

**HISTORICAL RESOURCE REVIEW OF THE  
MT. VERNON L&N ELEVATED WATER STORAGE TANK  
IN JEFFERSON COUNTY, ILLINOIS**

**Prepared for & Funded by:**

**City of Mt. Vernon  
1100 Main Street  
Mt. Vernon, Illinois 62864**

**Prepared by:**

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## Introduction

The Public Service Archaeology & Architecture Program of the University of Illinois at Urbana-Champaign conducted research to partially fulfill a Memorandum of Agreement (SHPO Log #01110718) among the City of Mt. Vernon, the Illinois Environmental Protection Agency, and the Illinois State Historic Preservation Officer regarding demolition and replacement of the L&N Elevated Water Storage Tank in Mt. Vernon, Illinois. The investigations included: preparation of an historic narrative of the Mt. Vernon water system and the role of the L&N Elevated Water Storage Tank in that system; photographic documentation and description of the L&N Elevated Water Storage Tank; and compilation of existing drawings and photographs. This report provides a context for understanding the Mount Vernon Water Tower alongside the L & N Reservoir (Figure 1).

## Historical Overview

Public water-supply systems, employing reservoirs, aqueducts, and gravity, had been developed and utilized by such early and far-flung civilizations as pre-Christian Rome and the Aztecs of Meso-America. Early public water-supply works were naturally limited by topographical conditions and were dependent upon the principles and effects of gravity. The introduction of artificial or mechanical pumping methods allowed for the development of three general schemes designed to solve the problem of water distribution: the “Gravity”, the “Reservoir”, and the “Direct” Methods. The Reservoir system, under many designs, involves the mechanical elevation of water from a lower to a higher level, and its storage in basins or reservoirs of sufficient size and elevation to meet all requirements. The Reservoir system ranges in scope from designs for small tanks elevated upon supporting columns to immense reservoirs for the water supply of great cities. In the general scheme of a water-supply system, the elevated reservoir serves a dual purpose – providing for a surplus supply to be utilized as required, as well as permitting a temporary suspension of the mechanical operations of the plant. In large cities, reservoirs are developed in topographically elevated regions. In the rural Midwest, small-town reservoirs, or water tanks, are first built on elevated land if available, and secondly, raised upon a structure of sufficient height to create adequate pressure required to satisfy community needs (Hathi Trust Digital Library 2021; Minnesota Historical Society 2021; South Dakota Historic Preservation Office 2021).

Municipal water systems were uncommon in nineteenth century United States outside of densely populated urban centers. New York City had created localized reservoir and pumping systems by the 1770s, Philadelphia pumped water from the Schuylkill River into elevated wood storage tanks by 1799, and Chicago began pumping Lake Michigan water into elevated wooden tanks by 1842. The oldest complete water system in the United States is believed to have been installed in Bethlehem, Pennsylvania between 1754 and 1761 (Hathi Trust Digital Library 2021). For much of the nineteenth century, rural and small-town American communities obtained most of their water from private wells and other local water sources such as lakes and rivers. By the 1880s, concerns over the supply and quality of water for drinking, washing, and fire-fighting, led to the development of municipal water storage systems across the country. Many communities were prompted to install municipal water systems after rampant and destructive fires. Fire insurance companies would not insure businesses in communities without sufficient fire protection (United States Department of the Interior – National Park Service {USDI–NPS} 2021). Early elevated water storage tanks were usually constructed of iron-girded wood with flat bottoms and conical tops. When filled with water, the wooden tanks, or reservoirs, would initially leak. As the wood became saturated, it would swell and effectively seal in the water. Such storage tanks were, and are still, common on rooftops in dense urban settings. Water towers were often constructed of wood, stone, or masonry brick. Several notable examples of early composite elevated water storage tanks are found in Central Illinois. The water tower in Havana, Illinois, constructed in 1889, was designed to create adequate water pressure through gravity flow. It was

constructed with a limestone foundation, brick and steel walls, and a metal roof. The 50,000-gallon storage tank was made of steel. The 1887 Paxton Water Tower in Ford County, the 1891 Benson Water Tower in Woodford County, and the 1896 Ransom Water Tower in LaSalle County all used masonry brick for the towers and wood for the storage tanks (Minnesota Historical Society 2021; South Dakota Historic Preservation Office 2021; USDI-NPS 2021).

As municipal water systems utilizing elevated storage tanks proliferated and demands became greater, engineers and builders rapidly transitioned to more cost-effective metallic reservoirs and towers constructed with riveted plates and members of iron or steel. Iron was universally employed until about 1890 but with improved manufacturing processes, iron was supplanted by flexible structural steel as the most suitable material for metallic reservoirs and towers. By 1897, there were more than 3,000 complete municipal water-supply plants in the United States. About one-third of these were equipped with some form of elevated metallic storage tanks, or reservoirs, more than half of which were constructed after 1890. One of the first and best examples of a modern, elevated, riveted-steel tower and tank, supported by 100-foot Z-bar columns, stiffened with I-beam ties and diagonal tie-rods, was constructed in 1898 in Jacksonville, Florida (Hathi Trust Digital Library 2021). The basic riveted-steel construction design developed for water towers and storage tanks in the 1890s, and exemplified by the 1898 Jacksonville water tower, changed little over the course of the next fifty years. The most typical water tower erected in towns across the American Midwest in the first half of the twentieth century had a 50,000-gallon capacity storage tank atop a 100-foot-high tower, or trestle, and was of riveted-steel construction (Minnesota Historical Society 2021; South Dakota Historic Preservation Office 2021).

Since water towers are basically elevated water-containment tanks, boilermakers traditionally constructed the storage tanks, ironworkers constructed structural components such as beams, struts, and girders, and pipe fitters assembled components that conveyed fluids in motion. By the middle of the twentieth century, and throughout the boom years of water tower construction from 1946 to 1980, two large companies dominated the industry. Between them, the Chicago Bridge and Iron Company (now CBI, Inc.) and the Pittsburg-Des Moines Steel Company (now PDM, Inc.) erected between eight and eleven thousand water towers in the Midwest and Plains regions of the United States. Both large companies worked on all types of storage tanks and vessels, and water towers were a small part of their businesses (Minnesota Historical Society 2021; South Dakota Historic Preservation Office 2021).

Riveted-steel construction remained the standard for water towers until the 1950s, so much so that a tower built in Minnesota in the 1950s might be nearly identical to a tower built in the 1890s in Iowa. Industry leaders, however, were sensitive to criticisms that too many water towers looked monotonously utilitarian. In 1931, Chicago Bridge & Iron Works sponsored a competition to develop designs that would illustrate viable improvements in the appearance of elevated steel tanks and their supporting structures (Chicago Bridge & Iron Works, 1931). While many of the submissions represented aesthetic innovations, the most significant change came about in the 1950s with the introduction and widespread use of welding. Weld technology required many changes in construction techniques and expertise, but also made possible expanded forms and designs. The Torospheric Design became popular in the 1950s in populated areas requiring a high-capacity water-storage system, and featured multi-columned towers supporting high-capacity tanks, as well as access ladders, catwalks, and handrails. The 1960s saw the introduction of Pedespheres, or Single-Pedestal design to replace the traditional lattice support of riveted steel. This the most common type of water tower used today to replace aging riveted-steel tanks and towers. The Hydra-Pillar, introduced in 1962, features a large-diameter, single-enclosed shaft that has become popular for municipal water works because it is considered to be low-maintenance (Minnesota Historical Society 2021; South Dakota Historic Preservation Office 2021).

## History and Development of the Mount Vernon Water Work

The development of water works in Mount Vernon is directly tied to the development of rail transportation in southern Illinois. When the Illinois Central Railroad by-passed Mount Vernon in the early-1850s, city leaders organized the Mount Vernon Railroad Company to get a railroad built west to Ashley, Illinois, which would connect Mount Vernon to the Illinois Central line. The first contract was granted to Vanduzer, Smith & Company which began construction of the roadbed in 1858 but dissolved in bankruptcy and scandal a year later. A new charter was procured in 1861 for the Ashley & Mount Vernon Railroad, which met a similar demise. Stockholders of the Mount Vernon Railroad Company agreed in 1868 to organize an Ashley & St. Louis Company, resolving to get a through line to St. Louis. In March 1869, the St. Louis & Southeastern Railway Company, successor to the Mount Vernon Railroad Company, was chartered to build a railroad from St. Louis, through Mount Vernon, to Shawneetown, Illinois. Dr. W. Duff Green, owner of Green Lawn Springs health resort in Mount Vernon, procured the contract for principals of the St. Louis and Southeastern Railway Company, General James H. Wilson and General E. F. Winslow, on the promise that they would build a depot opposite the Jefferson County courthouse (Internet Archive 2021a, 212-214; Internet Archive 2021b, 99). Construction of the St. Louis & Southeastern from East St. Louis to Mount Vernon, using the planned 1858 roadbed between Mount Vernon and Ashley, was completed in November 1870 (Southern Illinois Railroads 2021). In February 1871, the St. Louis and Southeastern Railway Company and the Evansville and Southern Illinois Railroad Company were consolidated as the St. Louis and Southeastern Railroad Company (SL&SE). The SL&SE completed the St. Louis to Evansville rail line, with the construction of the Wabash River Bridge, in November 1871 (Southern Illinois Railroads 2021). The St. Louis & Southeastern then acquired the Evansville, Henderson & Nashville Railroad (E H & N) in 1872 enabling it to haul freight from East St. Louis to Nashville (Klein 2003, 111). Having successfully secured a through line from Nashville to East St. Louis, Wilson and Winslow of the SL&SE then secured for Mount Vernon the SL&SE machine shops, that required a dependable source of clean water to operate effectively, but that would eventually bring employment and wealth to the community for years to come (Jefferson County Historical Society 1950, 2; Internet Archive 2021a, 214-216; Internet Archive 2021b, 99).

Prior to 1870, the only water supply available to residents of Mount Vernon was underground water from cisterns, wells, shallow streams, and a number of springs, the most well-known being Dr. Green's privately-owned Green Lawn Springs. Some individual residential properties and businesses in town dug wells, and wells were located at each corner of the county courthouse square for firefighting (bucket brigade) purposes. The need for a reliable water source was underscored when the courthouse burned to the ground in 1869 (Internet Archive 2021a, 342). But, as described by Wall (1909), the underground water at Mount Vernon, and in many of the surrounding areas, "is somewhat salty...from the decomposition of sulphate of iron contained in the coal shale. As the coal seams are near the surface in many places, wells frequently contain these salts in quantities sufficient to ruin the water for household purposes. As a result, water issuing from these springs generally have a high mineral content and are used more medicinally than as a source of household water (Internet Archive 2021b, 43). In 1872 the St. Louis and Southeastern Railroad Company installed the original Mount Vernon waterworks to supply its machine shops with dependable and clean surface water. A small reservoir with a 10-million-gallon capacity was formed by building a dam across a small ravine just west of the city limits, with the dam and a raised embankment along the northeast edge serving as the roadbed for the main SL&SE rail line. The company built their own pump station and pumped water from the reservoir east to the machine shops located along the railroad right-of-way. The original water main from the reservoir was a four-inch wood pipe wrapped with treated paper and a steel band. The SL&SE also built two large wooden water tanks, each holding 60,000 gallons of water. The tanks were set on frameworks 15 to 20 feet above ground along the main right-of-way, one on the south side of the right-of-way near Jax Coal Yard, the other about 150 feet east of the 10<sup>th</sup> Street crossing (Jefferson County Historical Society 1950, 2; Jefferson County Historical Society n.d.). On 27

May 1874, calamity struck when the machine shops of the St. Louis & Southeastern Railroad Company were destroyed in a fire. The effects of the loss of the machine shops were substantial and the St. Louis & Southeastern Railroad Company soon went into receivership (Klein 2003, 153). The machine shops were later re-built by the Louisville & Nashville Railroad.

The St. Louis and Southeastern Railway Company with its route from St. Louis to Evansville was sold in a foreclosure auction in 1880 to a group of bondholders including William Whitehouse and Charles Opdyke. The bondholders conveyed the railroad back to the successor company to the SL&SE, the South East & St. Louis Railroad Company, which, on 27 January 1881, leased it to the Louisville and Nashville Railroad Company (L&N) for 49 years. The L&N did not become full owner of the railroad until 1936, but it did make full use of existing facilities at Mount Vernon, including the 10-acre reservoir, the water mains, and the two wooden elevated water tanks. The SL&SE machine shops that burned in 1874 were re-built by the Louisville & Nashville Railroad after it acquired the lease for the right-of-way property in 1881. In 1889 L&N moved their car and locomotive machine shop operations to Howell, Indiana, leaving Mount Vernon without a major source of revenue. To fill the void, in 1890 the Mount Vernon Car Manufacturing Company was established and leased the shop buildings from the L&N. The Mount Vernon Car Manufacturing Company manufactured and repaired every conceivable type of rail cars and car parts, and on average provided employment for about 800 local workers. In the 1890s the L&N built a depot and a hotel downtown, and operated passenger trains in both directions on a daily basis. Mount Vernon was an overnight point and engines were turned around on a “turn table” located in the northwest corner of the rail yards. The company also made use of Mount Vernon’s one productive coal mine which supplied fuel for local consumption as well as for engines on the Louisville & Nashville Railroad (Jefferson County Historical Society 1955; Library of Congress 1894, 1897; Southern Illinois Railroads 2021; Internet Archive 2021b, 215-217).

The lease of the shop facilities from the L&N included permission to access the 10-acre reservoir for local consumption and for operating the machine shops. The impounded water in the 10-acre SL&SE reservoir, replenished by rainfall, soon proved inadequate for the machine shops, prompting the Car Company to purchase from the L&N a 20-acre site on the north side of the L&N track embankment to construct a larger reservoir. The next year, in 1891, a progressive group of Mount Vernon businessmen organized the Mount Vernon Water Works Company and purchased the 20-acre reservoir site from the Mount Vernon Car Manufacturing Company in order to provide a reliable source of water for domestic consumption and fire protection. The new Water Works company built an earthen dam, 200 feet long, a quarter mile east of the existing reservoir, and created an impoundment of nearly 20-acres of surface water, with a minimum depth of 17 feet. Connected by a 14-inch pipe, the joined reservoirs provided a combined storage capacity of approximately 50 million gallons of water, pumped directly into the water mains from a substantial brick pump station. The first Mount Vernon Water Works was operational in 1893 (Jefferson County Historical Society 1950, 3). A report from the Mount Vernon Water Works Company stated: “There are nearly seven miles of mains distributing water to all parts of the city. The water is pronounced superior to that obtained from cisterns and wells and has come into general use for all purposes in a very large number of our homes and is used by factories, mills, and laundry and printing houses. The supply is equal to the probable demands of the city for many years to come” (Jefferson County Historical Society 1950, 4). By 1896 the “supply equal to probable demands” claim made in 1893 proved to be incorrect, and a low concrete dam was built across Casey Fork Creek on Tolle Road north of town. A pump station was built on the creek bank and water was pumped through a six-inch pipe from the creek station to the reservoir, theoretically tripling the amount of available surface water (Jefferson County Historical Society 1950, 4).

In October 1900, the City of Mount Vernon purchased the Water Works and added capacity to the pumping station. Claims were again made that “The Water Works of the City of Mount Vernon are supplying all factories, each of four railroads, 45 fire hydrants, and over 380 private taps”, but the city soon

found itself in arrears and could not meet its payments. The Water Works was auctioned in May 1902 to the newly formed Citizens Gas, Electric and Heating Company of Mount Vernon, which incorporated the Mount Vernon Water Works Company and the Mount Vernon Electric Company. The six-inch transmission line from the Casey Creek pumping station to the reservoir system was replaced with a 12-inch cast iron pipe. At the reservoirs, a new brick pumping station was built with two 80 horsepower boilers and two million-gallon pumps operating on a direct pressure system, discharging directly into the water mains. As the demand for water increased the mains were extended haphazardly without regard for adequate sizes necessary to accommodate future growth (Internet Archive 2021b, 217-218). By 1905, however, the reservoir system was severely depleted, and Casey Creek was practically dry. Water was hauled to Mount Vernon by L&N Railroad tank cars for the first of several times in the city's history. Another reservoir, now Jaycee Lake, was built on a tributary of Casey Fork Creek north of Mount Vernon, with a capacity of 150 million gallons, tripling the amount of accessible surface water. In his description of the state of Mount Vernon's public utilities, Wall (1909) stated: "the capacity of the water works is four million gallons per day, with a reservoir capacity of 390 million gallons". Utilities furnished by Citizens Gas, Electric and Heating Company included city water for fire protection and domestic and manufacturing purposes, as well as central station hot water heating for residences, churches, clubs, offices and stores (Internet Archive 2021b, 217-218).

In 1910 Citizens Gas, Electric and Heating became a subsidiary of Henry L. Doherty Company of New York. By that time, incrustations due to mineral deposits from untreated water prompted Citizens Gas, Electric and Heating to contract with the National Main Cleaning Company to clean the water distribution system. Plans for improving the system were submitted for State Water Survey approval and an inspection was made by that department in October 1912. Based on the findings of the inspection, plans were implemented to install a new 1.5 million gallon per day treatment plant at the L&N reservoir. Prior to that time water had not been treated in any way but went straight from the reservoirs to the water system. The treatment plant included chemical coagulation with alum and lime, settling ponds, rapid sand filtration, chlorination with calcium hypochlorite, clear-well storage, electric centrifugal pumps, and an elevated storage tank. No records documenting the construction of the treatment plant and the elevated storage tank have been found, but on the iron hatch on the base of the uptake column of the L&N water tower are the embossed words "Chicago Bridge & Iron Works Builders". The new treatment plant was placed into operation on 13 April 1913 (Jefferson County Historical Society 1950, 5-6).

The Southern Illinois Power and Light Company purchased the Water Works from Citizen's Gas, Electric and Heating in 1919, and operated it until about 1946. The Creek Pumping station was re-built in 1923 but, by 1925, the supply of impounded water became exhausted and again water was hauled in by rail until the capacity of Reservoir 2 was substantially increased by raising the level of the dam. A major problem was that water from Reservoir 2 had to be pumped to the L&N reservoir and elevated storage tank before it could be pumped from that pumping station into the mains. Demand continued to exceed available supply and following drought conditions in 1940 and 1941 water was once again hauled in by rail. Continuing shortages occurred in 1944 and 1945, and although it was difficult to find tank cars during the war, the U. S. government released 100 tank cars to relieve conditions at Mount Vernon. A total of 2,113 tank carloads of water was hauled from Evansville, Indiana by the L&N Railroad and an additional 640 tank-loads were brought in by the Southern Railroad and dumped into Casey Creek. More improvements and upgrades were made, and in 1948 another impoundment, Miller Lake, was constructed on Casey Fork Creek north of and feeding into Reservoir 2, now Jaycee Lake. Miller Lake was named for Joseph Miller, engineer for the Illinois Commerce Commission, who helped in getting the reservoir built (Jefferson County Historical Society 1950, 8-9).

In December 1946, Illinois Cities Water Company purchased Mount Vernon Water Works and began plans to bring the system into compliance with Commerce Commission standards, including larger main sizes and main feeder loops in the north and east sides of the city. Between 1913 and 1949 the customer base of the Mount Vernon Water Works had increased from 1500 to nearly 5,000 customers without any increases in water treatment capacity. At the end of 1949, the Illinois Cities Water Company enlarged and made improvements to the 1913 treatment plant that included a new chemical storage building, new and upgraded treatment equipment, and an increased capacity of 2.5 million gallons per day. The City of Mount Vernon obtained access to a new and abundant water source south of the city when the Rend Lake Reservoir was completed in the late 1960s, and the Rend Lake Conservancy District implemented the Inter-City Water System in 1972. Rend Lake, the raw water supply for Inter-City Water, is the second largest man-made lake in Illinois with 18,700 acres of surface area and 162 miles of shoreline. An additional 21,000 acres of protected land surrounding the lake is managed by three government entities: Rend Lake Conservancy District, the U. S. Army Corps of Engineers, and the Illinois Department of Natural Resources, all of which were instrumental in the construction of the lake (City of Mount Vernon 2021a; Rend Lake Conservancy District 2021). The Rend Lake Intercity Water System was jointly funded by the U. S. Departments of Housing and Urban Development (HUD) and the Economic Development Administration (EDA). The system was designed to serve scores of southern Illinois communities through a network of bulk water transmission lines emanating from a single treatment plant located on Rend Lake (Google Books 2021). The Mount Vernon Public Utilities Department summarizes the operation of the current water system on the City of Mount Vernon website:

The Public Utilities Department is responsible for the maintenance of the water distribution and sanitary sewer systems within the City of Mount Vernon. The water distribution system has over 185 miles of water mains and includes three elevated water towers, one ground storage tank, 7000 water meters and 1300 fire hydrants. The Public Utilities Department works with the Environmental Protection Agency to provide high water quality and works to maintain high water distribution standards. Mt. Vernon water is delivered from Rend Lake Conservancy District. The source of water for the City of Mount Vernon is purchased surface water from Rend Lake Inter-City Water System (City of Mt. Vernon 2021b).

In 2018 the City of Mount Vernon adopted a Five-Year Public Water Supply Revitalization Project Plan. The Plan includes replacing aging components of the water system, such as cast-iron water mains and water meters, refurbishing or replacing storage tanks, upgrading pump stations, and modernizing control and monitoring equipment. The Plan calls for renovating two water towers and replacing a third – the L&N Water Tower, constructed in circa 1913-1914. Noting that it houses the telemetry for all the pumps in the system, and is the main source pushing water to the Eagle Court ground tank, the L&N tower and storage tank, the Plan identifies the L&N elevated storage tank as obsolete due to its age, size and condition. The L&N Water Tower is to be replaced with a new, minimum 500,000-gallon elevated tank to increase the storage capacity in the system (City of Mount Vernon 2021a).

### **The L&N Elevated Water Storage Tank History**

The L&N Elevated Water Storage Tank, commonly known as the L&N Water Tower, is located at 1918 Waterworks Road, just north of the intersection of 20<sup>th</sup> Street and Waterworks Road, on the west side of Mount Vernon, Illinois. The tower and tank were constructed in 1914 by Chicago Bridge & Iron Works in conjunction with the installation of Mount Vernon's first water treatment plant at the same location, adjacent to the L&N Reservoir. The reservoir, the treatment plant, and the water tower were the first of their kinds constructed for the City of Mount Vernon (Figure 2). Historically, as the city and its waterworks

system expanded, surface water from subsequently constructed reservoirs was pumped to the L&N water tower and water treatment plant, then distributed by the pump station into the water mains for distribution. In 1951 the Opdyke Water Tower, with a storage capacity of 500,000 gallons, was constructed on the City's east side, and water was fed to it from the L&N Water Tower, treatment plant, and pumping station. Since the implementation of the Rend Lake Inter-City Water System in 1972, finished water is now pumped from the treatment plant on Rend Lake to the Opdyke Tank for distribution to the L&N Tank and the two other storage tanks in the system (City of Mount Vernon 2021a). The L&N Water Tower is a "Tin Man", of riveted-steel construction, a type of elevated storage tank that was commonly constructed in towns across the American Midwest in the first half of the twentieth century. Water storage is a key component in all Public Water Supplies and is required by Federal and State regulations. The L&N Tank has a storage capacity of 150,000 gallons with an overflow height of approximately 150 feet above ground surface. The L&N Water Tower tank houses the telemetry that operates the pumps at the Rend Lake Pump Station. Furthermore, the location of the L&N Water Tower has been identified as a key location for maintaining pressure on the north side of the Mount Vernon system and is networked into the distribution system as the main tank pushing water toward the Eagle Court Ground Storage Tank (City of Mount Vernon 2021a). However, due to its age, capacity, and condition, the L&N elevated storage tank has been determined to be obsolete. On 5 April 2021, a Memorandum of Agreement among the City of Mount Vernon, the Illinois Environmental Protection Agency, and the Illinois State Historic Preservation Officer, regarding demolition and replacement of the L&N Elevated Water Storage Tank, was approved.

The L&N Water Tower was constructed in conjunction with the installation of Mount Vernon's first water treatment plant adjacent to the existing L&N Reservoir, in 1913-1914. Despite numerous inquiries made to the City of Mount Vernon, Public Utilities Department, the Jefferson County Historical Society, the C. E. Brehm Public Library in Mount Vernon, and the Mount Vernon *Morning Sentinel*, no records documenting the construction of the water treatment plant and the water tower have been found, although it is known that the new treatment plant was placed into operation on 13 April 1913 (Jefferson County Historical Society 1950, 6; Wooden, Rhonda, Mount Vernon *Morning Sentinel*, personal communication 29 June 2021). On the iron hatch at the base of the uptake column of the L&N water tower are the embossed words "Chicago Bridge & Iron Works Builders". The Chicago Bridge and Iron Company was one of two companies, along with the Pittsburgh-Des Moines Steel Company (now PDM, Inc.), that came to dominate the industry during the pre- and post- World War II periods (Minnesota Historical Society 2021). Chicago Bridge and Iron, known later as CB&I and CBI, Inc., was merged into McDermott International, based in the Netherlands, in May 2018, but maintains a Headquarters under the name Chicago Bridge & Iron N.V. in Plainfield, Illinois. Communications with both McDermott International and Chicago Bridge & Iron Company determined that any research conducted by them into the construction of the Mount Vernon, Illinois water tower would first require a contract number, which would have been engraved in the name plate installed on the base of the tower upon completion. There is no name plate affixed to the base of the tower and the City of Mount Vernon has no record of the contract (Bill Chasta, McDermott International, personal communication 1 July 2021).

The absence of a contract raises the question of what entity entered into the contract with Chicago Bridge and Iron Works to construct the elevated water storage tank in 1913-1914. The owner of the Mount Vernon Water Works at the time was Citizens Gas, Electric and Heating which, as of 1910, had become a subsidiary of Henry L. Doherty Company, a New York utilities conglomerate. The "L&N" Water Tower is situated within the L&N Railroad right-of-way, which the L&N technically did not own but was leasing from the South East and St. Louis Railroad Company, which by that time existed only on paper. It may have been the City of Mount Vernon itself, but, without the contract, the party or entity that actually contracted with Chicago Bridge and Iron Works to construct the L&N Water Tower remains unknown. Just as the elevated water storage tank on Waterworks Road is commonly known as the L&N Water Tower, the L&N Reservoir may similarly be a misnomer. The St. Louis and Southeastern Railroad Company built the



first 10-acre, 10-million-gallon capacity reservoir in 1872 to supply its machine shops with dependable and clean surface water. The dam and raised embankment along the northeast edge served as the roadbed for the main SL&SE rail line. In 1890 the Mount Vernon Car Manufacturing Company purchased a 20-acre site on the north side of the L&N track embankment to construct a larger reservoir to supply its machine shops, located in the L&N right-of-way. In 1891 the Mount Vernon Water Works Company purchased the 20-acre reservoir site from the Mount Vernon Car Manufacturing Company in order to provide a reliable source of water for domestic consumption and fire protection. The new Water Works company built an earthen dam and created another impoundment that was connected to the 10-acre impoundment by a 14-inch pipe, essentially creating one 30-acre lake, separated only by the L&N Railroad main line, that is commonly known as the L&N Reservoir, or L&N Pond.

### **The L&N Elevated Water Storage Tank Description**

The L&N Water Tower, is a riveted steel structure with six support columns, a riser, a water tank, and a conical roof. The 150,000 gallon water tank is 25'-0" tall, and 34'-0" in diameter. The water tank rests on a 125'-0" high riser giving an overflow height of 150'-0". The water tank is capped by an approximately 5'-0" high conical cap, and the estimated overall height of the structure is 155'-0" (L&N) (Figures 3 - 7).

The water tower rises from six concrete piers that are 3'-4" square at ground level. While the depth and of the base of the concrete piers is unknown, based on similar CBI plans it is likely that the piers extend 6'-0" below the ground surface and are approximately 8'-0" wide at the base (Chicago Bridge & Ironworks, 1924). The support columns are attached to the concrete piers by 1-3/4" diameter anchor bolts that extend through 16 x 28 riveted steel column boots (Figure 8).

The structure is supported six steel latticed columns that are comprised of three approximately 32'-6" long segments. Each segment consists of two 12" wide angled steel beams connected by riveted steel lattice work. The columns are connected to each other by two sets of horizontal steel struts, spaced approximately 32'-6" apart, that are spliced and riveted to the columns. Additional support is provided by diagonally installed 1-1/4" square tower rods that are attached to the base, struts, and top of the columns with 14" riveted plates. The tower rods were tightened with 10" turn buckles to add strength to the frame. Additional support is provided by a 48" diameter steel riser that rests on an octagonal concrete pad that measures 23" on each side. A 16" x 8" oval shaped hatch is located on the north side of the riser gives access to the inlet/outlet pipe. The plates for the riser are vertically riveted, and horizontally welded, together (Figures 9-12).

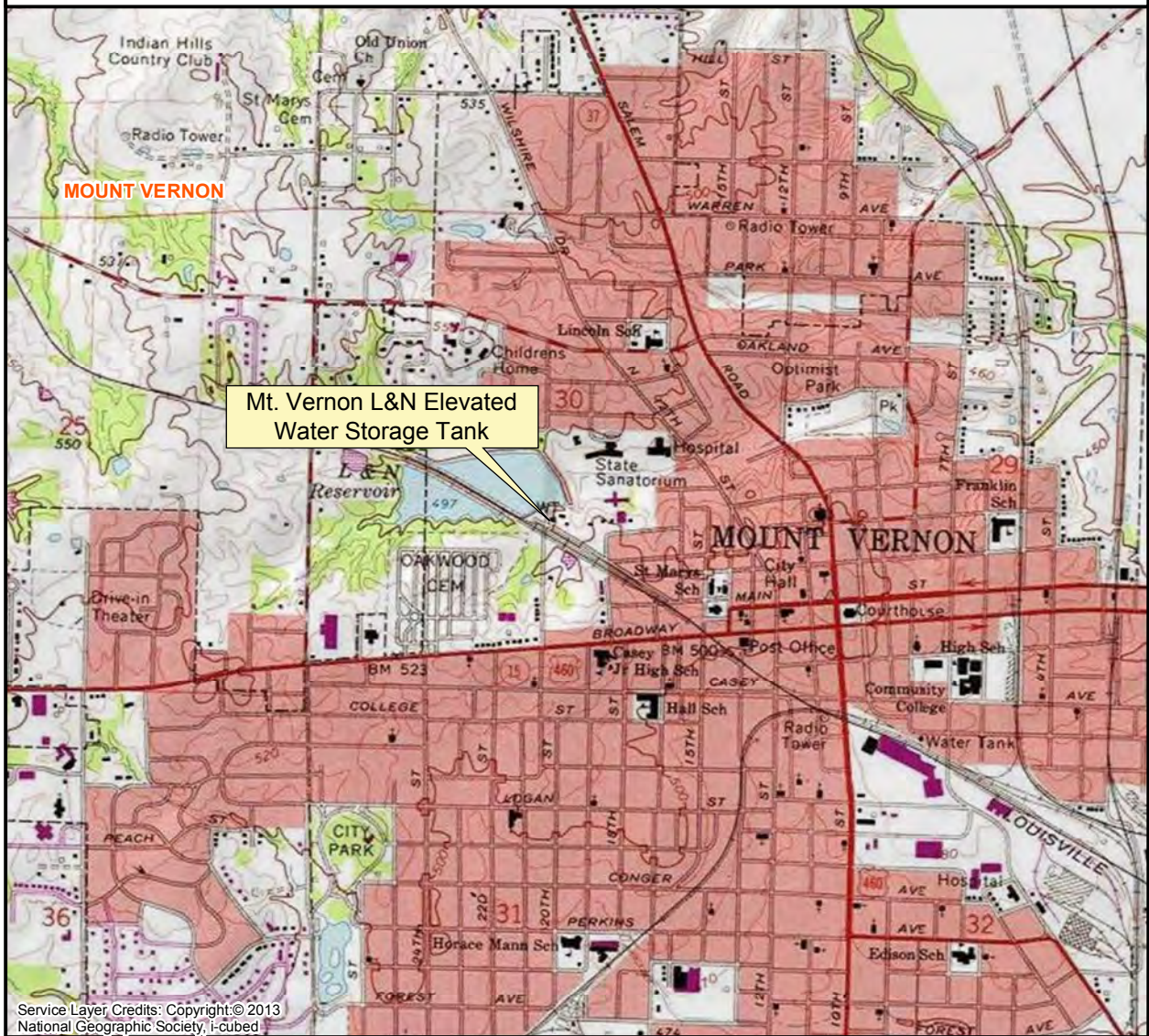
A 3" diameter steel overflow pipe and access ladder are bolted to the southeast column. The water tank, also constructed from riveted steel plates, has an elliptical bottom and a conical top. Double lines of rivets connect the plates on the lower half of the tank while single line riveted connections were used to connect the plates on the upper half. The six columns meet the tank at the base of the balcony located around the base of the tank. Above the balcony, "Mt. Vernon", is painted in large black block letters twice around the tank (Figure 13).

### **Summary**

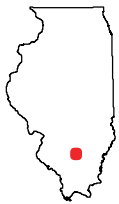
The L&N Water Tower was built in circa 1913-1914 by Chicago Bridge and Iron Works. It was constructed in a riveted-steel design commonly used across the American Midwest in the first half of the twentieth century that is often referred to as a "Tin Man" design. In 1872 the St. Louis and Southeastern Railroad Company installed the original Mount Vernon waterworks to supply its machine shops with dependable and clean surface water. In 1913 Citizens Gas, Electric and Heating, which operated the Mount

Vernon Water Works, installed Mount Vernon's first water treatment plant at the so-called L&N Reservoir. The "L&N" Water Tower was constructed by Chicago Bridge and Iron Works in conjunction with the new water treatment plant. As the first reservoir, pumping station, elevated water storage tank, and treatment plant, water from subsequently constructed surface water sources was pumped to the Reservoir Road location to be redistributed throughout Mount Vernon. Since 1972, when the Rend Lake Inter-City Water System became operational, finished water is pumped from the treatment plant on Rend Lake to the 1951-built Opdyke Tank for distribution to the L&N Tank and the two other storage tanks in the Mount Vernon water distribution system. A recently adopted Five-Year Plan to revitalize Mount Vernon's water supply has determined that, due to its age, capacity, and condition, the L&N elevated storage tank is obsolete, and it is to be replaced by a new, minimum 500,000 gallon-capacity elevated storage tank.

MOUNT VERNON QUADRANGLE  
JEFFERSON COUNTY - ILLINOIS  
7.5 MINUTE SERIES (TOPOGRAPHIC) 1965



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Location

MOUNT VERNON L&N ELEVATED WATER STORAGE TANK  
20TH STREET AT WATERWORKS ROAD  
MOUNT VERNON  
JEFFERSON COUNTY  
ILLINOIS



0 0.25 0.5 1 Kilometers

0 0.125 0.25 0.5 Miles

Figure 1. Location of the Mt. Vernon L&N Elevated Water Storage Tank.

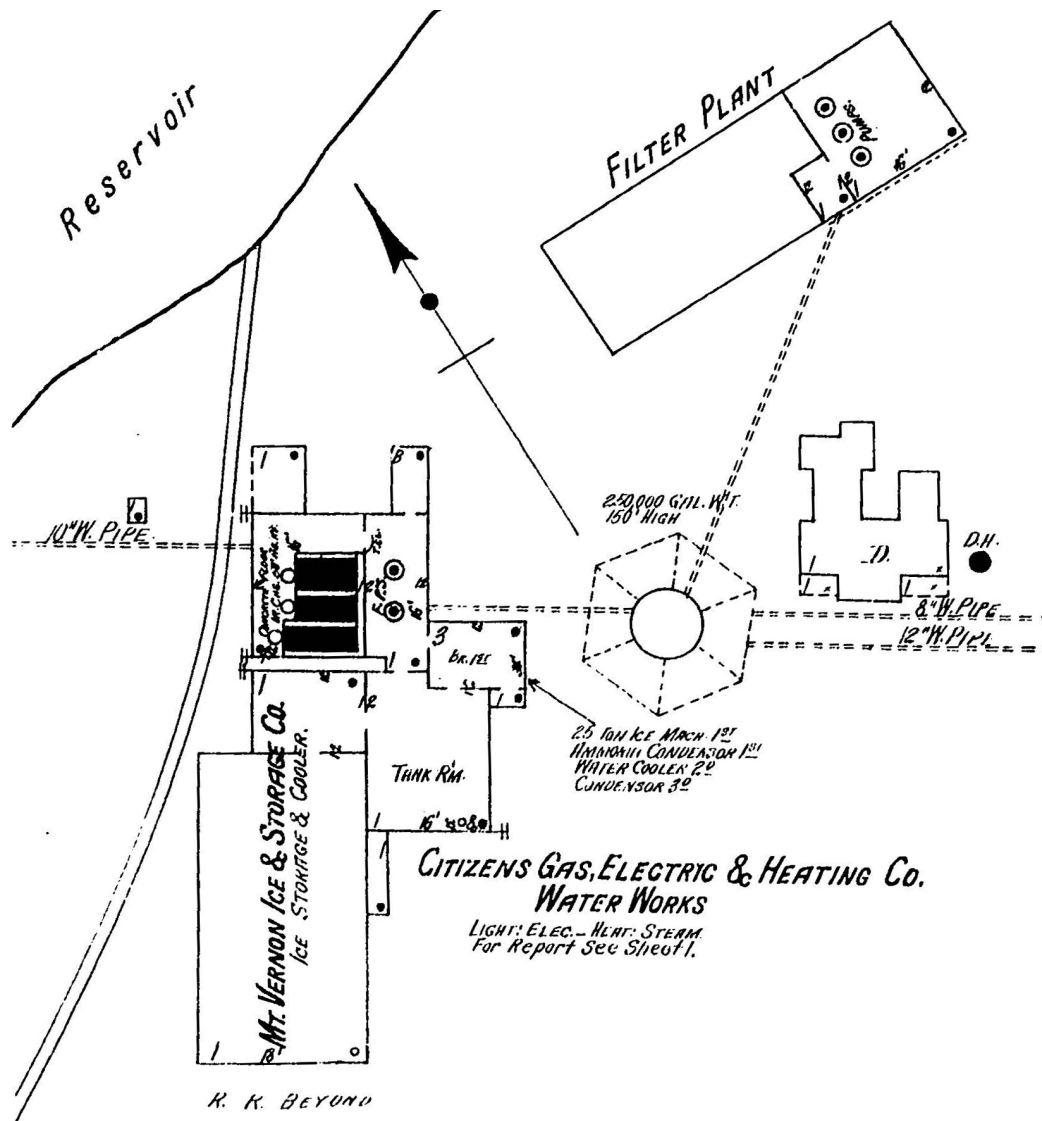


Figure 2. Detail of 1913 Sanborn Fire Insurance Map of Mount Vernon.



Figure 3. Mt. Vernon L&N Elevated Water Storage Tank contextual view.



Figure 4. Mt. Vernon L&N Elevated Water Storage Tank, facing north.



Figure 5. Mt. Vernon L&N Elevated Water Storage Tank, facing east.



Figure 6. Mt. Vernon L&N Elevated Water Storage Tank, facing south.





Figure 7. Mt. Vernon L&N Elevated Water Storage Tank, facing west.



Figure 8. Detail view of tower leg support structure, facing north.



Figure 9. Detail view of support structure, facing northwest.



Figure 10. Detail view of interior leg and support, facing north.



Figure 11. Detail view of tower tension support, facing north.



Figure 12. Detail view of uptake pipe to storage tank, facing north.



Figure 13. Detail view of block letters, facing north.

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Photo 6 - Detail view of water tank, facing northwest.



Photo 7 - Detail view of riveted tank construction, facing northwest.



Photo 13 - Detail view of base of uptake pipe with base hatch, facing northeast.



Photo 14 - Detail view of base hatch with embossed lettering - CHICAGO BRIDGE AND IRON WORKS (BUILDERS), facing northeast.



Photo 15 - Detail view of base hatch with embossed lettering – (CHICAGO BRIDGE AND IRON WORKS) BUILDERS, facing northeast.



Photo 16 - Detail view of tower leg, embossed lettering INLAND, facing northeast.



Photo 17 - Shed at base of water tower, facing northwest.





Photo 18 - Water tower area, approach to tower property from Waterworks Road, facing northwest.



Photo 20 - Water tower area, approach to tower from 20th Street, facing north.



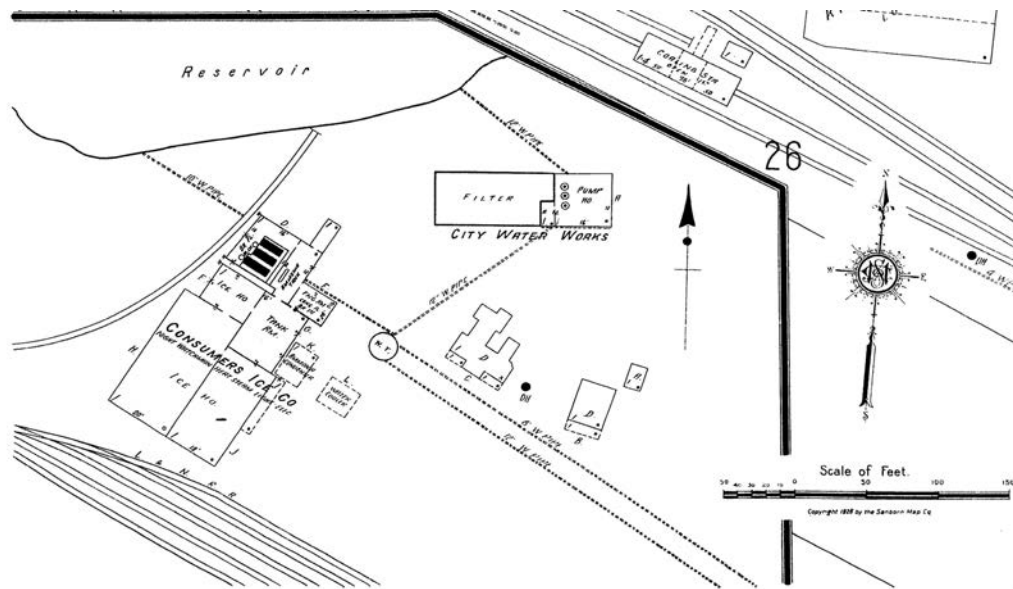
Photo 21 - Water tower area, former Water Treatment Plant site (Demolished) to the north.



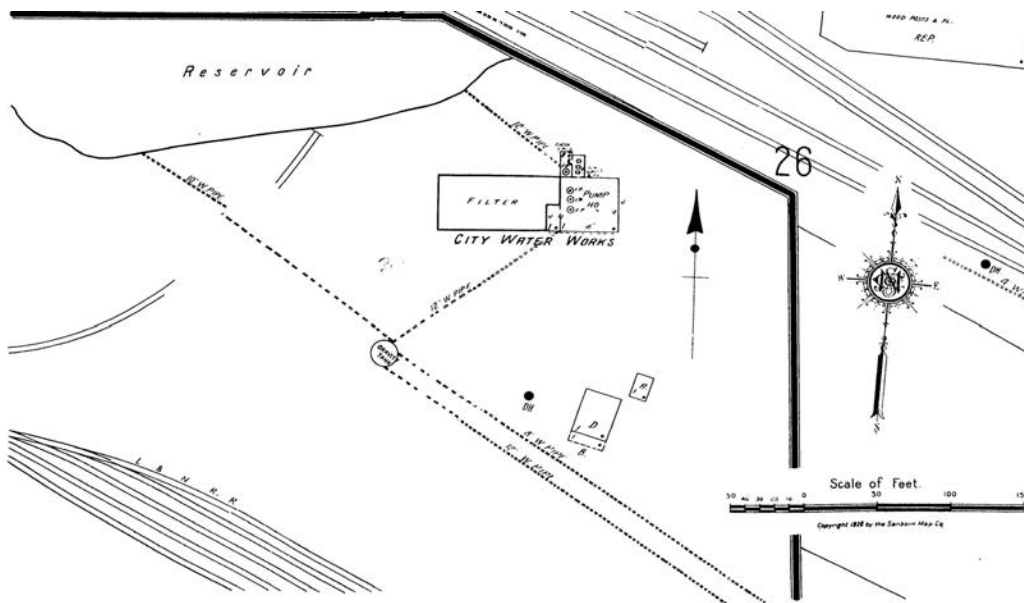
Photo 22 - Water tower area, Louisville and Nashville Reservoir to the west.



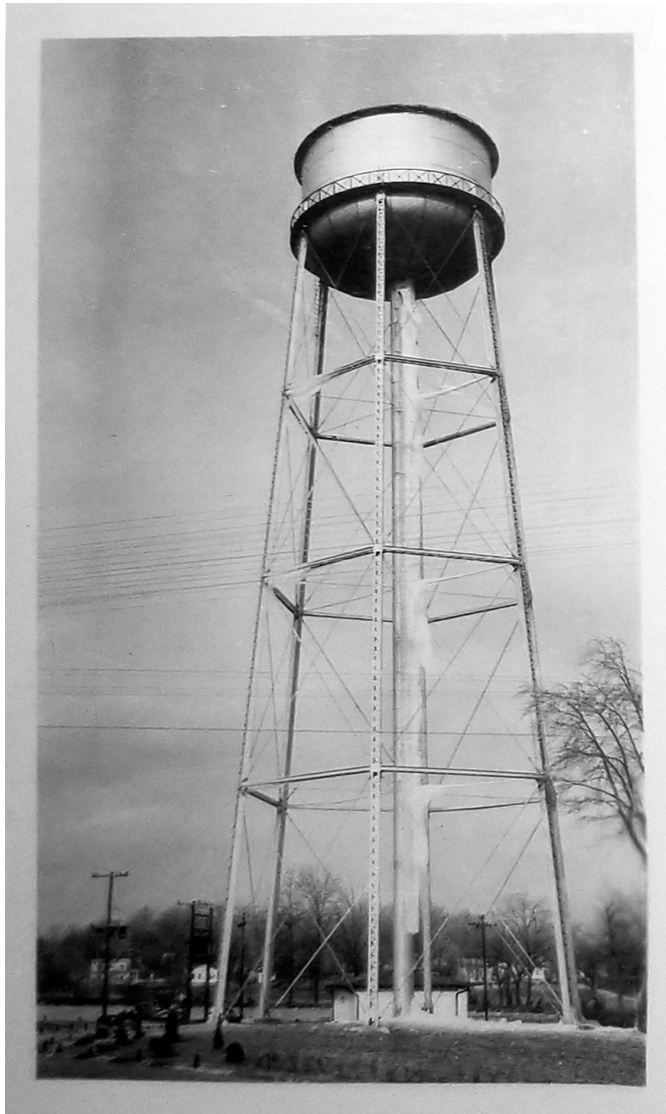
2017 aerial view of Water Treatment Plant, now demolished (Google).



Detail of 1926 March Sanborn Fire Insurance Map of Mount Vernon.



Detail of 1926 March - 1946 Jan Sanborn Fire Insurance Map of Mount Vernon.

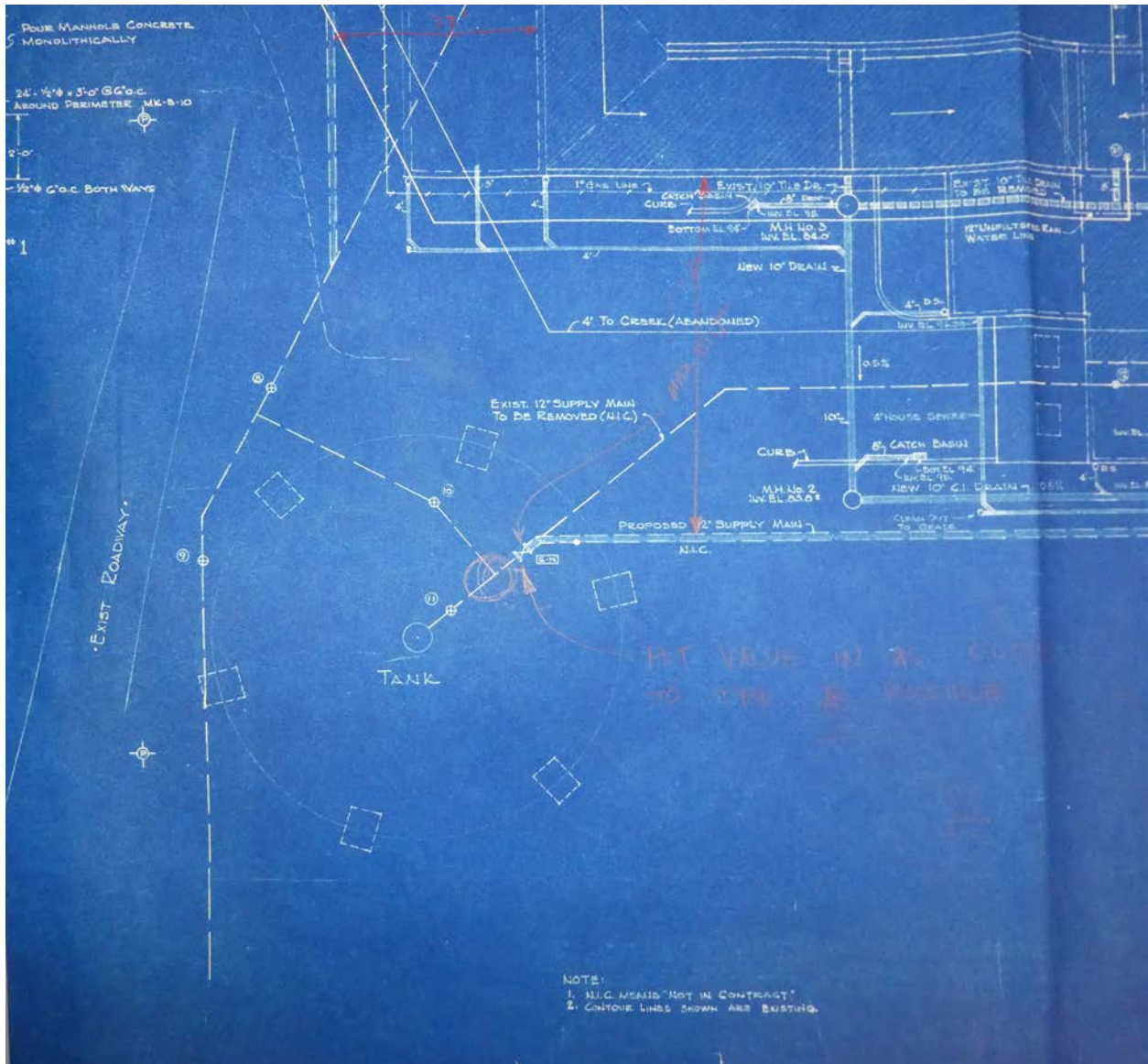


1953 Photograph of water tower. (Courtesy of the Jefferson County Historical Society).



1959 Photograph of water tower (Courtesy of the Jefferson County Historical Society).





Blueprints with 1949 notations, "Additions to Filtration Plant, Illinois Cities Water Company, Mt. Vernon, Illinois" - Detail of water tower area.