The City Engineering Department specified that the foundations for the bridge should consist of fir piles which would be driven to firm hard stratum. Up to the line of the arch, each pier was to be constructed as a monolith. Although the arches were reinforced, it was specified that they should also be constructed as a monolith. It is probable that like many of the early reinforced concrete arches, the metal acted more as a binding element than as reinforcing.

The Arboretum Sewer Trestle is a significant example of an early reinforced concrete arch within the State. Like many of the earliest examples, the Sewer Trestle consists of short spanned arches. The initial experiments in concrete reinforcing were primarily in park bridge; like the earliest reinforced concrete arches, the Sewer Trestle is an ornamental structure which was not designed to carry exceedingly heavy loads.
In 1910, Mr. R.H. Thomson, Seattle City Engineer, contracted the building of a reinforced concrete arch viaduct to carry a newly constructed sewer line across low ground in Washington Park. A 180 foot structure consisting of six 30 foot arches was constructed. The concrete surfacing was disguised with brick facing imitating the rough texture, and assuming the grandeur of many of the old masonry arches. Curvilinear iron railings with concrete posts edged the 6.2 foot wide deck which carried the sewer line. One individual observed in a letter to the City Engineering Department in 1912: "The bridge is not an 'apartenance of the sewer. It is a piece of ornamental bridge architecture designed elaborately and is a very much greater thing than the sewer itself, in every way."

The bridge was designed by the newly formed architectural firm of Wilcox and Sayward, both of whom had moved to Seattle from the east coast where they had been educated and had begun their architectural practice. Mr. Sayward had received his initial training in the New York office of McKim, Mead, and White.