 7-foot diameter brick-lined aqueduct. This length of aqueduct required 11 tunnels, 26 culverts, four bridges, and two reservoirs, and the brick-line conduit system descends 9 inches every 5,000 feet. His design took just under 11 years to complete instead of the originally estimated 3-year timespan, due to delays caused by funding, management issues, and the Civil War. In the 1920s a 12-mile-long concrete conduit was added parallel to the original brick-lined conduit system.



1853: Construction of the gatehouse in progress – Photo C&O Canal NHP, National Park Service



A map of the Washington Aqueduct system – Image C&O Canal NHP, National Park Service

A portion of the work began within the Great Falls area, including the construction of the first tunnel, which was blasted through 1,432 feet of rock and emerged near Angler's Inn. Two permanent structures were also erected within the landscape, to include the gatehouse and the E-House. Both were constructed using sandstone from the Seneca Quarry, where stone had been obtained previously for the building of various structures along the C&O Canal.

In place by 1862, the gatehouse sits just north of the Great Falls Tavern and is made of both stone and slate. This large structure houses the sluice gates that were built to admit and regulate water into the conduit system. While water still flows through the gatehouse, the gates themselves no longer function as water control.

A dam above Great Falls was built to divert water to the gatehouse, and the viewing platform near Lock 20 provides a view of the intake. While USACE maintains and operates the Washington Aqueduct including the gatehouse, they transferred ownership of the E-House to the NPS in 1989 due to it being deemed no longer necessary for the functionality of the aqueduct system.

The E-House, also referred to as the gatekeeper's house, was constructed in 1875 as a home for the gatekeeper, the individual responsible for managing the controls within the gatehouse. Currently, a metal staircase leads from the gatehouse to the E-House but is restricted to authorized personnel use only. During the construction of both structures, stairs in a similar location were likely in place to allow for a quick connection between the two buildings.

The E-House is just one of three houses built along the Washington Aqueduct system as residences for staff. The designs of all three of the Washington Aqueduct houses were based on Meigs' drawings for



1856: Construction in progress of the Washington Aqueduct water intake near the Great Falls Tavern – Photo C&O Canal NHP, National Park Service



A Washington Aqueduct marker located in the Great Falls area – Photo C&O Canal NHP, National Park Service



2022: The Great Falls water supply dam that diverts water to the gatehouse – Photo by Stephanie Spencer

superintendent's lodges in national cemeteries. The Department of War began building such structures in 1871 and, by 1881, had built 55 of them at national cemeteries across the country.

The other two Washington Aqueduct residence houses were built at the Dalecarlia receiving and Georgetown distributing reservoirs. While the house in Georgetown has since been demolished, the Dalecarlia and Great Falls (E-House) structures remain standing.

The reservoirs in Dalecarlia and Georgetown are required to help with the quality of water, due to the concern about the Potomac River's turbidity. The capture of the water at the reservoirs allows for the water to still and drop sediment, while also increasing overall water storage capacity. One reservoir at the Little Falls Branch in Dalecarlia receives the water, while one reservoir northwest of Georgetown distributes the water. Two cast iron mains downstream of the Dalecarlia location delivered the water into D.C. and extended the total length of the Washington Aqueduct System to 18.6 miles.

The Future of the E-House

The E-House is an interesting national historic landmark-contributing structure that adds to the history of the popular Great Falls area, despite not being a part of the C&O Canal system itself. While the interior of the structure has been altered to accommodate office spaces and storage, the structure retains most of its historic integrity and character defining features. The NPS is hoping to conduct some repair work to the building in the near future.

Please remember that the E-House is not open for public visits, and the bluff it stands on is not an active visitation area, due to primarily housing park support structures. If you are on the towpath during the months of minimal leaf and vegetation coverage, you may just catch a glimpse of its red roof peeking through the trees as a reminder of the Washington Aqueduct System.

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Historic depictions of Washington Aqueduct structures – Image C&O Canal NHP, National Park Service