The Totoket Historical Society, Inc.

# Constructing the North Branford Dam
# And
# The Formation of Lake Gaillard


**By:**

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## Introduction

The idea for this little project resulted from my rediscovering a series of very interesting photographs at The Reynolds-Beers House, the home of the Totoket Historical Society. These photos detailed the construction of the North Branford Dam. As it turns out the photos were related to a lecture that Mr. Otto E. Schaefer gave to the Totoket Historical Society in 1996. Mr. Schaefer was at that time The Senior Advisor for Land for The Regional Water Authority. In addition, Mr. Robert Hull, director of the North Branford libraries, had recently expressed an interest in acquiring documents relating to town history for display in both libraries. This lake forms a large portion of our town and is therefore a significant part of its history. Once formed, the lake, as well as Totoket Mountain, served to isolate the communities of Northford and North Branford from each other. As early as the mid 1800s a road extended from the center of North Branford all the way up to the area of Reeds Gap Road East in Northford. Other roads extended a long way into the valley. One of the Totoket Historical Societies audio interviews states that there was a well-used trail which ran from the end of Tommy's Path in Northford to the vicinity of North Street. Were there no lake, interaction between the town centers might have been significantly improved.

The historical text related in this document comes from an unpublished manuscript authored by Mr. Otto E. Schaefer. After his retirement in 1999, Mr. Schaefer was contracted by the Regional Water Authority to write a history of the water company. The text presented here was excerpted from that document and approved for release by The Regional Water Authority.

The Totoket Historical Society is extremely grateful to Mr. Schaefer for his interest and cooperation and also to The Regional Water Authority for granting permission to publish this document. In addition I thank Mr. Schaefer for information provided in conversation and emails regarding this document. Mr. Kenneth Albin was very helpful in ferreting out the story of The Nathan Harrison House. Special thanks go to Ms Katherine A. Chabla and Ms Jennifer Johnson of The Yale Gallery of Fine Arts, Department of American Decorative Arts, for their enthusiastic support. They provided an amazing amount of information concerning the Curtiss-Rose House. They could not have been more helpful.

Included with this document is a DVD containing all the black and white photographs shown below. For those of you with a keen interest in this subject I suggest that you view the photos on a computer and enlarge them to reveal the incredible detail contained therein. I have also included on the DVD four audio interviews sponsored by the Totoket Historical Society and The Totoket Grange between 1980 and 1987. High school students in Mrs. Marion Bradley's English class conducted some of the interviews. Two of the interviewees, Clifford Harrison and Mrs. Marian Rose, were themselves displaced by the building of the dam. Mrs. Rose was the sister of Albert Harrison, also displaced. See the map on page 31 for the location of their homes.

When reviewing the photographs note the disregard for occupational safety issues, which was quite common at that time. There are no safety harnesses on workers perching on scaffolds nearly one hundred feet above the ground. Safety harnesses are now required for workers

only six feet above the ground. No safety helmets and little protective gear other than heavy overalls and work gloves were worn. Of course there was no OSHA at that time. Two and possibly three workmen were killed during the construction. Two of them were killed in the tunnel phase of the operation, one by a premature explosion and the other by falling rock. Those deaths were documented in a shoreline newspaper at the time. An individual interviewed by the water company in the 1980s reportedly stated that a Blakeslee employee was found to be missing after a concrete "pour" and was presumed to have fallen in! That death has not been verified.

Mr. Merwin Appell, born in 1917, was a life long resident of North Branford. According to an interview included with this document, as a child he spent a great deal of time observing the construction of the "Totoket Dam". He relates the story of a steam shovel isolated in the bottom of the trench at the base of the dam. Be sure to listen to this story. This incident was confirmed by Mr. Dudley Harrison who has a photograph of a steam shovel in the bottom of the trench largely submerged in water.

## Statistics:

The lake is approximately one mile wide and 3 miles long. The dam is 1200 feet long, 11 feet wide at the top, and 85 feet wide at the base. The excavation for the dam was 70 feet deep.[1]

"The East Dike is about 1500 feet long and 30 feet in height, composed of a concrete core wall carried down to rock, with an earth embankment on either side and the side towards the reservoir paved with large stone."[2]

| Costs: | |
|---|---|
| Lake Gaillard dam and dike | $1,721,742 |
| Tunnels and diversion dams | 2,678,820 |
| Land acquisition | 692,000 |
| Total | $4,401,254 as of June 30, 1931 |
| | |
| Land Acquisition | 5,524 acres as of June 30, 1931 |
| Guilford | 2,330 |
| Madison | 3,976 |
| Killingworth | 660 |
| Total | 12,490 acres |

Using the figures above and demographics for the town of North Branford, The Regional Water Authority owns 34.5% of the town.

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[1] Janet S. Gregan and Grace Rapone Marx, *Images of America, North Branford and Northford, 1850-1950,* Arcadia Publishing , Dover, New Hampshire, 1998, Pg. 98

[2] Totoket Historical Society Archives

Using the dimensions above it can be estimated that the dam contains nearly 18,000 cubic yards of concrete. This does not include the east dike.

A large group of African-Americans was employed on the project working on two of the diversion tunnel headings. African-Americans crews also worked grubbing out tree stumps within the reservoir. All wood was removed from the reservoir. During construction these individuals lived in a camp near the Northford end of the property, separate from white workers. Although white workers lived in camps during the work week, they apparently went "home" on weekends. The African-Americans remained at the campsite. According to the audio interview of Mr. Merwin Appell many of those employed in grubbing out stumps were from southern states. These individuals had no "homes" to go to on the weekends.

An interesting sidelight to the building of the dam was the discovery of fossil footprints relating to several varieties of dinosaurs.[3] These discoveries were mentioned in the audio interview by Merwin Appell. At the location of the dam itself the tracks of one dinosaur were discovered. That was *Anchisauripus.* "This animal was about 10 feet long and weighed about 50 pounds. Scientists believe that it hunted in packs, making up in number and ferocity what it lacked in size and weight."[4] This might remind one of the oviraptors in the movie "Jurrasic Park." Near the portal of one of the tunnels was discovered footprints of *Anchisauripus exsertus,* as well as *Otozoum,* a reptile 30 feet long with a footprint about 20 inches and a stride of 6 feet. Others were *Shepardia palmipes, Eubrontes giganteus* and *Plectropterna of. minitans.* Several of the specimens were never before found south of Middlefield.[2]

We have tried to identify all of the homes pictured on pages 24 to 29. Many of the photos were labeled but others were not and we have indicated a "best guess."

Theodore Groom

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[3] American Journal of Science, Vol. XVIII, October, 1929

[4] Internet search: http://www.baystatereplicas.com/images/details_coelophysis.jpg

**Construction of the Lake Gaillard Dam in North Branford**

**Otto E. Schaefer**

1.13.12

An urban society depends upon a pure, adequate and reliable supply of water for drinking, household, commercial/industrial enterprise, and the principal municipal purpose—fighting fires. We take the existence of public water systems for granted. Like other infrastructure that serves and binds communities together, all have a beginning. In 1849 New Haven Water Company had been granted a charter from the Connecticut legislature to develop a public water system for the City of New Haven. After 10+ years of delays caused by negative views about a public water system, controversy over municipal versus private ownership, a shortage of capital, and a competing water company's interference, water began flowing to a few hundred customers on New Year's day, 1862. Thereafter the New Haven Water Company's water system grew eventually expanding into adjacent towns, enduring periods of severe drought, shortages of reservoir supply, an outbreak of water-borne disease and attempts by the City of New Haven to take over the water system.

The first two decades of the 20th century offered no respite from the growing water system's insatiable demand for water. The rapid growth of industry in the years 1912 through 1919 seemed to draw water from the Company's storage reservoirs as fast as it would be replenished by stream flow. Even the Company's newest reservoir, Lake Watrous, created by the largest dam the Company had completed up to this time in Woodbridge in 1915 at a cost of $710,000 could not satisfy the demand upon storage. Huge new projects such as the construction of the Cedar Hill yards by the New Haven Railroad would demand more than one million gallons per day. Connecticut Light and Power Company also approached the Company about water for a huge new power plant on the east bank of the Housatonic River in the Devon section of Milford. Engineers had projected that this plant would use up to two million gallons water per day. During this period, the Company had plans for developing a large reservoir in East Wallingford on the Pine River and had begun to draw up preliminary plans for the diversion of the Branford River in North Branford to Lake Saltonstall via conduits and tunnels. Neither of these proposals moved forward--the proposed water supply development in East Wallingford was foreclosed by Wallingford municipal water

department's purchase of land for a pumping station and a future reservoir upstream of the Company's project. After a long battle, the courts decided in favor of Wallingford's right to divert water from the Pine River. A plan for diverting water from the Branford River to Lake Saltonstall (at the site of today's North Farms park) was discarded after a new project began to take shape, one that was first mentioned in a report prepared by A. B. Hill in 1912 involving a large valley in North Branford that was occupied by a few farms. The natural terrain made it possible to develop a dam only slightly larger than the newest dam in Woodbridge while creating a reservoir with a huge storage potential. The natural watershed of this future reservoir would never have supplied enough water to fill it. However, streams flowing to Long Island Sound in towns east of North Branford could be diverted to the site of the proposed reservoir. Early topographic surveys would indicate that it would be possible to divert water from these distant watersheds in the towns of Guilford, Madison and Killingworth by gravity through a network of tunnels and conduits.

Edward E. Minor, a civil engineer employed by the Company in 1911 (he had been recommended by A. B. Hill, a consulting engineer and former city engineer for New Haven) became the great champion of the project. Minor had recently been promoted to general manager by the Company's president, Eli Whitney III. The Board's decision (actually a committee of the Board) to proceed with this project was made in March 1923 but only after Minor had purchased the Rose Farm in the summer of 1922. Most of the Rose Farm was situated within the basin of the proposed reservoir. Minor purchased the Farm in his name and not that of the New Haven Water Company.

To say that moving forward with a project of this magnitude would be a risky undertaking, given the engineering, legal and capital impediments that stood in the way would have been an understatement. But the decision to proceed could no longer be postponed because as available water storage grew critically short, virtually no feasible options were left for the Company to consider.

The need for additional storage became obvious and was never openly disputed among members of the Company's board of directors. The issue was how much additional storage should be developed and at what cost. The Board, composed of conservative businessmen who knew that the City of New Haven could exercise its right to purchase the Company in 1927 under terms of a 1902 contract, found that it was easier to postpone than to

proceed. The mind set of the day was that water should be cheap while some community activists were saying that it should be free. The conservative instincts of a majority of the Board may have been confirmed because in 1919 industrial use of water suddenly leveled and declined following the end of World War I. Meter studies to determine the location of water loss and waste instituted in 1918 helped identify locations where there was significant leakage or waste of water. Repair of the leaking pipes effected significant reductions in water consumption. A year later, in 1920, industrial draft began to increase once again. But in 1921, a recession slowed the economy and once again the decision to develop additional sources of water was postponed.

Minor's reports expressed his anxiety about the supply of water, especially when rainfall fell below average. The Company had survived the serious drought of 1923 and with Minor's "tutorials" the Board understood that another drought of equal or greater rainfall deficit would bring with it potentially disastrous consequences. Father Time was definitely not on the Company's side. Mobilization of manpower, construction materials and equipment could not get underway until all of the land had been purchased for the new reservoir and legislation had been approved for the taking of water from streams in Guilford, Madison and Killingworth. The tunnels that would bring water by gravity flow could not be designed as to line and grade until topographic surveys had been completed and borings to evaluate bedrock conditions had been taken over the proposed tunnel. The tunnel was to run between the West River in Guilford and the proposed Totoket Reservoir in North Branford eventually extending eastward to the remote lands east of Lake Quonnipaug. Even with the uncertainty of the location of tunnels, A. B. Hill's office was instructed to begin designing the main dam in North Branford. The dam and reservoir would be referred to as the Totoket dam and reservoir. Minor wanted water company structures to perpetuate local names that had been passed down from old colonial records. However, after the dam had been completed and the reservoir had begun to fill, the reservoir would be renamed Lake Gaillard by the Board in 1932 after the president of the Company who succeeded Eli Whitney III in 1924. It is the name that has prevailed to the present. Both names, Totoket Reservoir and Lake Gaillard appear in the narrative that follows, but always refer to the same water supply facility.

Minor had to move quickly. He had to purchase several thousand acres from at least a dozen landowners without disclosing the true identity of the project and in the shortest

possible time. Detailed engineering surveys for designing the system of dams, reservoirs and tunnels could not begin until land had been purchased. Once the project would be publicly disclosed, town officials would have to be approached to close roads running through the valley. Not until these steps had been taken would it be possible to begin construction of the main dam.

There were other obstacles as well. It was understood from the preliminary drawings compiled by A. B. Hill that the natural watershed tributary to the proposed terminal reservoir would never be capable of filling the reservoir. Filling the reservoir would require building additional dams, tunnels and conduits east of North Branford in the towns of Guilford, Madison and Killingworth. The system had to be carefully engineered if the water was to flow by gravity into the new reservoir. Although the Company held rights to divert water and build a reservoir in North Branford, rights that it possessed through its acquisition of the North Branford Water and Lighting Company, it did not have such rights for diversion of streams in Guilford, Madison and Killingworth. Nor did it own any land in these towns. The Company needed three things to ensure the eventual completion of the project: land, water rights legislation, and capital.

Thousands of acres of land would be needed for the project. How thousands of acres could be acquired without attracting the attention of speculators was a major concern. After Minor had purchased the Rose Farm in 1922, he was given the green light to purchase all or as much of the valley as possible before residents of the community became aware that something was afoot. By June of 1923, Minor had reported to Whitney that "*it is pretty well understood at present that the Water Company has an interest in this valley*". Minor, as of June 7, 1923, had acquired 1027 acres in his name at a cost of $38,755. It included a mortgage for $10,000 given to John C. and Douglas Rose, owners of the large farm within the central part of the valley. Minor employed A. B. Hill to research the titles to property he planned to acquire. With an understanding of the property rights, acreage, improvements on the land and other pertinent information, Minor approached the landowners with hard cash in hand, usually silver dollars jingling in a draw-string pouch, to purchase an option. Before year's end (1923), about 1600 acres in the valley east of Totoket Mountain had been purchased in this manner. It was in December of 1923 that the New Haven Water Company's interests became official when all of the land acquired by Minor was transferred to the Company and recorded

on the public land records. A week or two later two other farms were purchased, this time directly by the Company. Thereafter, all of the land in the valley and the watershed of the surrounding hillsides were acquired directly by the Company. Another 3000 acres in Guilford, Madison and Killingworth had also been purchased, most of it by a Company- controlled entity known as the Genesee Fishing Association through an agent, Alden J. Hill, a North Branford selectman who was in the business of cutting timber for construction piling. Hill was a perfect fit for the Company because he knew the land and the owners of land the Company would need. The streams draining the eastern landholdings would not be diverted to Lake Gaillard until the 1950's.

Minor, always concerned that another dry-spell was just around the corner, had begun clearing land on properties acquired in the vicinity of the dam site. Clearing of the land to prepare the site for excavation of the foundation of the dam had begun well in advance of the execution of a contract for its construction. The cleared land revealed a perfect location for the dam. Minor reported that work was underway in August 1924 and stakes had been set marking the center line of the new dam. In September, machinery to bore into and extract cores of rock was on the site drilling into the earth to find the depth and quality of the bedrock to determine its suitability to support the weight of the concrete dam. Borings at the dam site were completed in December 1924 and clearing of land by a crew of Alden Hill's men within the reservoir was well under way. Prior to clearing the land, Hill, a North Branford selectman, had purchased from the Company the most valuable timber for his own business purposes. Company pipe gangs followed Hill by chopping all of the remaining trees and tops of previously harvested timber into cordwood and burning the brush. Unless other work was found, pipe laying crews were usually laid off in the winter when frost had penetrated deep into the ground beneath city streets. Most of the cordwood was sold to the Montowese Brick Company. The Montowese Brick Company eventually paid for the wood by conveying all of the cutover land it owned on Totoket Mountain, 116 acres, to the Company.

In February 1925, Minor hired Alden Hill and his crew of wood cutters to clear land within the reservoir site when Company crews had to be called back to the City to lay pipe. While the water taking legislation was being debated in the general assembly and coming up for a vote in May 1925, A. B. Hill's engineers had been busy designing the dam based on the core samples of the rock at the site of the dam but had reached a point where they could not

proceed any further as to the height of the dam without land surveys of the topography and core samples of the bedrock east of North Branford.

This had to have been a period of great anxiety as the advance work was proceeding. Water main extensions in the distribution system in 1924 equaled the amount of pipe laid the previous two years and new service connections increased 33% over the number installed in 1923. Rainfall once again dropped below normal; by September 1924 the Company's reservoirs had fallen below the lowest point in the preceding critically dry year. But heavy rains that began to fall in October saved the Company; by early 1925 the Company's supplies had been restored. Now there was the risk that the project could be stopped dead in its tracks if legislative approval was withheld for the right to take water from the West River in Guilford. Without this source, the proposed reservoir would never fill. Nor had the Company acquired all of the property that would be flooded by the proposed reservoir. It became necessary for the Company to take the landowners of several farms within or near to the basin to court because they could not agree on price for the land and improvements to be taken. The Company eventually prevailed in the last days of the 1925 session of the legislature in the fight over water diversion rights.

Meanwhile none of the town roads running through the reservoir site had been closed. They continued to exist as public roads. The Company applied to the Board of Selectmen to have 30,000 feet of town roads closed in July 1925 and a town meeting was held in Northford the following month to authorize the Selectmen to close the roads within and near the reservoir. The Company's petition was defeated by a small margin. The defeat was attributed to the fact that the Company had not acquired all of the land; several owners were holding out and a bare majority of the Town Meeting sided with them. Not until the Company had acquired all of the land and relocated one of the roads east of the proposed reservoir at Company expense did the Town officially close the roads.

Minor gave Hill's engineers authority to complete the plans for the main reservoir in North Branford. But the maximum optimum height of the dam could not be established until the line and grade of the tunnels had been determined. And the line and grade of the tunnels could not be firmly established until the location of the future diversion dams had been determined and samples of rock cores taken at the location of the proposed tunnels could be evaluated. Finally, after his men had secured the most essential information, while boring rigs

and survey crews were still in the wilds of North Madison, A.B. Hill designed the main dam and determined that building a dike east of the main dam could significantly increase storage capacity. Blakeslee was offered an opportunity to submit a bid on the dam, ahead of all other contractors the Company thought were qualified. Blakeslee's bid was about $20,000 higher than Hill's estimate of the construction costs. Blakeslee was given another opportunity to revise his figures. The Board approved Blakeslee's revised bid without requesting bids from other contractors. While such a transaction would have been severely criticized in our modern business environment, the Company was much more comfortable working with a local contractor with an excellent reputation than a company outside the region or the state. There were other compelling reasons. Blakeslee owned substantial amounts of stock in the Water Company and the Gas Company, was a director of both companies (he was also President of the Gas Company), and had a controlling interest in the New Haven Trap Rock Company whose main quarry was only one mile from the construction site. Trap rock, processed into crushed stone, would be one of the main ingredients for the aggregate used in the concrete to be poured for the dam. Even the best and most carefully developed plans and specifications could not foresee all possible conditions at the construction site. The Company felt it would be dealing with a known entity, a contractor that had built several of the dams within its system, the most recent being the large concrete dam for Lake Watrous reservoir in Woodbridge completed in 1915 and the rebuilding of the Maltby No. 2 dam and conduit in 1923. Company officials were confident that Blakeslee would continue to maintain the highest standards of workmanship and charge reasonable prices should Company engineers request changes in specifications or additional work.

More critical to the project was the fact that Blakeslee held a controlling interest in the New Haven Trap Rock Company, a trap rock quarry that was opened in town in 1914. The quarry would produce one of the primary ingredients for the thousands of cubic yards of concrete that would be poured for construction of the dam. New Haven Trap Rock Company also owned tracts of land on the side of Totoket Mountain that would drain to the reservoir; one such tract extended near the proposed flowline of the reservoir. Meanwhile the Company had purchased land adjacent to some of the quarry landholdings off the proposed reservoir's watershed. The product of meetings that took place among Blakeslee, the Company and New Haven Trap Rock Company is obvious. The stroke of a pen along an engineer's drafting

straight edge, defined new property boundaries along the top of the ridge of Great Hill (Totoket Mountain). By an agreement negotiated in the space of a few days, parcels of land owned by New Haven Trap Rock Company extending east of the line were exchanged for parcels owned by the Company west of the line. The Company also received an easement for a tunnel under the quarry, one that would limit quarry blasting within specified horizontal and vertical distances of the tunnel.

Later, in November 1925, before the ink was dry on the contract with C. W. Balkeslee & Sons, work was started on getting together the necessary plant to build the dam. Blakeslee began laying standard gauge railroad track for a mile-long spur from the Branford Steam Railroad just north of the intersection of Great Hill Road and the Fair Haven Turnpike out to the dam site (the state road, known today as Route 80, had yet to be constructed). Buildings were also being erected below the dam site for accommodating the workmen (dormitory and mess hall), a commissary and an office. Men who worked on the dam during the construction months over the next two years lived at the camp. Stables were also needed for the large number of horses used to move earth fill and wood that was cut within the reservoir. It would be the last time that horses outnumbered trucks on a construction project of this magnitude. Three other encampments were built for the men working on the tunnels in North Branford and a fourth for the diversion dam on the West Branch of the West River in Guilford.

Certain that the Board would approve a contract with Blakeslee, Minor began surveys of land owned by the New Haven Trap Rock Company and its wholly owned subsidiary, the Branford Steam Railroad, to determine the best route for the railroad spur out to the site of the proposed dam. By October 1925 the plans were completed and presented to the Board of Selectmen in North Branford. A part of the railroad spur had to cross Great Hill Road requiring approval of the Selectmen. The Board of Selectmen approved.

The excavation for the foundation of the dam did not begin until March 1926 and proceeded slowly. The rock that was encountered on the west side of Crooked Brook was found to be soft shale, inadequate to support the massive quantity of concrete to be poured for the dam. The excavation for the foundation was undertaken by at least six steam shovels, some carving a channel 35 feet deep into the softer shale before hard rock was found on the western side of the ravine in May. Fortunately, the rock on the eastern side of the ravine was hard sandstone requiring far less excavation. Concrete for the foundation of the main dam

could not be poured until the State Engineer inspected and approved the foundation rock. W. G. Smith, state engineer, was called in to inspect the site of the pour and following his inspection, approval was given on July 31, 1926. There was not much time left in the construction season.

Blakeslee had laid the track for the railroad spur all the way to the upstream face of the dam where a large concrete mixing plant had been erected together with a number of construction derricks operated by steam "donkeys". As the last rock was being removed for the foundation on the west side in preparation for the first concrete pour, the first consignment of cement, nine carloads, was received at the plant together with one car of hydrated lime. The pouring of concrete was to begin on the west side of the ravine and progress eastward. Before concrete was to be poured into the deep bedrock channel, Minor and his engineers took steps to prevent any seepage through the rock at the base of the dam. Holes were drilled at 8 foot intervals some 15 feet into the rock into which grout cement was forced under 100 pounds of pressure. The first concrete was poured for the foundation of the dam in August 1926. By September concrete was being poured at a rate that called for three carloads of cement a day. By October, 18,000 cubic yards of concrete had been poured. Although concrete pours were suspended in early December, Blakeslee proceeded to remove additional rock in the foundation for the east side of the dam until very cold weather set in.

While the dam was under this stage of construction, plans for the tunnels were as yet incomplete. Three boring machines were busy in January 1927 taking rock cores on one of the future tunnel lines and at the sites of future diversion dams in eastern Guilford and Madison. Finally, the line and grade of the tunnels and a conduit was established assuring that water diverted from the streams east of North Branford extending to the Hammonasset River could be carried by gravity into the reservoir to be formed behind the new dam. Now plans could proceed for establishing a final elevation for a spillway in the dike that was to be constructed east of the main dam that would form a reservoir with a storage capacity adequate for the needs of the region well into the future.

By early March all of the rock had been removed from the foundation for the east side of the main dam. The pouring of concrete resumed on March 31, 1927. Significant headway was made throughout the month of April. By May, work on the main dam was nearing completion. In April, a trestle with narrow gage track was constructed across the ravine so

that earth could be backfilled from small dump carts against the face of the dam. The dump carts were horse drawn. This step seemed excruciatingly slow but the mass of concrete needed the protection of earth cover to protect it against the harshness of New England winter weather---alternate freezing and thawing. The slow pace of backfilling observed by construction superintendents must have doomed horse drawn equipment. Dump trucks, earthmovers and tractors with bulldozer blades were waiting in the wings of time as this would be the last construction project utilizing so many horses.

In his monthly report, Minor reported that the concrete work on the main dam had been completed on July 19, 1927. Work was now well underway on the dike that would form the east wing of the dam. Four hundred feet of a concrete core wall for the dike had been constructed, the rock below having been found to be very hard sandstone. Getting down to the rock had been a problem. A thick layer of very dense hardpan and clay lay over the rock and was very difficult to remove. In August, heavy rainfall brought construction on the dike down to a snail's pace.

In October a wrought iron railing was installed across the top of the dam while backfilling against the downstream slope continued. By November 1927 the concrete core wall of the dike east of the main dam was nearly complete. Earth fill taken from a nearby lot was being used to cover the entire core wall of the dike, an operation that would not be completed until November 1928.

No dam could be considered complete until the spillway and a spillway channel had been constructed and the State Commissioner of Dams had signed a document certifying the dam and spillway as adequate and structurally sound. A spillway is the location where water in a reservoir can safely overflow without damaging the structural integrity of the dam during major storm events. On November 1, 1927 the gate in the main dam was partially closed and the reservoir began to fill with water, but very slowly. The reservoir would not be filled until 1932 although the tunnels discharging diversion water from Northford and Guilford had been in operation since early January 1930. Laying the pipe that delivered water to New Haven from Lake Gaillard was also completed presenting yet another challenge, that of unifying the distribution system to a uniform pressure gradient.

With the reservoir in service, the Company would face a new set of challenges. To cover its debt service costs while paying out a dividend to its shareholders, water rates would

have to be increased at the worst possible time, at the depth of the Great Depression. As for the land, there were well over two thousand acres of open fields and pasture of the farms that had been acquired on the watersheds of the new reservoir and its tributaries. This acreage would be planted with seedling red and white pine that would eventually grow and become timber plantations. Other forestry projects were undertaken to improve the timber quality on the woodlots recently acquired by the Company, all under the direction of the Yale School of Forestry's professor of silviculture, Ralph C. Hawley. The Yale School of Forestry's involvement in managing the Company's forest resources can be traced back to 1902. The forest management relationship with Yale ended in 1947.

Today, a glimpse of the reservoir and adjacent woodlands is like viewing a wilderness. The forest cover has changed, improvements have been made in the eastern portion of the dam (the dyke), but the reservoir continues to fill and recede according to the wetness or dryness of the seasons. If the land could speak, it would have much to say about its past use and history.

# Photographs

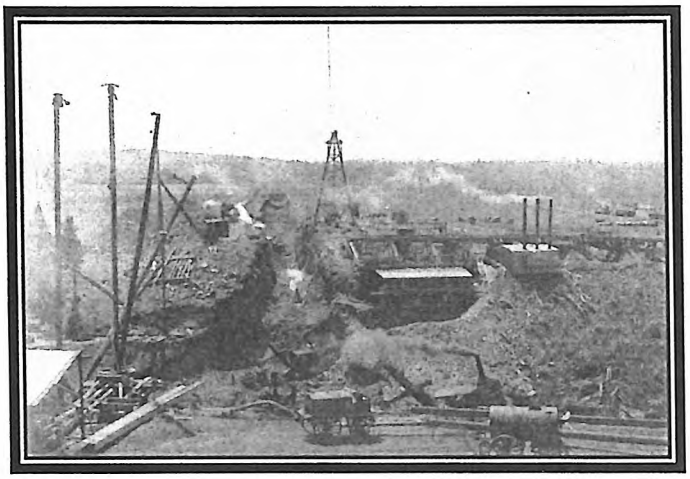
*This serene, peaceful valley, full of working farms, orchards and fields was soon to become a cacophony of noise with the removal of trees and homes and the beginning of construction of the "Totoket Dam" as it was known at that time. The little river in the center of the photo is probably "Crooked Brook."*

*The photo shows the eastern half of the basin prior to the beginning of construction.*

*Probably 1925 or 1926*

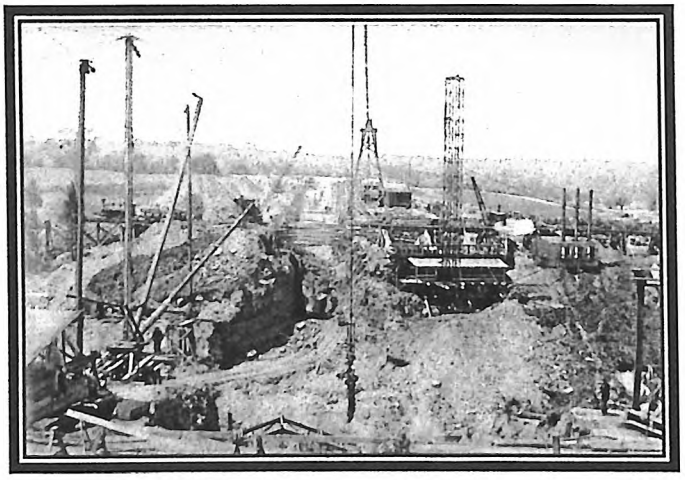
*The North Branford Dam site, looking south. Text with the photo says "Terraces on the left show training of former owner who came from the Rhine Valley." The "former owner" is almost certainly Klahne.* *See page 31 for the location of the Klahne farm.*

*In order to supply the construction site a railroad spur was laid which went up over Great Hill and into the property. On the right hand side of the photo is the Fair Haven Turnpike, which at that time was slightly to the north of the current Route 80 and crossed the Branford Steam Railroad tracks just before the bridge. The Shoreline Electric Railway went under the railroad bridge at that time. The remains of the rail bed and old road can still be seen, at least it could be seen prior to the reconstruction of Route 80 in the summer of 2012*



*May 1, 1926:*

*Construction began in March of 1926. A concrete mixing plant was established on the site, just to the north of the dam and supplies were brought in by standard gauge railroad. Note the horse drawn water wagons in the foreground marked C. W. Blakeslee & Sons. In the extreme right one can make out a steam driven railroad engine.*

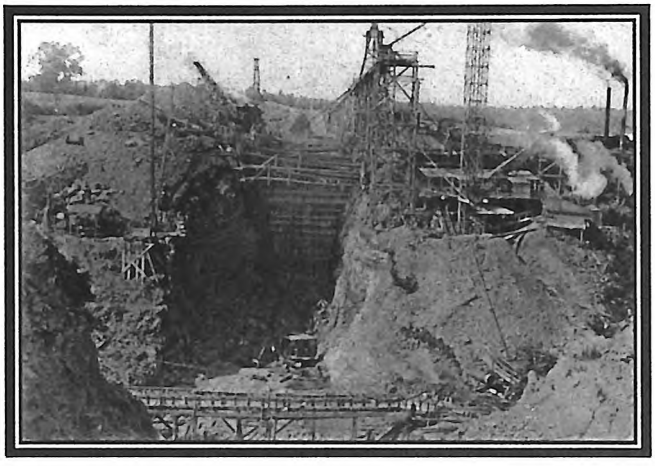


*June 1, 1926:*

*Looking West. Note the construction cranes in the left of the photograph. It would appear that the trench is being dug and bracing timbers are being used to stabilize the sides. The narrow gauge tracks in the foreground were used to remove debris from the site.*

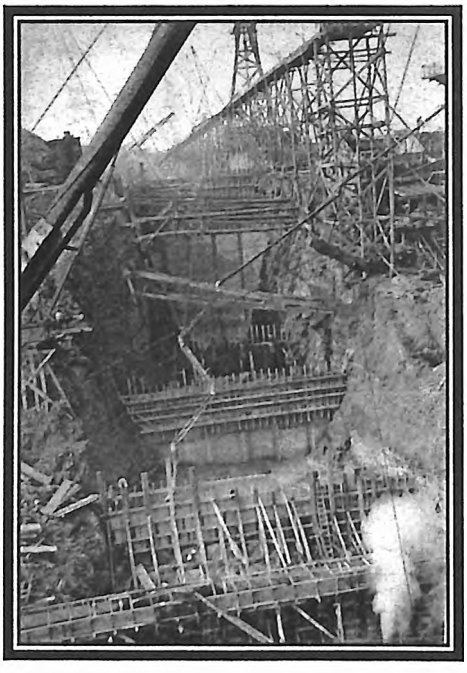
*July 12, 1926*

*Looking west. Note the enormous trench and the huge timbers bracing the walls to prevent collapse. Mr. Merwin Appell tells an interesting story concerning a steam shovel left in the trench after the digging was completed. The story is included on the enclosed DVD.*



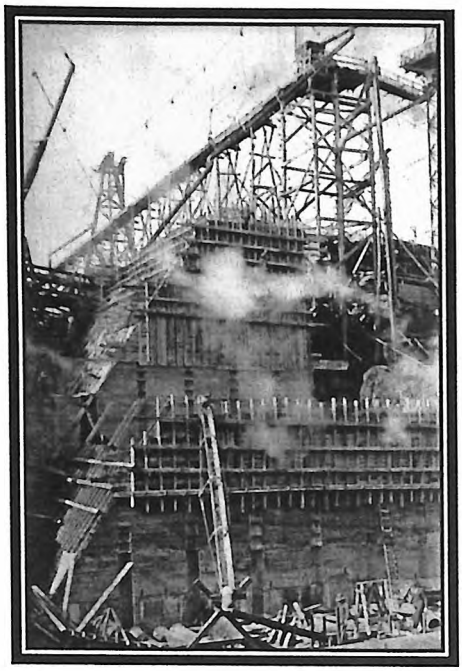
**September 1, 1926:**

*Some forms have been constructed and concrete is being poured. One can see the tube in which the concrete flows in the center of the photograph.*



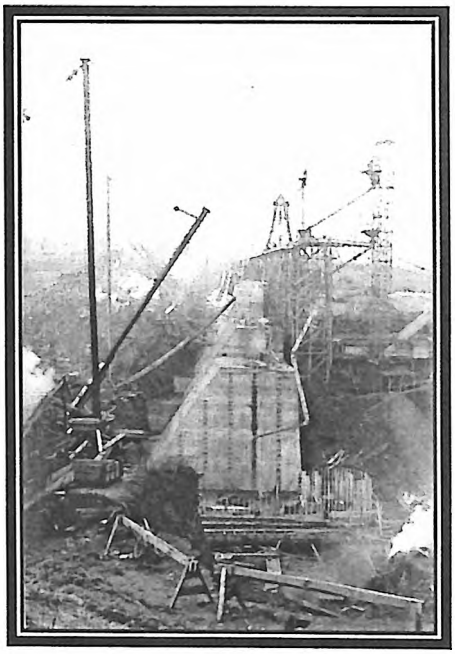
*October 1, 1926:*

*At least one form has been completed and others are being filled. Imagine the volume of concrete needed to build the dam!*



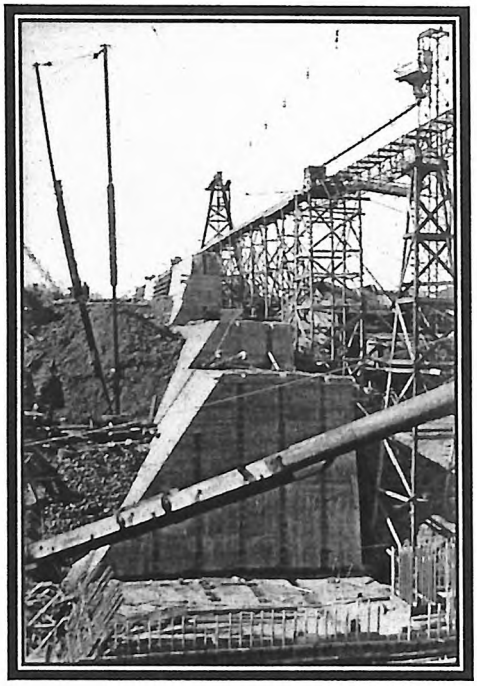
*November 1, 1926:*

*One can see the various levels of concrete forms used in the construction.*



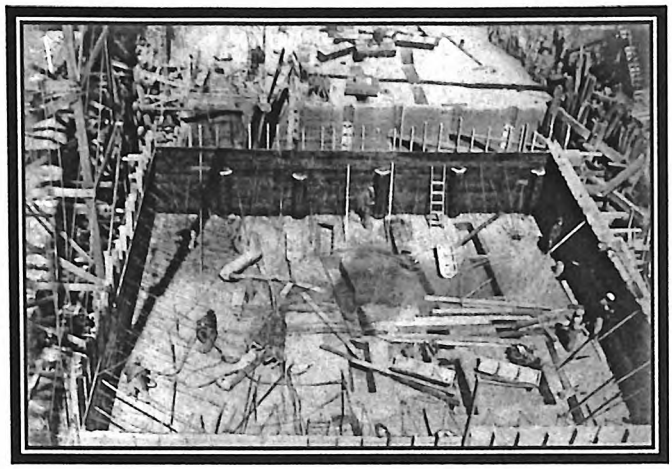
*December 1, 1926*

*Note the huge timbers used to brace the concrete forms.*



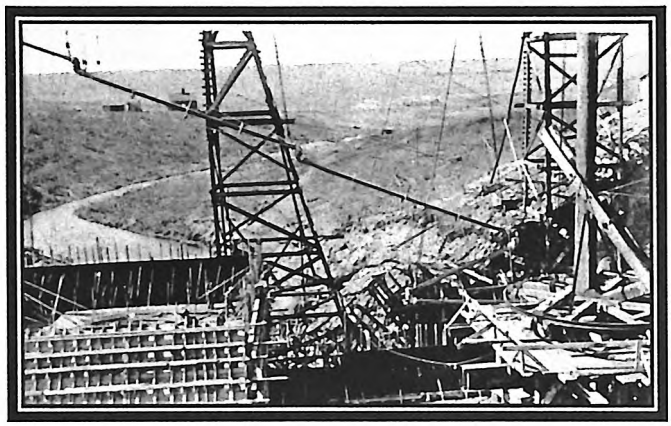
*March 1, 1927*

*Construction was halted during the extreme cold of winter but began again in early spring. The dam is beginning to take shape. Note the backfill being added. It would appear that the top of the dam is being completed in the distance.*



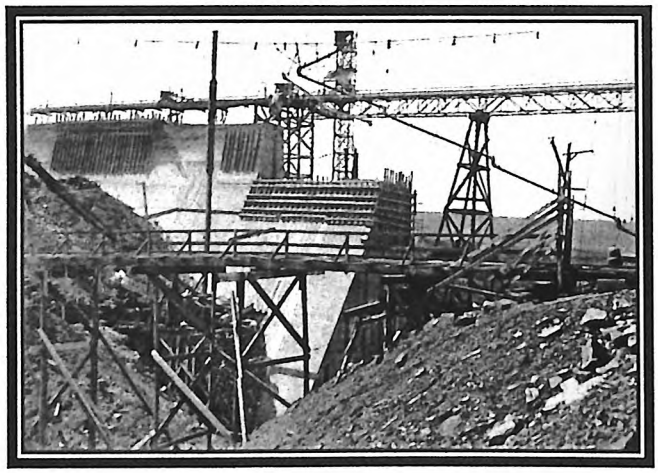
*March 15, 1927*

*This would appear to be a portion of the top of the dam being prepared to fill. You can see the construction workers on and in the forms.*



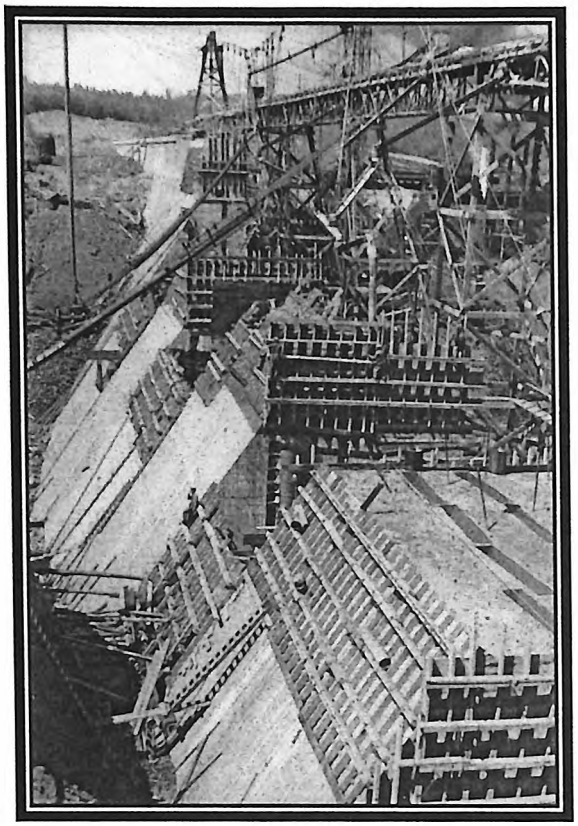
*April 28, 1927*

*Looking north. One can see the combination of Crooked Brook and Roses Brook is beginning to grow. Note the engineer's office (the Allen House) on the rise in the distance. Note also the construction of the rotating crane and the method used to get the concrete to the form.*

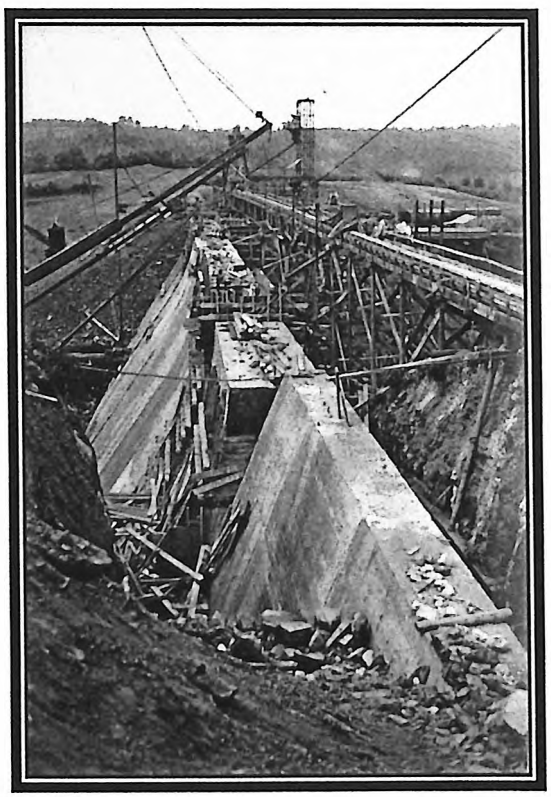


*May 1, 1927*

*Here one can see the enormous size of the project.*

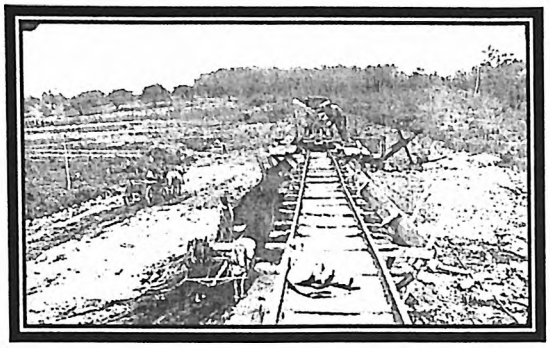


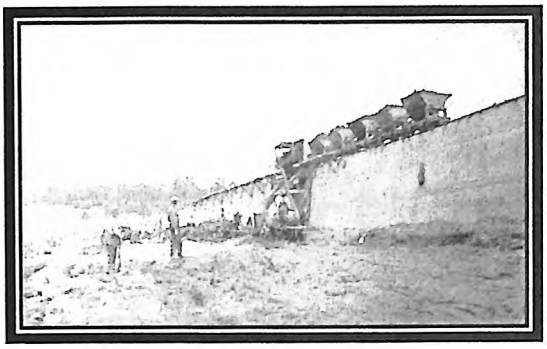
*June 1, 1927*



*July 1, 1927*

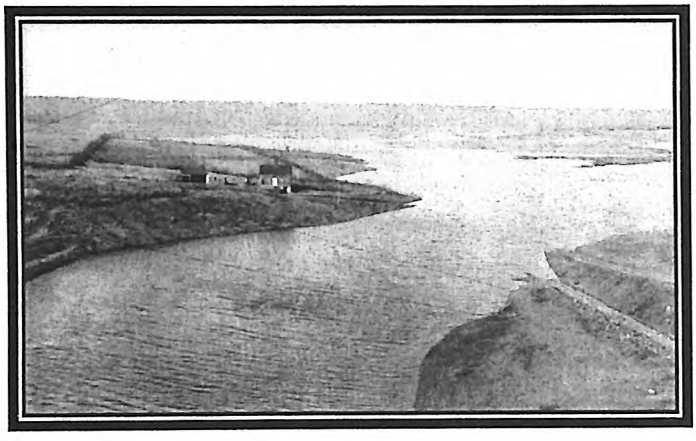
***Here it would appear that they are pouring cement into forms located between the huge sections. A substantial portion of the dam has been completed.***





*August 1, 1928.*

*Two photos showing the building of the dike on the eastern side of the dam. Note the orchard in the background of the left hand photo and the use of horses. The construction site contained a stable for "hundreds of horses." I suspect we are seeing here the "belly dump wagons" mentioned by Mr. Merwin Appell in his audio interview.*



*Date unknown, probably 1928 or 1929*

*The Klahne Tract - see the map at the end of this document identifying the homes removed.*

*The lake is beginning to fill. The engineering office has not yet been moved. It took over four years to fill Lake Gaillard.*

*March 1953*

*Roses Brook, which along with Crooked Brook, feeds Lake Gaillard. This photo shows the little stream as it enters the former Royal N. Harrison property. The combination of these two waterways would never have been able to fill and sustain the lake*

# *The Homes*

*November 1927*

*The Allen House. This structure was used as the engineering office during construction of the dam. It was located in the "Klahne Tract" near the southern end of the lake.*

*This home appears to be on the western side of the reservoir and is possibly the Seltman place.*

*This could be the Lowe house, the northern most residence on the eastern side.*

*These are barns associated with the John Harrison farm.*

*Possibly the Gilbert or Griswold home.*

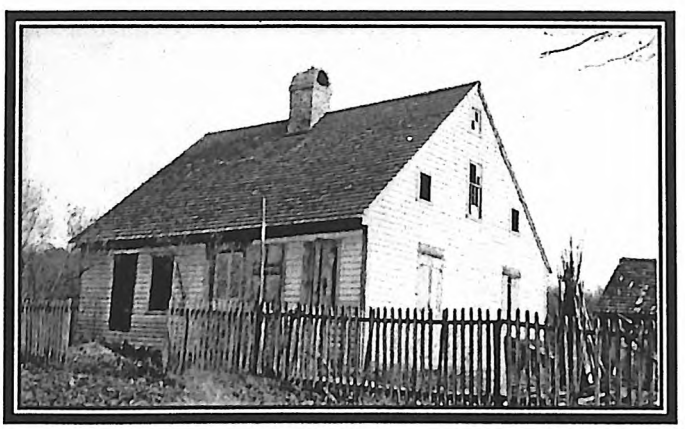
*Possibly the Aaron Johnson home on the west side of the reservoir.*

*The Albert Harrison Farm*

*This farm was located on the east side near the north end of the lake.*

*The Cole House*

*This home was converted to a boat house. It has since been removed. The home was located just north of the current end of North Street*



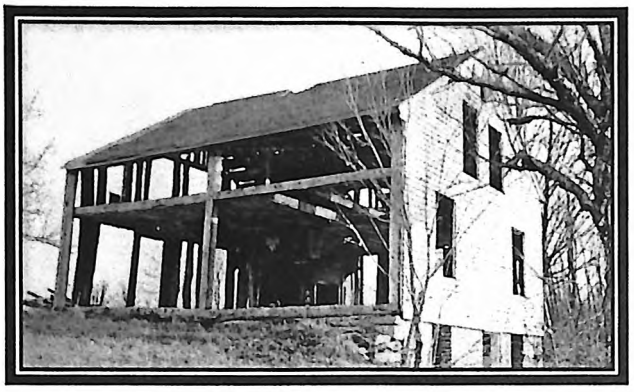
*Possibly the Micue residence.*

*The Albert Harrison Home*

*I am told that the foundation of this old home shows up when the lake is drawn down for one reason or another. It is recognized by the stumps of the trees in the front yard and apparently the hitching post is still there.*

*The John Harrison Home*

*This home was located just southeast of where the old Beech Corner School was situated. That school building still exists but has been converted into a modern residence.*



*This may be the Albert Harrison Home after being partially dismantled.*

*This appears to be the same house as on the top of page 26, possibly the Micue home.*

*The Albert Harrison farm*

*Clifford Harrison lived here as a boy.*

***Harrison's Mill, located on the property of Royal N. Harrison on Roses Brook. There was a dam which provided the water for the mill. The foundations can still be seen when the lake is lowered..***

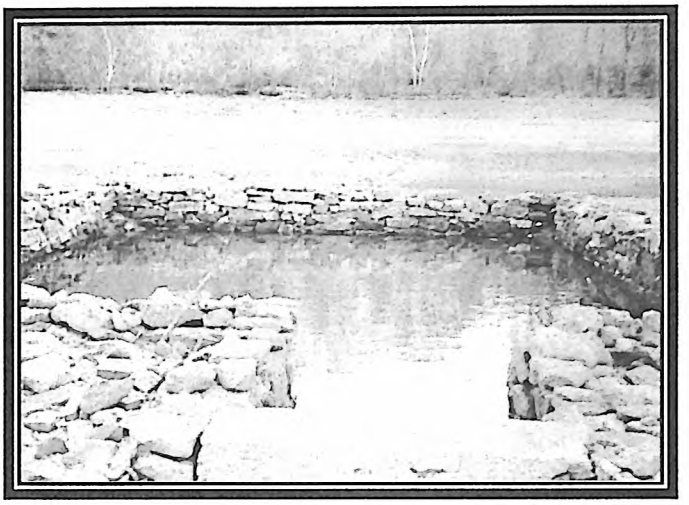
# *Two Special Houses*

## *1. The Nathan Harrison House*

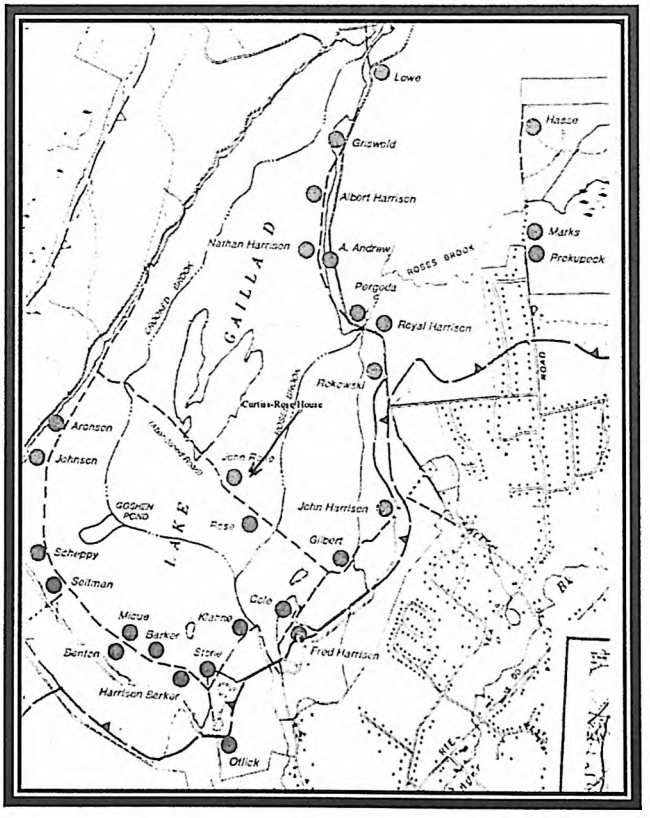
*The Nathan Harrison House*
*1926*

***This home was located on the eastern side of the lake perhaps a quarter mile or so north of where Beech Street makes its 90 degree turn to the east just north of the old Beech Corner school. Shortly after the water began to rise in the basin this home found itself surrounded by water. Winter arrived and the fledgling lake was encrusted with a thick surface of hard ice. The house was jacked up and sledges placed under it. The dwelling was moved south across the ice, presumably by horse power, lugged up over the hill and placed on Beech Street where it remains today. The porch was removed in the 1990s and extensive renovations were implemented. Much of the interior chestnut woodwork and the original maple floors remain. Dormers were also added.***

*January 2012*



***At times the lake is very low and the foundations of the homes that were removed become visible. This is reported to be the cellar hole and foundation of the Nathan Harrison home.***




***The map shows the 25 or so homes purchased or taken prior to the building of the dam.***

In his audio interview, Mr. Merwin Appell indicates that another home was moved across the ice at the southern end of the lake. The Sheppy home was indeed moved from its original location indicated on the map to a location near the Otlick house. The Sheppy house was moved along the adjacent road though, not over the ice. Mr. Appell may be referring to another home. The Fred Harrison home was also moved according to Clifford Harrison in his audio interview.

Inspection of the map above reveals that five Harrison homes were removed from the valley, displacing three generations of Harrisons. This family was one the earliest settlers in the area and Harrison descendants can still be found in both the Northford and North Branford sections of town. A map of North Branford dated 1854 shows seven Rose and seven Harrison homes in the valley. Descendants still live in the Lake Gaillard area although many of the families dispersed after selling or losing their homes.

It should be remembered that a majority of the property owners in the basin sold their homes "willingly" but certainly a number of the residents resisted all efforts to move them. This does not imply that the impact on the lives of those who sold "willingly" was any less than that experienced by the holdouts. Perhaps they simply realized that ultimately they were going to have to move. Ten families held out until they were forced to sell at a court-determined price. Those families are listed below along with the acreage involved.

| | |
|---|---|
| T. W. Gilbert | 79 Acres |
| John A. Harrison | 320 |
| Royal N. Harrison | 265 |
| Nathan Harrison | 20 |
| Albert E. Harrison | 289 |
| Fred Harrison | 20 |
| Floyd Griswold | 49 |
| Frank Sheppe | 100 |
| Elbert M. Rose | 8 |
| | |
| Total Acreage involved | 1150 |

Of the Harrison families, one moved to Branford, one moved to Bantam, at least one stayed in North Branford, and one moved to Pennsylvania.

The four audio interviews included on the enclosed DVD all have a portion related to the building of the dam, the displacement of the property owners and the effect on their lives. These interviews certainly reveal how different life was in those days.

# *2. The Curtiss-Rose House*[5]

The Curtiss-Rose House is that labeled "John Rose" on the map on page 31. The home is believed to have been built by Jonathan Rose, Jr. around 1724. Justus Rose inherited the home from his father's sister, Eunice, in 1768 and for the next hundred years it remained in the Rose family. There is a handwritten account of the history of the home in the document referenced below. Slaves were kept at this home in the 1700s and one female slave was said to have been accidently burned to death in the fireplace. Another tale refers to a man who hanged himself in the attic. A some point the resident placed a noose in the attic and it apparently was still there when the house was purchased by the water company in 1925. In 1866 it was sold to Reverend William B. Curtiss. The Rev. Curtiss came from England and was educated at Yale. He married a young woman from the south much to his mother's dissatisfaction and she disinherited him. He then underwent financial difficulties and the home was foreclosed by The New Haven Savings Bank. The home was repurchased by Judge John C. Rose of Baltimore and his brother, Daniel H. Rose, in 1906. The home originally stood on the road near Goshen Pond. This road was called the Old Wallingford Post Road. Supposedly the home was used as a tavern in its early history. At the time of the revolution Justus Rose had twelve slaves and he offered freedom to any who would join the American Army. Two accepted the offer and one of those was killed at White Plains. Jonathan Rose, the builder and original owner, must have been fairly wealthy as his estate was worth £3753 in 1736 when he died. Interestingly his daughter Abigail was left "a negro man and woman named Jack and Hester" worth £110. Apparently in 1786 Justus Rose had his daughter Abigail's portrait painted as payment for board. The artist was reported to be a young man from New Haven. That painting sold in Boston for $1,160,000 in November of 2011.

The New Haven Water Company attempted to recoup some of the cost of the dam by selling anything of value from the homes which were to be demolished. At the instigation of J. Frederick Kelly and The Yale University Art Gallery several rooms within the Curtiss-Rose house were removed before demolition and reconstructed at the Yale Gallery of Fine Arts in 1928. They are called "The Branford Rooms." Although at this time, August, 2012, those rooms are under renovation, that section of the gallery is scheduled to reopen in December, 2012.

There is a letter at The Yale Art Gallery, Department of American Decorative Arts from Douglas Rose of Baltimore, Maryland, son of the John Rose who bought the house in 1906, stating that "the brothers sold the house to Mr. Minor who led them to believe that it was for personal purposes. Apparently, however, Mr. Minor purchased the house for the water Company."[6]

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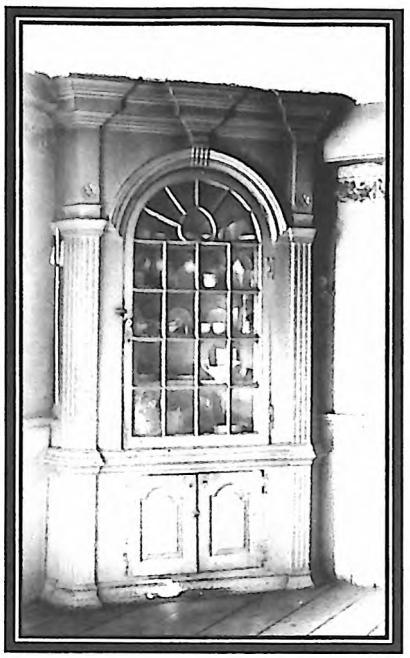
[5] Old Houses of Connecticut, Colonial Dames Series, "Branford, The Rose House 1724," Published by The Connecticut Society of Colonial Dames of America, 1927

[6] Memorandum from Theodore Sizer, Associate Professor , History of Art, Yale University to The Curators File, 23 May, 1929. Yale Art Gallery, Department of American Decorative Arts.

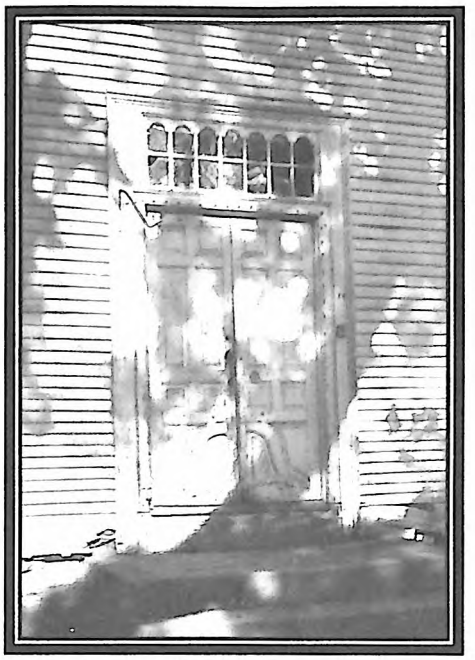
*An outside view shortly before demolition. Photo courtesy of the Yale Art Gallery.*

*Another view just prior to demolition.*

*A third view from the uphill side. Photo courtesy of The Yale Art Gallery.*

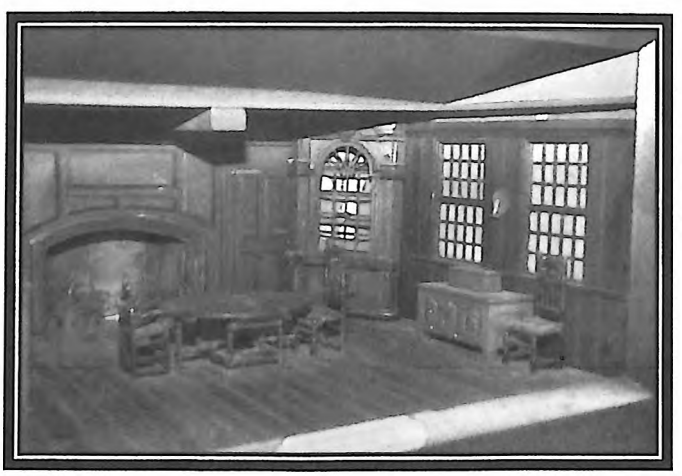


*Left: A corner cupboard in the home before demolition. Photo courtesy of The Yale Art Gallery.*

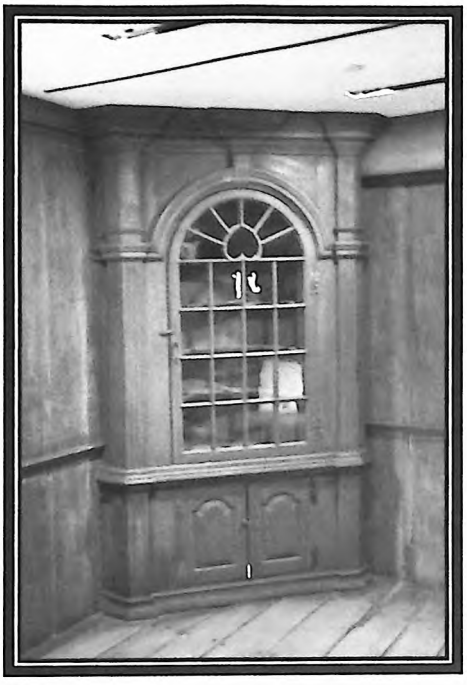


*Above: The main doorway. Photo courtesy of The Yale Art Gallery*

*One of the "Branford Rooms" after reconstruction at The Yale Art Gallery in 1928. Photo courtesy of The Yale Art Gallery.*



*The Totoket Historical Society possesses a model of one of the "Branford Rooms." This model was apparently prepared as part of a WPA project during The Great Depression. Compare with the reconstructed room below.*



*July 13, 2012*
*"The Branford Room"*
*Yale Art Gallery*
*After Reconstruction but Before Opening*
**(Photo Courtesy of the Yale Art Gallery**

*July 13, 2012*
*"The Branford Room*
*Yale Art Gallery*
*After Reconstruction but Before Opening*
*(Photo Courtesy of The Yale Art Gallery)*

# Appendix

Transcription of the hand written "history" (author unknown) included in "Old Houses of Connecticut, Colonial Dames Series, "Branford, The Rose House 1724," Published by The Connecticut Society of Colonial Dames of America, 1927

The House was built about the year 1724 by Jonathan Rose just after his marriage to Abigail Barker of Branford. There is a story that tavern was kept there as this house is built on the Old Wallingford Post Road. After the death of Jonathan Rose it passed to Eunice Rose, a sister and from her to Justus Rose, son of Jonathan Rose. He married in 1771, Lydia Russell, granddaughter of the Rev. Samuel Russell of Branford. They kept slaves & until recent years there was a cluster of old huts in the rear of the present house where these slaves lived. It was said that one of these slave women who was making ham(?) in the right stone fireplace in the addition was burned to death in the fireplace. Another gruesome story refers to a man who hanged himself in the attic. The present resident in the house tried to substantiate this story by pointing out an old noose which still hangs there.

At the time of the Revolution, Justus Rose had about twelve slaves. He offered freedom to any who might join the American Army. Two of these accepted the offer and one of them was killed at White Plains. Justus Rose himself was over forty five at the outbreak of the Revolution & his only son was not born until 1781 – so these slaves were the only ones in the "family" to join the army.

A story told of Justus Rose is as follows: "Shortly after Franklin inverted the lightning rod Justus came riding home from Branford on horse back with a long iron rod trailing behind his horse. He had had a Branford smith make it for him. As he passed the center, the collection of the villages' worthies which I presume was seldom interrupted its session at any time during the last one hundred & sixty years, found themselves interested in what Justus was doing & one of them asked another what it was that Justus Rose was dragging along. The reply was 'Something he has gotten to fight God Almighty with' As the house has not been struck by lightning it is possible that he was wiser in his generation than were his (????)."

The other story was related by John Rose, Judge of the Circuit Court of Appeals at Baltimore, Maryland. He is the great grandson of Justus Rose. His grandfather was another Jonathan Rose. His father was John Rose.

The House passed out of the possession of the family in 1866 & suffered much damage during the years it was not owned by the Roses. It was repurchased by John Rose of Baltimore & his brother , Daniel. In the early years of this century. It is now on the lands of The New Haven Water Co. and as the greater part of the valley bordering on Goshen Pond, which is nearby will soon be under water, the old Rose House with its air of quiet ---- & its sunny pastures to the ---- will soon be things of the past?

Excerpt from Branford Town Records:

To Soloman Linsley Esq., Justice of the Peace for New Haven County, Elanazar Linsley Jr. & Jonathan Russell Jr., Selectmen in Branford in said county for the true (????) comes Justus Rose of said Branford in said county & gives said authority & said selectmen to understand

that the said Justus Rose now hath a negro woman servant who was former a slave for life by the name of Dinah Pomp & being disposed to emancipate & make free said slave hereby applies to said authority & said selectmen (????) of authority authorized to examine said slave as the law now directs & certificate her, that I may emancipate & set at liberty said negro girl – which are the wishes of both master & slave, your applicant humbly prays.
Dated at Branford this 19th day of January, 1807

Note –

Dinah Pomp was forthwith found to be "sound of health, not more than 45 yrs of age nor less than 25" & was given her freedom.

## Who was "Gaillard?"[7]

Mr. Gourdin Y. Gaillard was born in Summersvill, South Carolina on February 29, 1880. He attended The College of Charleston in Charleston, South Carolina. In 1900 he moved to New York City where he was employed by The United States Steel Corporation until 1906. In 1906 he moved to New Haven, CT where he was employed by The New Haven Railroad Co. form 1906 until 1916. He ultimately rose to be the Traffic Manager of this company.

In 1908 he married Louise Huntington Whitney, the daughter of Eli Whitney III, who at that time was President of The New Haven Water Company.

In 1916 he succeeded Davis Daggett as Secretary of The New Haven Water Company. In that year he also ran for political office as State legislator on the Democratic ticket but was apparently defeated. In 1924, on the death of Eli Whitney III he was chosen as President of The New Haven Water Company. At that time he was living at 19 Edgehill Road in New Haven. He continued as President of The New Haven Water Company until he was elected Chairman of the Board sometime in the late 1940s.

His time as President of the New Haven Water Company was a period of great expansion in the system. He was instrumental in the decision to construct the dam and reservoir in North Branford to supply the ever expanding needs of New Haven. He began acquisition of land for this project in 1925. The lake that was thus formed now bears the name Lake Gaillard in his honor.

In 1937 he was elected to The Board of Police Commissioners in New Haven and he was selected as President of the Police Commissioners, a post he continued to hold for many years. In 1939 he moved to 560 Prospect Street, New Haven.

Sometime in the 1930s or 1940s he was also named President of The New Haven Bank.

He died at his summer home in New Hampshire on September 11, 1959 at the age of 79. He was still Chairman of the Board of Directors of The New Haven Water Company at that time.

The board of directors renamed the Totoket dam after Gaillard in the early 1930's. Gaillard probably had little to do with planning the system. However, his talents as a politician, speaker, and his connections with the financial community was to win the day for NHWCo. when it appeared that "small town" opposition in the legislature would defeat the Company's quest for a critical charter amendment in 1925. The charter amendment would allow the Company to divert water from streams in North Guilford, Madison and Killingworth back to North Branford via a system of tunnel/aquaducts. Bear in mind that significant planning and exploratory work had already begun on the dam before the Company had obtained a charter amendment. Perhaps the most important reason for the board of directors to rename the dam and reservoir after Gaillard: when the system was completed in the early 1930's, (including a

[7] The Totoket Historical Society Archives and comments from Otto E. Schaefer, Regional Water Authority historian.

new distribution system reservoir in Hamden on Mill Rock) Gaillard successfully argued before the PUC that the Company should be allowed to increase its water rates to service the huge capital cost of its investment just as the Great Depression was approaching its nadir. The PUC decision, which favored the Company, was challenged in court by the City. The Company lost in the lower court and appealed to the State Supreme Court. On appeal the high court allowed the Company to charge a uniform rate across the distribution system, lowering rates to the suburbs of New Haven while increasing water rates in the City. New Haven, at the time, enjoyed much lower rates as well as free water for all municipal buildings and no charge for fire service under the "1902 contract" which the city had with the Company.