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A HISTORY OF TIBER CREEK
WASHINGTON, D. C.

Prepared for membership into

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By

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SUMMARY

Through the center of Washington, D. C. there flowed a number of years ago a stream known as Tiber Creek or Goose Creek. Late in the eighteenth century this creek made its peaceful way from north of the site of Washington down to the center of the proposed city. Here it forked, part flowing into the Potomac and part into the Anacostia River. This creek was a noted landmark in early Washington.

It was early in the nineteenth century that there began a series of city improvements that changed considerably the aspect of Tiber Creek. First of these was the construction of the Washington Canal. The route of the canal followed very closely the course of lower Tiber Creek. The canal, supplied with water from the Tiber, was for a long time important in Washington commerce. The first bridge across Tiber Creek was built at Pennsylvania Avenue in 1817. This later became the starting point of the sewer.

The construction of Tiber sewer was begun in 1864. It was carried forward bit by bit by various contractors and was finally completed in 1876. The sewer for the most part consisted of a low brick arch of very wide span.

Work on the sewer in recent years has consisted essentially of repairs, replacements, and abandonments which are slowly causing the Tiber to disappear from Washington's intricate sewer system.

A HISTORY OF TIBER CREEK

Few Washingtonians are aware that through the very heart of their native city there once flowed a creek which, in size and beauty, riveled the notable Rock Creek. Not many know that this creek, after a rather varied career, was finally confined ingloriously within the walls of an underground sewer. Perhaps some of the oldest inhabitants can recall the days when it was still a promenant Washington landmark, but none living can remember the stream as it originally was before District engineers began their activities.

To the earliest settlers this stream was known as Goose Creek, although later the name was changed to Tiber. There are several stories told about the manner in which the name was changed. One of these reports that early city commissioners, not liking the commonplace name of Goose Creek, changed it to Tiber, so as to conform with ancient Rome, where the Tiber river flowed around the foot of the hill upon which stood the Roman capitol. This story may or may not be true, but it is known that Goose Creek and Tiber Creek are the same thing. This is verified by many references, among which is a poem written about 1803 by the Irish poet Tom Moore on a visit to Washington:

"In fancy now, beneath the twilight gloom,
Come, let me lead thee o'er the second Rome,
Where tribunes rule, where dusky Davi bow,
And what was Goose Creek once is Tiber now;
This embryo capital, where fancy sees
Squares in morasses, obelisks in trees,
Which second-sighted seers even now adorn
With shrines unbuilt and heroes yet unborn."

The original stream is clearly shown on the old map as having its source in the vicinity of Soldiers' Home, north of Florida Avenue, and being fed by many tribitaries. From this source it flows generally southeast, until it reaches a place near the present intersection of North Capitol Street and New York Avenue. Here it bends south, and follows roughly North Capitol Street as far as "G" Street North, where it again bends and flows generally southwest. At a point directly west of Capitol Hill, the stream seems to fork, part of it flowing east into St. James Creek, while the other part flows west and forms a rather large inlet along the line of Constitution Avenue.

An early map shows the perpendicular height of the source of Tiber Creek above the level of the tide in the Creek to be 236' 7 5/8". This indicates that the velocity of flow, of the upper part of the stream at least, was rather rapid. The lower part of the stream, we know, flowed through marshy tidal flats, and consequently the velocity was small.

It was in the year 1802 that Congress first passed a bill authorizing the construction of the Washington Canal, but it was not until after a delay of more than a score of years that the canal was actually completed. This canal was built along the western branch of the Tiber, following the line of what is now Constitution Avenue, and working its way southwest until it finally flowed into the Anacostia River at the foot of New Jersey Avenue. This canal wiped out the lower part of Tiber Creek, and made it end where it intersected the canal at Third Street and Maine Avenue, S.W.

With the growth of the City of Washington, it became necessary to have means of crossing the stream, and, naturally, bridges were built. The most important of these was at Pennsylvania Avenue, which is described by James F. Duhamel as "a low brick bridge of very wide span and walls at the sides." The shape of this bridge probably was a controlling factor in the design of the arch some years later to cover the creek, since the arch was started at this bridge and built in both directions.

The first section of the old Tiber sewer to be built ran under the Botanical Gardens from the bridge at Penna. Avenue and Second Street, N.W. to Third Street and Maine Avenue, S.W., where it intersected the canal. The sewer was an elliptical brick arch of 30' span and 7' 6" rise, with side walls of stone masonry six feet thick, the whole resting on a flooring of 6" planks on 12"x12" transverse sills. This section was started in 1864 and completed in 1869. The latter part of the work was under the direction of General N. Michler, then Chief of Engineers, U. S. Army.

A After this nothing more was done until 1872 when a contract was let to Joseph Williams and Lester A. Bartlett to arch the creek from the point where the previous section stopped to the south side of Maryland Avenue. At the same time, these contractors were directed to arch the creek north from the bridge at Pennsylvania Avenue to North Capitol and "E" Streets.

It is interesting to note that for this section, the floor of the completed sewer was about 9" above the original

bed of the stream. In general, a condition similar to this existed throughout all of the lower sewer as its course followed, where ever possible, the course of the stream, and a minimum of excavating had been done.

Between the years 1873 and 1876 several more sections were constructed. Frequently the work was being done in two or more places simultaneously. The North Capitol Street section was completed late in 1875, and was constructed by Bartlett and Williams. It consisted of a 20' span, whose section was similar to the older 30' span. It ran under North Capitol Street from "E" Street, where it emptied into the 30' tube, to Hanover Place. At this point the sewer contracted to a previously constructed 13' span which ran diagonally to "O" and First Streets, N.W., where it subdiveded again into two 9' diameter semicircular pipes, which made their individual ways northwest and north to Boundary Street (Florida Avenue).

At "E" Street, North, there also emptied into the '30' span a sewer of 9' 6" span, which went under what is now Union Station Plaza and out"F" Street, N.E., where it was fed by numerous small sewers. This sewer was built by Thompkins and Ruckel, and was completed late in 1874.

Until the year 1874, Tiber sewer emptied into the old Washington Canal at Third and Maine Avenue, S.W. But with the decision to fill the canal, it became necessary to continue the sewer. Gallaher, Loane, and Co. received the contract to construct the sewer from Maryland Avenue and Third Street to "G" and South Capitol Streets. The sewer was a 30' span, and ran down Canal Street and South Capitol parallel to and beside the old canal. This section emptied into the newly constructed

James Creek Canal at "G" Street. The last section to be put in was the connecting link through the old canal at Third Street.

A peculiar feature of the sewer was the lack of grade in the lower section. The floor of this part was at a uniform reference of 3.08 feet below mean high tide through its entire length. It was built this way not only because of the difficulty of constructing a graded sewer over such low, level ground, but also with the object in mind of keeping the sewer free from debris. The Theory was this: As the tide comes up, allow it to raise the level of water in the sewer. When it reaches its peak, close gates at the end of the sewer, thus trapping water in it. When the tide is low, the gates should be opened, allowing the outrush of water to carry with it all the debris collected in the sewer.

This was the system used. The gate was located at "G" and South Capitol Streets, at the head of St. James Creek Canal, and the water backed up in the sewer as far as Pennsylvania Avenue and Second Street, a total distance of about one mile. This plan was in operation for a number of years, although its success was questionable.

LATER HISTORY

Tiber Sewer was used from the time it was completed in 1876 until 1902 without suffering any major changes. After that year, however, it's history became a story of repairs, replacements, and abandonments. The first of these occured in 1902, when it was neatly cut in half at a point between "C" and "D" Streets and New Jersey Avenue, and First Street, N.W. by a more modern sewer. This sewer took the water from the

upper Tiber and conducted it under the western edge of the Capitol grounds down Delaware Avenue, and eventually to the Sewage Pumping Station at the foot of New Jersey Avenue. The lower section of Tiber Sewer was left in place to carry the water from numerous small sewers entering into it below "C" Street. The Second of these was the abandonment of the 9' 6" sewer that flowed across "F" Street into northeast Washington. This was replaced by the modern Union Station trunk.

It was in 1910 that the job of relining the sewer with concrete was begun. This work has been going on intermittantly ever since, the most recent job being completed in 1935. In 1910 the necessity for relining was a direct result of the construction of Union Station Plaza. In order to raise the ground level sufficiently to form the Plaza, a fill of some 30' was required. This great quantity of earth was dropped directly on old Tiber Arch. The large load was more than the arch could stand, and it began to crack, thus making immediate the necessity for strengthening and relining the old sewer. This was done by constructing within the sewer a concrete shell two or more feet thick. The concrete was reinforced with 5" railroad steel bent to fit the top of the sewer and placed 24" apart. This reduced the span of the sewer from 30' to 24', and the height from 10' 6" to 9.62'. The relining was started at the point where the 30' span ended at "E" and North Capitol Streets, and extended down the span a distance of 107'.

In 1911 the relining was continued after the same fashion as that of 1910 with the exception that a concrete floor 1' thick was added. From 1926, and again 1932, a little more

relining was done, bringing the 24' section to the point where the 1902 sewer intercepted Tiber sewer near "C" Street.

The lower section of the sewer has been treated in a different manner. In this part, only the floor has been replaced, the walls being left as they were. Between First and Second Streets on "B" Street, N.W. the job of constructing the floor was started. The floor was of concrete one foot thick, having a 6"x24" cunette running down the center. By January 20, 1917 the work had been completed as far as Maryland Avenue and Third Street.

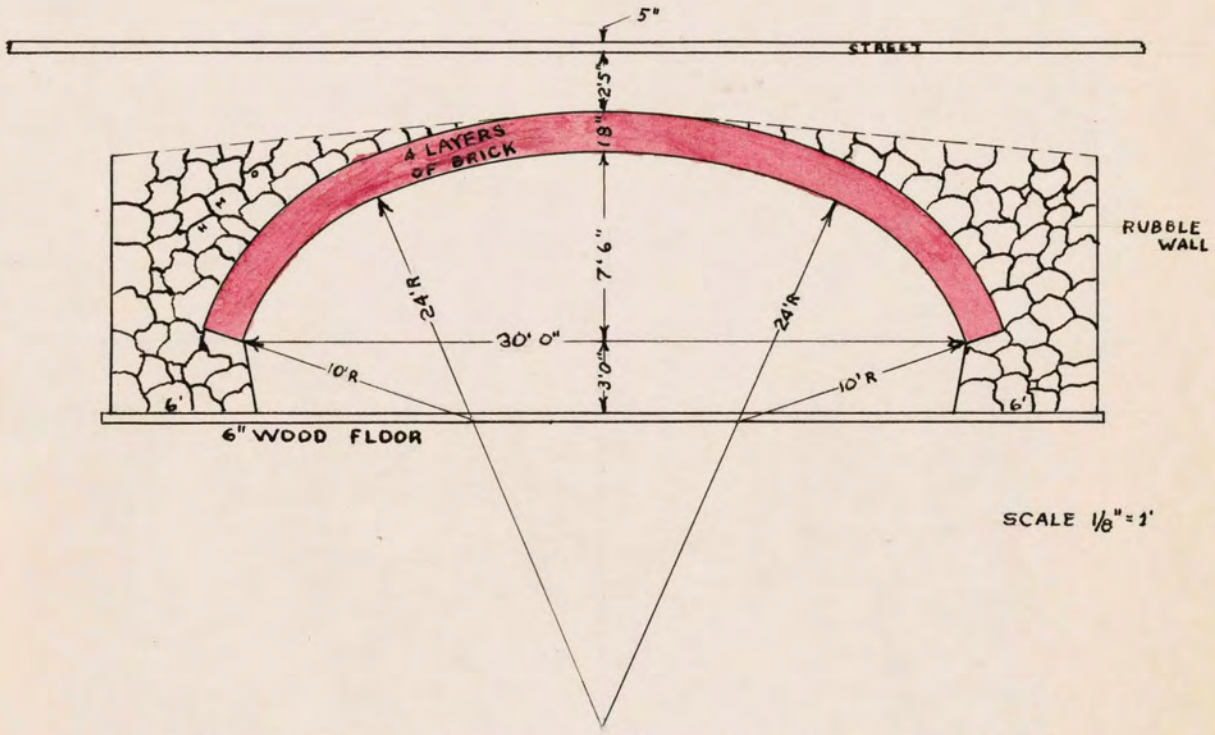
B By 1919 the floor had been laid from Maryland Avenue and Third Street as far as Canal and Second Streets; by 1920 as far as Canal and First Streets; and by 1924 as far as "E" Street and South Capitol. Because the floor of this part of the sewer was flat, as previously described, it was impossible to secure a continuous grading. Therefore the invert was designed with the grade of the cunette following from both directions to connections placed at intervals along the line which discharge into the deep sewers and intercepts of the Sewage Disposal System. This section of the sewer down Canal Street is paralleled by the "B" Street and New Jersey Avenue Trunk which is at a lower level. The tap-offs are 24" in diameter, and occur at intervals of about 400 feet.

Farther down, at "E" and South Capitol Streets, old Tiber Sewer has been completely intercepted and connected to the "B" Street and New Jersey Avenue Trunk. This construction was completed early in 1924. The New Jersey Trunk now conducts the water from Tiber sewer down New Jersey Avenue to the pumping station.

Perhaps the most recent construction work to be done on the sewer is that which was completed January 21, 1935. It it a short section of small sewer constructed inside the existing Tiber arch under Pennsylvania.Avenue. This sewer is 33.5' long and consists of a concrete semicircular arch of 9' diameter running down the center of old Tiber sewer. The old sewer was then backfilled. This makes a much stronger structure under the Pennsylvania Avenue crossing where it is needed.

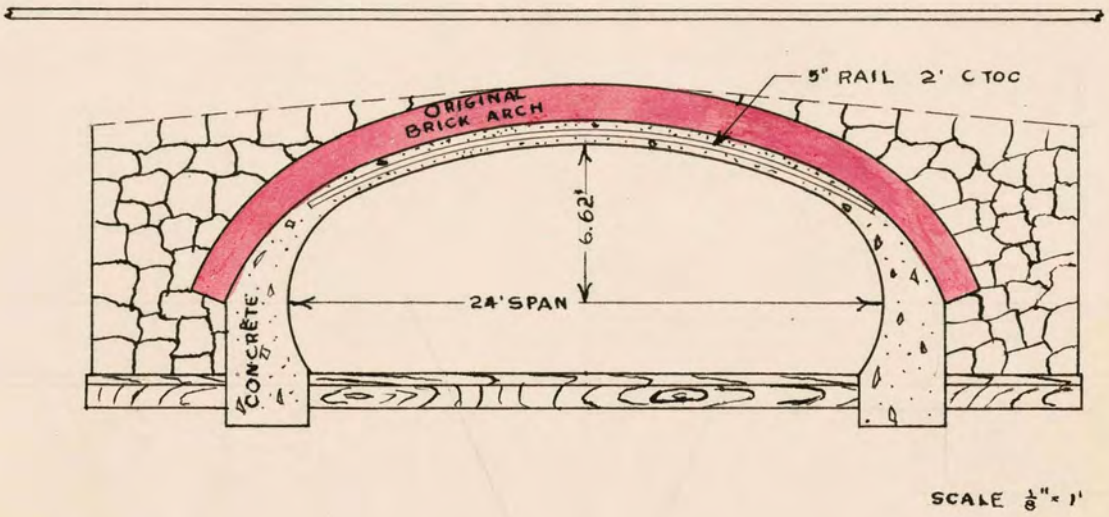
Tiber sewer, as it exists now, draining some 2,000 acres of metropolitan Washington consists essentially of two branches. The first runs down North Capitol Street from New York Avenue to "E" Street, where it is joined by the Union Station trunk. It then turns diagonally into "C" Street, where it is intercepted by a sewer which conducts the water under the Capitol grounds, and to the pumping station. The other part starts at "B" and Second Streets, N.W. and, fed by many small sewers, runs under the Botanical Gardens and down Canal Street, where it is tapped off and intercepted by the New Jersey trunk which takes the water to the pumping station.

The increasing demands on the sewer system of Washington are slowly making obselete old Tiber Sewer, which was originally the backbone of the system. It is probable that before long its value will have become practically negligible.

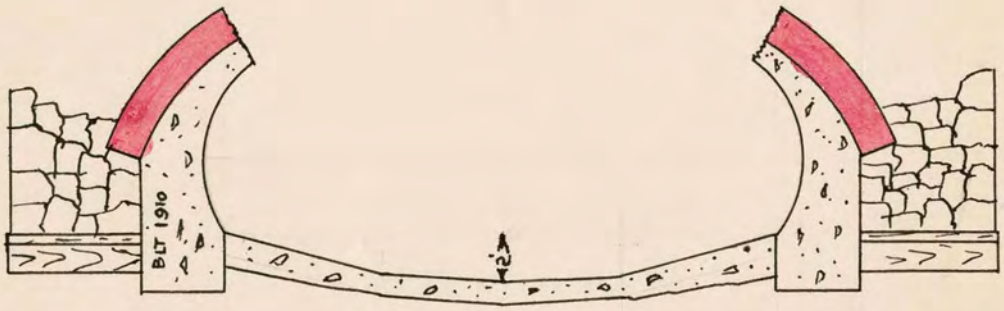


Typical cross-section of the old 30 foot span of Tiber sewer. At Virginia Avenue and South Capitol Street this arch was crossed by the tracks of the Penn. Railroad which subjected it to a considerable live loadand necessitated additional masonry. At this point there was only eight inches of earth separating the railroad tracks from the top of the sewer.

This type of construction was used throughout the sewer With only minor changes.



Cross-section of Tiber sewer showing the first section of the relining. This part of the work started at E and North Capitol Streets and extended southwest 107 linear feet. The work was completed on July 26, 1910.



Showing the construction of the floor in the section shown above and also the manner of relining of the sewer as far as the intercepting sewer near C Street.

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