



Field Trip Guide May 8-9, 2022

-The Oswego Canal-

Canal Society of New York State

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Cover Illustration (Figure 1). Bird's-eye View of Oswego, looking south, 1855.

Oswego Canal - An Overview

The Oswego River provided the promoters of a canal with more than convenient topography on which to build. Certainly, the potential waterpower resources resulting from the bedrock geology were well recognized from a very early date, with mills and power canals soon established at Phoenix, Fulton, and Oswego.

The greater importance of the river valley to canal advocates in the early 19th-century derives from what was found at either end of the river. At the eastern end, the Hudson / Mohawk River / Oneida Lake link to the seaboard was appreciated and developed. The western horizon looked to the resources and products of the American interior, including beaver in the 18th century, grain in the 19th century, and even automobiles in the 20th.

The potential of the corridor has been a deciding factor in the development of the State's waterways. The "Ontario" route of the early 19th century was a near miss when the route was selected for what became the Erie Canal. Driving that selection were political factors more than engineering ones as fear of British-controlled Canada was still very palpable in the years after the War of 1812. Indeed, during the Civil War, the State surveyed the corridor for the placement of "gunboat" locks on the Oswego Canal that would enable naval forces to reach Lake Ontario in case Britain entered the war on the side of the Confederacy.

In the 20th century, the promise of that corridor potential resurfaced. In 1963 the State and Federal governments completed a project begun in 1935 to deepen the old "Ontario" route, now the eastern Erie and Oswego Barge Canals, from twelve to fourteen feet. With the improvements to the Welland Canal and much friendlier relationships with Canada, that Great Lake route was perceived as clearly more economically viable.

State-sponsored construction of the Oswego Canal had already evolved through several stages. With its ownership of the salt lands around Syracuse, the State was particularly receptive at the time of the building of the Erie Canal to suggestions that improved transportation around Salina would enhance the State's investments in the salt works. State action was also promoted by the inhabitants of the Oswego valley. The 1819 Salina sidecut was made more useful in 1822 when the Canal Commissioners authorized its extension into Onondaga Lake and the clearing of an easier connection between the Lake and the Seneca River.

By 1825 the State was ready to launch construction along the entire thirty-eight-mile route. This first Oswego Canal, completed in 1828, set the pattern for its descendants. A towpath was built along the eastern bank of the Seneca and Oswego Rivers. At Phoenix, a series began of artificial land cuts alternating with slackwater navigation. Stone lift locks and guard locks allowed canal boats to make the descent to Lake Ontario. These first eighteen lift locks were nearly the same size as the Clinton's Ditch locks.

The enlargement of the Oswego Canal was delayed due to the Stop and Tax Law of 1842 as well as by the fear from western New York that improvement of the Oswego was in direct competition to its interests. Completion of the enlargement was declared in 1863. Besides the fiscal worries of paying for the enlargement, there were other concerns, some major, some maybe less so. In enlarging the locks, the State located the next generation just a short distance from the Clinton's Ditch-era predecessors but in the same channel. By doing so, the hope was to keep the canal open while work was underway. Due to the isolated locations of many of the locks, the State had erected "lock houses" alongside these older locks. Many of these had fallen into disrepair by the time of the enlargement. The Commissioners recommended in 1864 "that new lock houses be authorized be built at twenty-two of the [Oswego] locks. The old lock houses could not be made available, as from their dilapidated condition they could not be removed to the changed sites of the new locks. It is deemed indispensable to the faithful performance of their duties by the lock-tenders that they be afforded the means of comfortable shelter, contiguous to their places of employment."¹

Perhaps more serious, especially along the Oswego River, were concerns over flooding. They were well aware of high water. After the major flood of 1865, the Commissioners noted that "In rebuilding the locks... great pains were taken to find the 'high water mark,' and arrange the new work accordingly. But this high water [of 1865] shows that the 'oldest inhabitant' was not found, as new works that were supposed to be secure have found themselves 'baptized' even to 'immersion.'"²

In the 1880s, as on the Erie, work began on lengthening the locks to accommodate boats in tandem. The failure of the 1895 Improvement program left the Oswego Canal with just twelve of its 23 locks so lengthened.

The first contract for the rebuilding of the Oswego to Barge Canal standards was let in June 1906. Work soon so progressed that it was found necessary to close the Oswego to commercial navigation in 1909 and 1910, a very unique episode in the State's canal history. Another unique aspect of the Oswego's design and construction was the use of movable bridges. The thought was that by doing so that the ship traffic requiring greater height clearances would be able to reach the industrial venues in Syracuse. By 1915 all of the new locks were in service and the new channel available, though not yet to the full twelve-foot depth.

United States Coast Guard Oswego Station

The predecessor agencies to the Coast Guard have had a physical presence at this Oswego location at least since 1876. The current facilities were constructed in 1950 by the Bouley Company of Auburn, a firm well and positively known to the Society. The Bouley's

¹ Annual Report of the Canal Commissioners (1864), p.87.

² Annual Report of the Canal Commissioners (1866), p.65.

were instrumental in the restoration of the Erie House at the Society's Port Byron Heritage Park.

New York State Barge Canal Grain Elevator at Oswego

This now-gone State-constructed elevator represented the progressive attitude among early twentieth-century public officials that the government should actively promote and, at times, run segments of the economy for the greater good of all. The belief was often in deliberate competition with private interests which were perceived as monopolistic and self-serving. In a larger sense, the entire Barge Canal system was the product of this progressivism. The canal would help control, for instance, the unhealthy powers of the private railroad interests.

Grain elevator complexes were built by the State at Oswego and at Brooklyn's Gowanus Bay as part of its Barge Canal system. Others were planned but never built. The construction of the Oswego elevator came in two stages. Initially, only the foundation work was completed on a newly constructed pier at the end of First Street. The reason given in 1922 for the stoppage was to await further improvement of the Welland Canal. It was felt that "until the Welland Canal improvement reaches completion deep draft lake vessels cannot trade into Lake Ontario and there will be no commercial need or use of a grain elevator at Oswego." Others felt this to be penny wise and pound foolish. Both groups probably agreed that Oswego stood to gain over the traditional grain port of Montreal since Oswego offered an uplake cargo, such as coal, to the grain boats whereas Montreal had none.³

The "Barnes" bill of 1923 appropriated funds to complete the project. The contract was let latter that year. The State Engineer described the work, "Under plans, the new elevator, which is to be constructed of reinforced concrete and will be electrically operated will cover a ground area of 213 by 69 feet and provide for the storage of 1,000,000 bushels of grain. The storage facilities of the structure will consist of 27 circular concrete bins each 20 feet in diameter and 94 feet high as well as sixteen interstice bins and twenty outside bins. Provision is made on the east side of the structure for the unloading of lake steamers. This consists of movable marine towers, 158 feet in height, 24 feet wide and 30 feet long, which ride on twenty standard car trucks bearing forty wheels that will operate over four parallel rails located on the pier floor. Each marine tower is to have an unloading capacity of approximately 16,000 bushels per hour. As the grain is removed from the carriers it will be brought to scales located in the main cupola of the elevator and from here it may be deposited for storage in the bins or transferred direct to barges.

"The arrangement for discharging the grain from the elevator consists of three spouts which are directly connected with the conveyor system and which have a loading capacity of approximately 20,000 bushels per hour. These are located on the west side of the building

³ Waterways Advocate (April 1923), p.5; Annual Report of the Superintendent of Public Works (1924), p.16-17; Waterways Advocate (July 1922).

and it is proposed to load one standard canal barge at a time, experience at other elevators showing that much better results can be obtained in this manner than would be possible were the operators to attempt to load more than one such carrier. The plans also provide for a train shed. This will cover two standard gauge railroad tracks, provision being made for loading and unloading freight cars.

"The plans also call for installation of a complete dust cleaning system consisting of pneumatic cleaners and low pressure conveyors which will remove the dangerous grain dust from the main elevator and convey it to a dust house, thereby reducing the danger of explosion due to accumulations of grain dust to an absolute minimum. In addition to the elevator, the plans call for the construction of a welfare or administration building, which will provide working quarters for the employees of the elevator, as well as a shop which is to be equipped to make all ordinary repairs to the elevator or any of its equipment.

"Plans are already being made for extensive use of the elevator, and experience at the State's 2,000,000 bushel capacity elevator at Gowanus Bay, Brooklyn, has clearly demonstrated that grain shippers are quick to take advantage of the Barge Canal as soon as adequate provision is made for the handling of such shipments."⁴

The above-mentioned administration building is currently the home of the H. Lee White Maritime Museum.

By the end of 1924, the elevator was complete and "will have its test as soon as navigation opens in the spring." Use of the elevator seems to have fallen short of the projections. The completion of the new Welland Canal helped. As an example, "in early June [1931], the Great Lakes steamship *John Gehm* delivered approximately 100,000 bushels of wheat at the State elevator... This was reported to be one of the first vessels to pass through the new Welland after its opening. The wheat was taken from Oswego to New York in canal barge loads averaging about 600 tons each." The following year, the Superintendent of Public Works reported that "for the first time in its history, there has been some real business done at the Oswego Grain Elevator, and it is hoped that during 1933 sufficient revenue will be received at this elevator to at least cover its operating costs... Grain has been delivered from this elevator by rail and truck through that part of central New York bounded by Gouverneur and DeKalb Junction on the north, Boonville and Rome on the east, Binghamton on the south, and Sodus and Williamson on the west."⁵

On September 30, 1958, the State transferred ownership of the elevator complex to the Port Authority of Oswego. In the 1980s the elevator was still in use, being used to store "government" surplus corn, brought there by truck. By then, the elevator hadn't seen canal barge traffic in many years. By the mid-1990s, there were calls for the demolition of the elevator. In February 1999 the elevator was removed by the controlled use of explosives in a dramatic fashion.

⁴ Waterways Advocate (September 1923), p.38.

⁵ Annual Report of the Superintendent of Public Works (1924, p.22; (1932), p.32; (1933), p.11, 16.

The elevator pier also lost its other canal traffic in the mid-1990s. In 1994 the historic canal motorship, *Day Peckinpaugh*, brought its last load of cement to silos in Rome, NY. Since 1961 the *Day* had brought cement from Picton, Ontario, often tying up at the Oswego pier. The Lehigh Cement Company still operates cement deliveries from the pier, but now only via truck.

Oswego Harbor

"Time was when Oswego bowed to no other lake city in volume of commerce passing over its waterfront." That success was based on its pivotal location along a seaboard/interior trading network that has long been recognized. The 1722 trading post that the English colonists established here was among their oldest in New York. It was certainly among their most valuable. The English appreciation of the harbor is also illustrated by their retention of the fort at Oswego until 1796. The ramparts of Fort Ontario still provide graphic evidence of how critical the location was to a developing nation.⁶

During the middle years of the 19th century, Oswego stood alongside Buffalo and New York as a near equal in terms of canal-related mercantile activity. Under the category of "boards and scantling," for instance, Oswego ranked first as a shipping point in 1859. Grain has long been the predominant product of Oswego shippers. In 1859 Oswego surpassed Rochester and Buffalo for its handling of flour via the canal. For the same year, it was second only to Buffalo when wheat is considered. Canal toll receipts at Oswego were substantially higher in 1856 than at West Troy, and, again, second only to Buffalo.⁷

Turn-of-the-century promoters hoped that the Barge Canal would rekindle Oswego's flagging commerce. Canal officials, likewise, expected that "Oswego will be one of the most important if not the most important terminal along the line of the new waterways." Under the headline of "Oswego Coming Back," a reporter noted that "at one time within the last month [1922] there were twenty lake vessels, including steamers, sloops and barges, either loading or waiting loading in the harbor." The theory was that transportation via the Oswego Canal, Lake Ontario, and the Welland Canal was especially efficient and economical. Greater speed could be attained on the lake than could be had on the long western sections of the Erie.⁸

As part of its canal activities, the State took specific action to improve the facilities at Oswego. Completion of the canal was hindered by the failure of the Federal government to clear a deep enough channel from Lock 8 to the open water of the lake. What the Feds did accomplish was to give the State permission to do the work at State expense. The State immediately contracted for the work. The Oswego terminal freight house and dock were

⁶ Waterways Advocate (November-December 1922), p.2.

⁷ Annual Report of the Auditor of the Canal Department, on the Tolls, Trade and Tonnage of the Canals of New York (1860), p.40-45, 73-74.

⁸ Waterways Advocate (November-December 1922), p.2.

constructed. The most dramatic effort, as explained above, was the erection of a State-run grain elevator.⁹

Combined with the completion of an enlarged Welland Canal, these efforts were productive. Coincidentally, it was the opening of the Welland nearly a hundred years earlier that gave Oswego a shot in the arm. In 1923 a special ramp was constructed for the unloading of motor vehicles being shipped in from Cleveland and Detroit. The Federal government was more sympathetic to Oswego's needs during the Depression. It sponsored dredging and improvements to the breakwater that enabled larger vessels to use the harbor. The State complemented the work by repairing the terminal and in 1933, in anticipation of increased traffic, moving "one of the Shaw overhead cranes" from its Pier 6 facility (East River, New York City) to Oswego.¹⁰

Oswego Barge Canal Locks 8 and 7

Oswego Barge Canal Lock 8 is famous for what it no longer is. As originally built, it was the only siphon lock in the State's entire system and, perhaps, in North America. It was very easy to identify the paired humps at either end of the lock that were part of that design. Construction of the lock along with Barge Canal Lock 7 was performed under the terms of Contract 35 which was let on September 16, 1907. There was apparently the intent to complete the contract quickly. As one reporter notes, "bottoming out in the canal prism, between Locks Nos. 7 and 8 has been pushed day and night during the month [of May 1908] by a force of 75 to 100 men."¹¹

Lock 8 was the third lock completed on the Barge Canal system, first operating on May 28, 1910. It was described as working "very satisfactory. The chamber can be filled in 4 1/2 minutes and emptied in a slightly longer time. The water is set in motion by using the difference of head to create a vacuum in a storage tank in each wall, thus starting the process of filling and emptying, which afterwards completes itself automatically and also automatically restores the vacuum in the tank, so that all is ready for the next operation. No large culvert-valves with their machinery are used as in the other locks, but the movement of the water is controlled by the two four-inch valves at each end of the two lock walls." A very detailed study of the siphon lock appears in the July 1910 issue of the *Barge Canal Bulletin*.¹²

The long-term operation of the siphon was not without difficulties. In 1943 "the waters of Lake Ontario rose unusually high during the spring freshets so that the gravity system used to operate [the lock] would not function. A new vacuum line was laid along the west lock wall and a new vacuum pump installed. The success of this new method warrants the

⁹ Barge Canal Bulletin (January 1917), p.5.

¹⁰ Waterways Advocate (September 1923), p.44; Annual Report of the Department of Public Works (1933), p.15-16; (1934), p.20.

¹¹ Barge Canal Bulletin (June 1908), p.121-2.

¹² Barge Canal Bulletin (June 1910), p.204; (July 1910), p.309-316.

abandonment of the gravity system as time of lockage has been greatly accelerated. A second pump will be installed at this location."¹³

The contract (M66-6) to replace the siphon system was completed in July 1968. The work was performed by the noted canal firm, C. D. Perry. The lock received another major rehab in 2007.

For the last several years, the most striking work has been on Oswego Barge Canal Lock 7. In 2017 the Canal Corporation undertook a multi-year project that included repairs to the lock walls and approach walls and a new lock house. Adjoining the rapid currents of the Oswego River, Lock 7 offered substantial challenges to this work.

Oswego Weighlock

The last of the State's seven weighlocks was authorized by special legislative action in May 1863, likely in hopes of relieving an overworked Syracuse Weighlock but also in recognition of the growing lumber and grain trade in Oswego.

Work commenced in 1864 but was soon complicated by the "scarcity of laborers, especially masons and stone-cutters," probably due to the Civil War. It was completed in 1866, located just south of Lock 17. Following on the example of the recently completed Waterford Weighlock, Oswego used the "new" Sampson scale. The weighlock survived into the Barge Canal era, being used as a temporary repair site for one of the dredges in February 1910. Soon after, it was demolished.¹⁴

Oswego Canal Company and the Varick Canal

Between Oswego Barge Canal Locks 6 and 7 was the historic entrance to the Oswego Canal Company's power canal. At the time of its construction, the power canal also doubled as a section of the State's canal. At the time of the enlargement, the two were separate but parallel to each other with the power canal to the east. The Company was incorporated in 1823 and began construction the following year.

On the opposite shore, at the western edge of the dam, was the entrance to the Varick Canal. It is now the site of what was Niagara Mohawk's but now Brookfield's Varick hydroelectric station. In the 19th-century, while partially navigable, the Varick Canal was more important as a power canal for the factories that lined the west edge of the Oswego River. It was constructed about 1833 under the sponsorship of Abram Varick and management of Richard L. DeZeng. "The wall between it and the river was ten feet thick at

¹³ Annual Report of the Division of Public Works (1944), p.51.

¹⁴ Barge Canal Bulletin (February 1909), p.54.

the bottom, about four feet thick at the top, sixteen feet high, and 3,000 feet long. The canal is sixty-two feet wide and eight feet deep, and has average fall of fourteen feet."¹⁵

Enlarged Oswego Canal Lift Lock 14

The contract for the enlarged lock was probably let in late 1851 with a hoped-for completion in 1854. Likely, it was brought into use about that time though the final account for the contract shows payments to the contractor continuing into 1859. The lock was located a short distance north of its Clinton's Ditch-era predecessor. It too was to be lengthened as were several of the Oswego locks to accommodate tandem boats. A contract was prepared in the late 1890s as part of the 1895 Improvement. However, when that Improvement failed, the contract was never issued.

Fulton

The small marina to the south of Oswego Barge Canal Lock 3 is in the alignment of the 19th-century Oswego Canal. The channel was maintained after the construction of the Barge Canal to provide waterpower to now-gone factories that bordered the canal.

Oswego Canal Locks 2 and 3 overcome what was referred to as the "Falls of the Oswego." This portion of the waterway was one of the few major impediments to travel along the Mohawk / Wood Creek / Oneida Lake / Oswego River corridor of the 18th century. In 1810 DeWitt Clinton provided an excellent description of the hardships that resulted from the Falls in the days before the Oswego Canal. "In a smart shower we arrived at the celebrated Falls of Oswego... There is a carrying place of a mile here, the upper and lower landings being that distance apart. At both landings there were about 15,000 barrels of salt, containing five bushels each, and each bushel weighing fifty-six pounds. It is supposed that the same quantity has been already carried down... The carriage at this place is one shilling for each barrel. Loaded boats cannot with safety descend the Falls, but light boats may, notwithstanding the descent is twelve feet, and the roaring of the troubled waves among great rocks is really terrific. Pilots conduct the boats over for one dollar each; and being perfectly acquainted with the Falls, no accidents are known to happen, although the least misstep would dash the vessels to atoms... The ascent by boat is impracticable."¹⁶

Enlarged Oswego Canal Lift Lock 8

About a quarter mile north of Oswego Barge Canal Lock 2 is the east wall of Enlarged Oswego Canal Lift Lock 8. The contract for enlarging Lock 8 was let on July 7, 1849, and

¹⁵ Landmarks of Oswego County (1895), p.365.

¹⁶ William H. Campbell, The Life and Writings of DeWitt Clinton (1849), p.74.

completed by September 1851. Dressed face stone from a Split Rock, NY quarry was furnished by the State. The contract for the lengthening of the lock was signed on July 8, 1890 and completed by 1891.¹⁷

A reference to the just-enlarged Lock 8 provides information on more than just the engineering of the lock itself. In early May 1854 the lower gates of the lock broke away and "were so injured as to be worthless; new ones were put in within two days and a half, at an expense of seven hundred dollars. The cause of this breach has not been ascertained, but it could only have occurred through the neglect of the lock-tender."¹⁸

Huhtamaki (Sealright)

In you count its corporate ancestors, the Huhtamaki plant alongside Oswego Barge Canal Lock 2 is likely the oldest, still operating manufacturing concern on the banks of the New York State canal system. Many will more likely know the plant as Sealright, being purchased by the Finnish-based company in 1998. And, most of those who so remember, probably do so from having the small Sealright milk cartons in school in days long ago. The plant continues to make food packaging.

The corporate history at this site begins in 1883 with the Oswego Falls Pulp and Paper Company. The company used the waterpower of the nearby falls.

Phoenix

The Barge Canal through Phoenix is on the same alignment as the 19th-century Oswego Canal. Besides the lock itself, the other most noticeable feature is the modern bascule bridge. It replaced an earlier bascule bridge at the same location, one of two connecting to the island (the remains of the other still show opposite Bridge Street). A third Barge Canal-era lift bridge was located south of the lock. The 1914 operator's house still stands on the east shore. The design of these lift bridges was based on the hope that ships needing greater height clearance could reach Syracuse from Lake Ontario. That there were three bridges in this small community is another story. In September 1916 a tragic fire reduced the numerous factories on the island to rubble. The bridges had just been built but now the need went up in smoke.

The lock house probably dates to 1958, at a time when the State was trying to replace the original units with ones better equipped with "heat, hot water, and sanitary facilities." "Old, cast iron, coal-burning, pot-belly stoves" were removed.¹⁹

¹⁷ Package 1, Oswego Canal Contracts, Series A1899 (Box 49), New York State Archives; Annual Report of the State Engineer and Surveyor (1891), p.116; (1892), p.209.

¹⁸ Annual Report of the Canal Commissioners (1855), p.83.

¹⁹ Annual Report of the Department of Public Works (1958), p.81; (1955), p.74.

Further to the south, about a quarter mile beyond the bridge operator's house, was the Louis Henley shipyard. The business apparently did not survive the completion of the Barge Canal for by 1919 the site was occupied by the municipal water works.

Lysander Canal Section Shops

The maintenance shops were relocated here to these custom-designed quarters in 2003, having been at the Syracuse Barge Canal Terminal since 1927.

Tug *Urger*

The most comprehensive history of the 1901 tug *Urger* is Mark Peckham's nomination form for its placement on the National Register of Historic Places. It earned that recognition on the Register in 2001.

Go to - <https://www.nps.gov/subjects/nationalregister/database-research.htm>

Quoting from the Peckham history, "The boat now named *Urger* was built as the fish tug *H. J. Dornbos* by the Johnson Brothers Shipyard and Boiler Works at Ferrysburg, Michigan. She was built for Verduin and Company of Grand Haven... and named after Henry J. Dornbos, one of the leading wholesale fish dealers in the region. After she was launched on June 12, 1901, the *Detroit Free Press* reported that the "steel fishing tug *Henry J. Dornbos*... will be the finest boat in the local [Grand Haven] fishing fleet."

In September 1922 the New York State Department of Public Works purchased the *Urger* as it sought to build up its maintenance floating plant in light of the new demands of the new Barge Canal system. In 1949 its 150-horsepower steam engine was replaced with a war surplus 320-horsepower Atlas diesel purchased from the US Navy. It was removed from active maintenance service in 1986. In 1991 it found its new career as an educational ambassador for the canal system.

It continued in its new role as an educational flagship for the New York State Canal Corporation until 2016. By then, over 100,000 students had stepped aboard the *Urger*. Society member and the *Urger*'s captain at the time, Steve Wunder, captured that spirit when he stated that "The *Urger* is equal parts flagship, museum, classroom and time machine; a vestige from another time, but also a perfect venue from which to reinforce the contemporary relevance and significance of today's Canal system."

The *Urger* was soon thereafter removed from service due to concern as to its condition and safety, issues that are currently being addressed. In September 2021 the *Urger* was moved from the Waterford drydock to its current berth at Lysander, waiting for more study as to its future. Whether it will ever return to the water is still an unanswered question.

Tug *Seneca* by Bill Orzell

One of the unique vessels long seen on New York's canal network is the tug *Seneca*... The tugboat was originally constructed for the United States Navy in 1932 by a division of the Electric Boat Company in Boston, Massachusetts. This craft was designed for yeoman duties and basic services within a navy yard, shifting equipment and assisting ships of the line to berth. This craft was one of many built for the Navy designated at "Yard Tug-Light," or the military acronym YTL. The vessel was originally labeled by the Navy as the *USS YTL-479*.

The *YTL-479* carried, as part of her operational equipment, a large displacement flushing pump and a fire station on top of her pilothouse. One of the tug's primary duties in any naval yard assignment was to provide a mobile platform for fire and damage control, with the large pump powering the fire fighting station and also a standby pump that would assist damaged ships. The *YTL-479* was also equipped with torpedo racks, not for offensive purposes, but to transfer this primary naval ordnance to other craft such as destroyers and submarines.

The State of New York's Department of Public Works acquired the *YTL-479* in 1960, for use as a maintenance vessel on the Barge Canal. The late Joe Stellato, retired Director of the Canal System, recalled for *Bottoming Out* his memories of the purchase of the tug. The *YTL-479* was assigned to the Brooklyn Navy Yard where the vessel was decommissioned in 1947. The tug was not maintained in an operational condition by the US Navy prior to her point of separation and surplus. For this reason the *YTL-479* had to be taken in tow at the Brooklyn Navy Yard by the tug *Urger* and towed through New York Harbor and up the Hudson River to the state drydock at Waterford, on the Barge Canal. Mr. Stellato expected all kinds of "red-tape" with the transfer from the Federal to the State government and was amazed that there was none. The tug was immediately redesignated as the *Seneca*, replacing a craft of the same name that had been operated by the Department of Public Works for many years and was beyond rehabilitation.

The original *Seneca* had been built as a steam tug in 1920 at the American Boiler Works in Erie, Pennsylvania. The seventy-foot steel vessel was originally named *P. J. Grant*. New York State acquired the vessel in 1928 shortly after its conversion from steam to diesel propulsion. The craft was named by canal superintendent Guy Pinck in honor of the largest of the Finger Lakes. Joe Stellato explained that the old *Seneca* was retired from service and disposed of, and the *YTL-479* designated as *Seneca* concurrently, as a fiscal/budgetary shuffle, a maneuver practiced for maritime procurement since the sailing of the first fleet.

The *Seneca* had a new galley added at Waterford that would provide greater utility to her new assignment as a canal maintenance tug. The vessel also shed her Navy gray paint scheme for the livery of the Empire State. There was a great deal of difficulty involved in securing information about the design modifications incorporated by the Navy through the

years since her construction. These difficulties and financial constraints prevented the *Seneca* from being a functioning member of the floating plant until 1968, when the tug was transferred to the Syracuse shops for a thorough going over.

The *Seneca* is powered by two 220-horsepower Cummins diesel engines that are mounted side by side. They, in turn, drive two General Electric exciters that are coupled through a belt drive to a single propeller. This arrangement gives the craft dual engine reliability through a single drive train.

The *Seneca* provided motive power to all types of canal maintenance equipment. The tugboat was used for shifting equipment, assisting dredging operations and removal. The vessel was operated by a crew of four, with accommodations aboard to be self-contained. The *Seneca* has immense fuel tanks incorporated into her hull from her days as a Navy tug. This plentiful diesel fuel carrying capacity allowed the craft to serve as a tanker to supply remotely located equipment along the canal system.

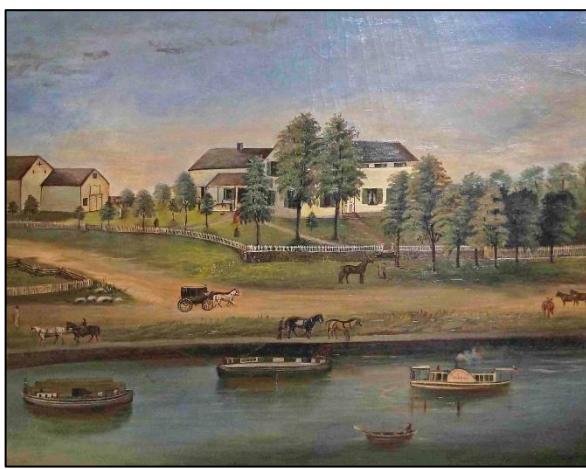
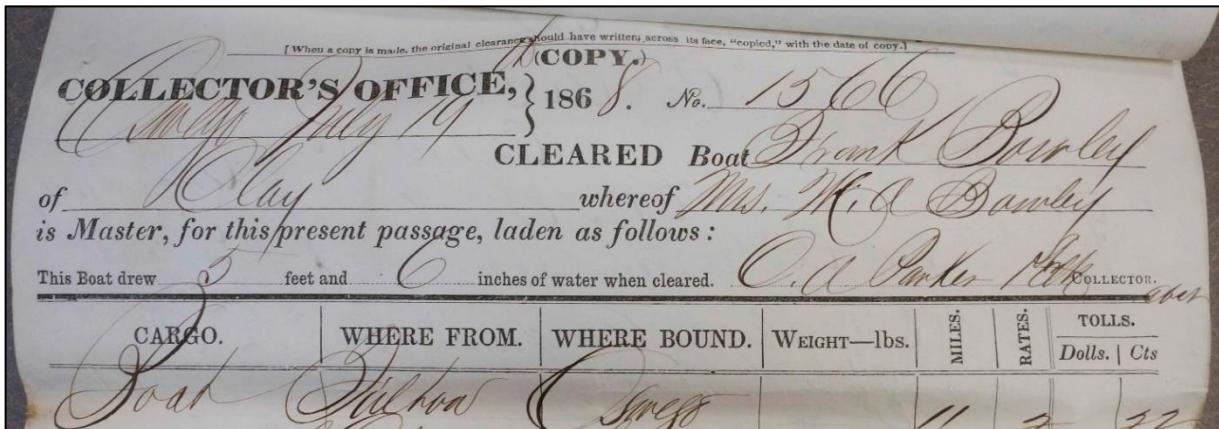


Figure 2 (upper left). Southern terminus of the Oswego Canal, in Syracuse, 1834; Figure 3 (upper right). Pulling on the Oswego Canal south of Oswego; Figure 4 (center). Bill of lading for Mrs. Bowley, master of the *Frank Bowley*; Figure 5 (bottom left). The Eno House at the Gascons south of Three Rivers, c1860; Figure 6 (bottom right). The *Day Peckinpaugh* at Oswego Barge Canal Lock 1 marking the 1963 completion of the 1935 Improvement.

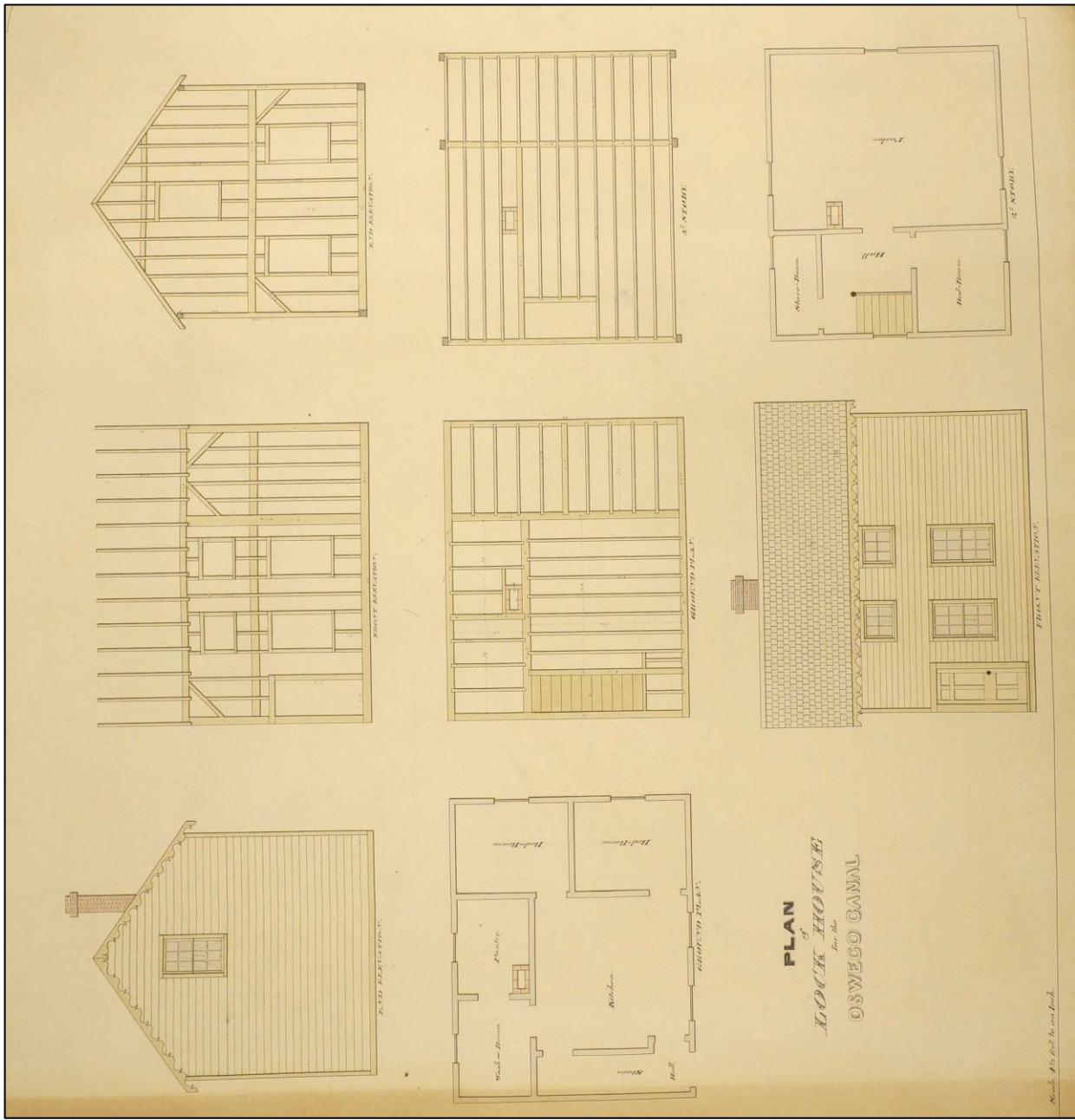


Figure 7. Plans for lock houses on the Oswego Canal, c1855 (New York State Archives).

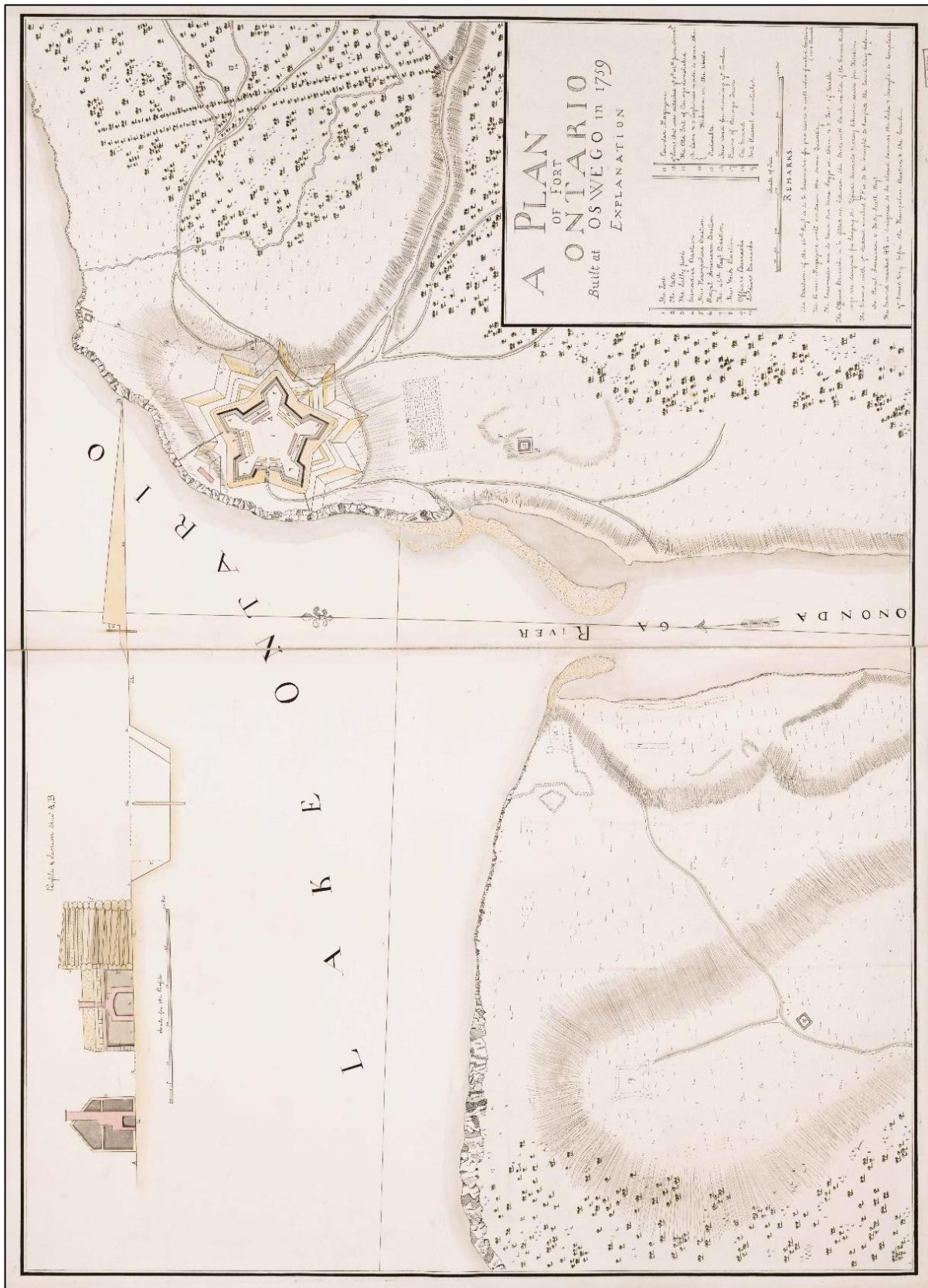


Figure 8. 1759 map of Oswego.

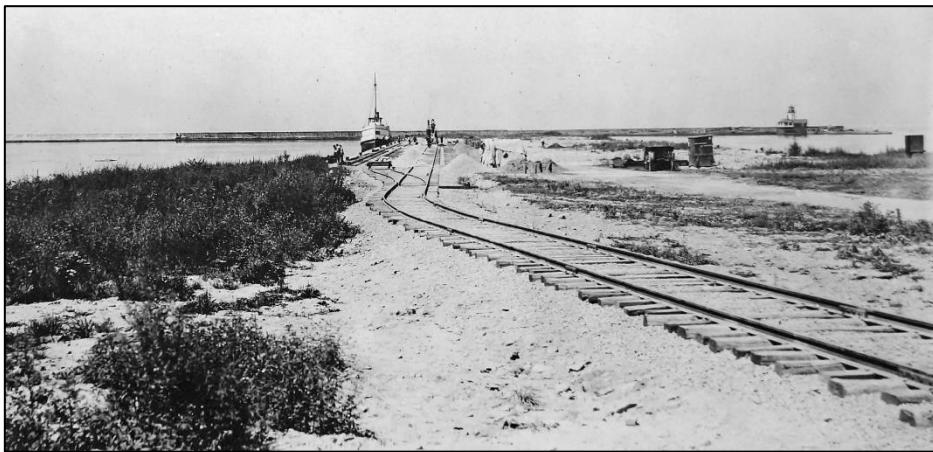
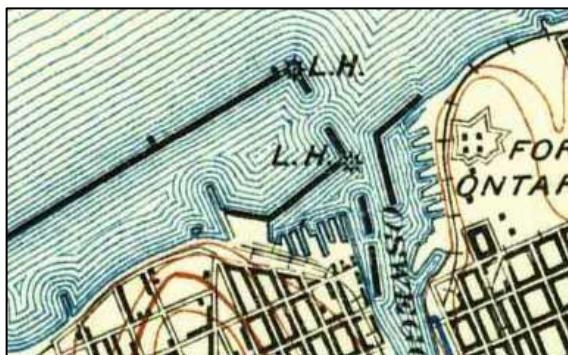


Figure 9 (top). Aerial view of Oswego, c1935; Figure 10 (center left). USGS map of Oswego Harbor, 1900; Figure 11 (center right). USGS map of Oswego showing extended pier for grain elevator, 1943; Figure 12 (bottom). Grain elevator pier under construction, July 1918.

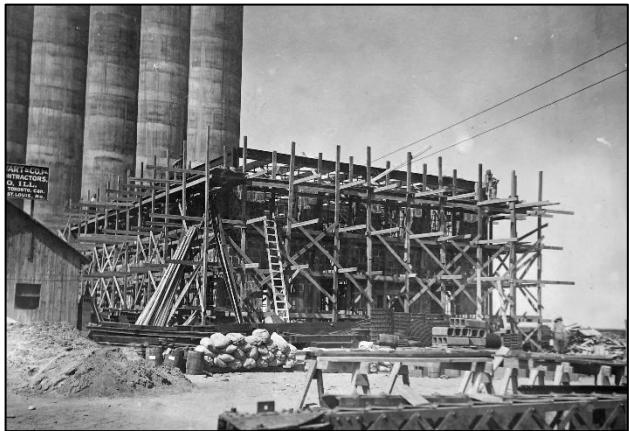
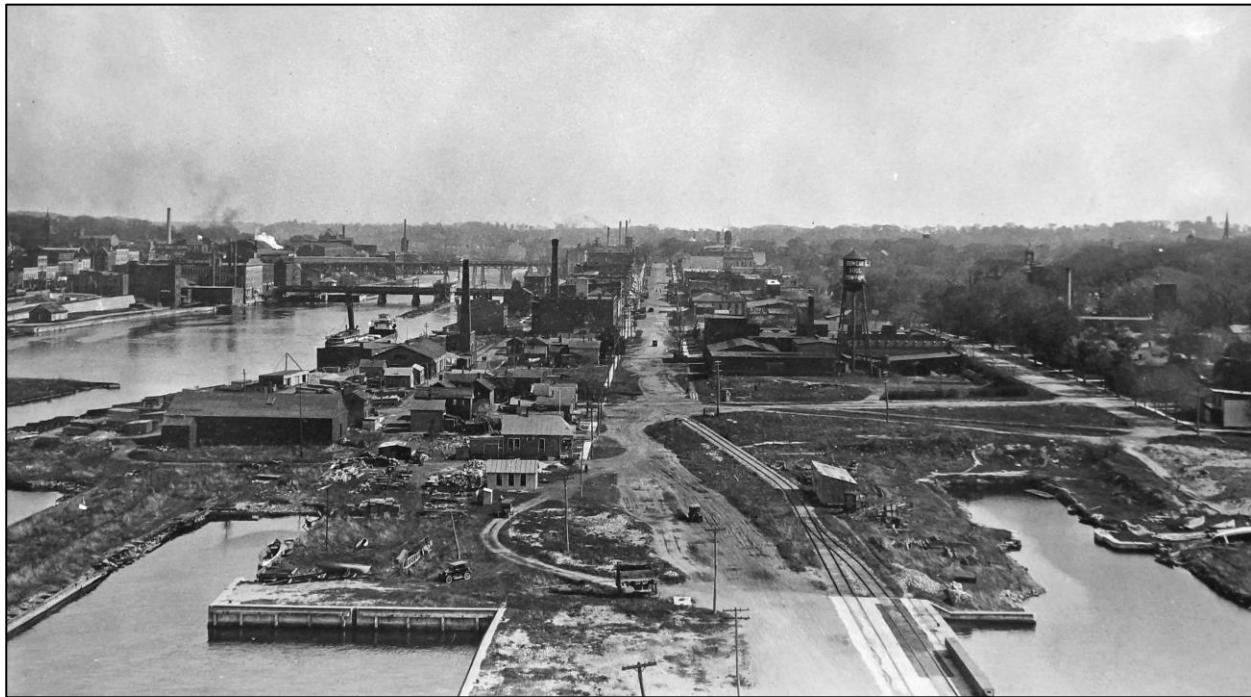


Figure 13 (top left). Grain elevator administration building under construction, August 21, 1924; Figure 14 (top right). Grain elevator administration building, May 18, 1925; Figure 15 (bottom). New York State Barge Canal Grain Elevator complex, looking northeast, c1930.



T. 30. 3001. View north from Pa. G. & E. Co. Building showing Terminal site.

June 16, 1916.



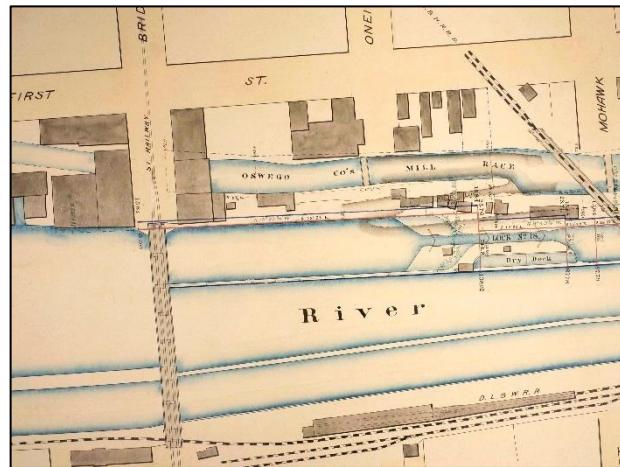
Figure 16 (top). View from top of grain elevator looking south down First Street, May 18, 1925; Figure 17 (bottom). Preparing the site for the State's Barge Canal Terminal at Oswego, looking north, June 16, 1916.



Figure 18 (top). Looking northwest over the prepared site for the State's Barge Canal Terminal at Oswego, March 18, 1918; Figure 19 (bottom). Looking northeast at Barge Canal Terminal at Oswego with the 1919 Barge Canal freight house to the right, June 15, 1922.



Figure 20 (top). Barge Canal freight house at Oswego Terminal, June 15, 1922; Figure 21 (bottom). Looking south towards Enlarged Oswego Canal Lift Lock 18, October 17, 1907.



Figures 22, 23, 24. Overlay of c1896 Schillner map onto modern aerial of Oswego Barge Canal Lock 8.

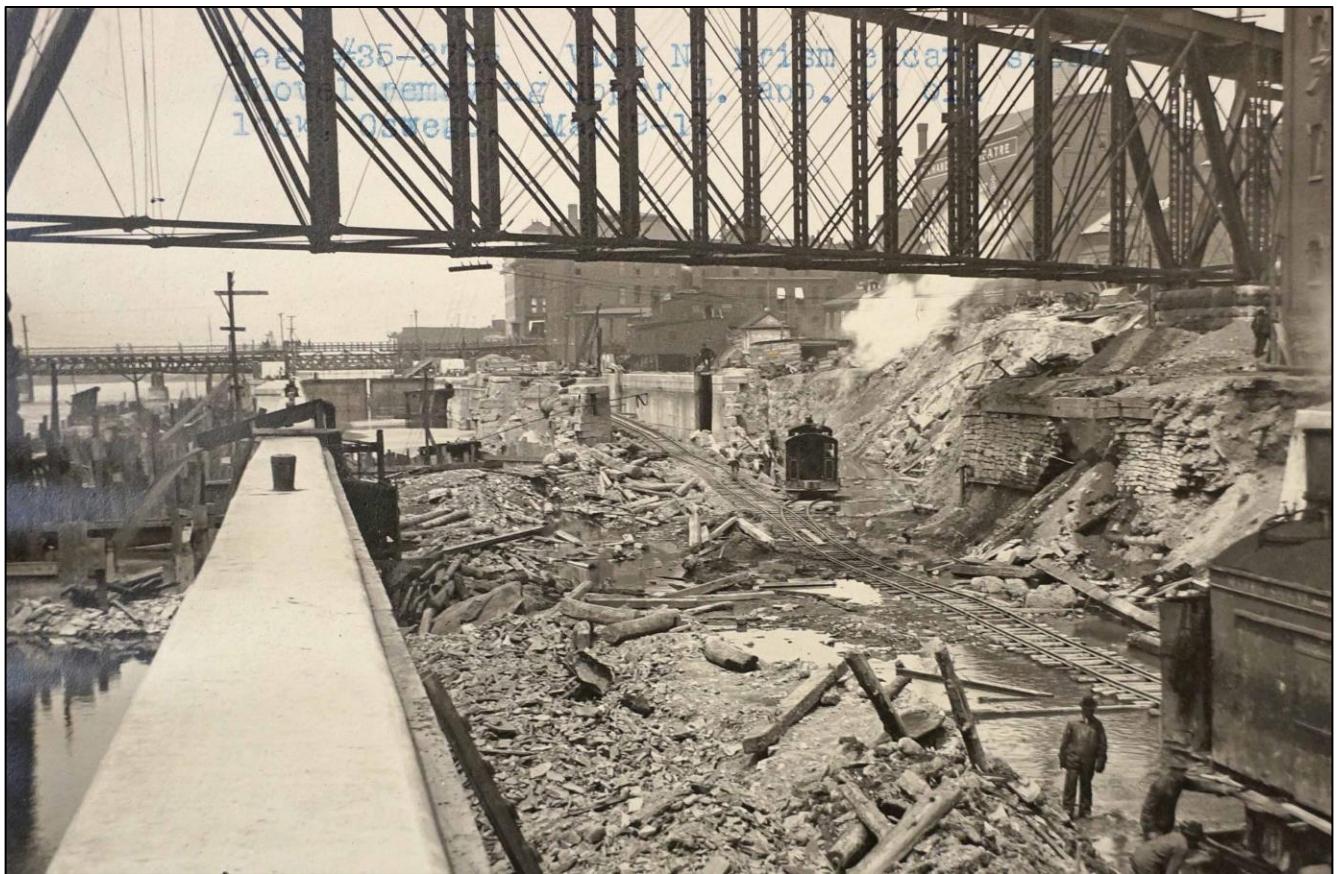
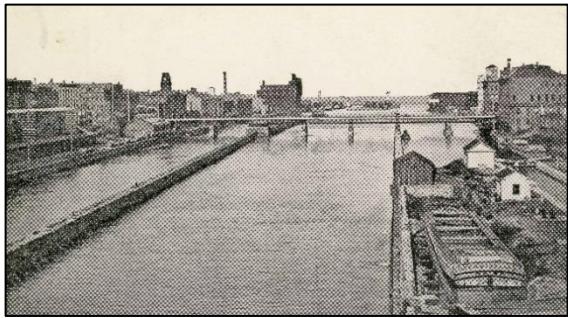


Figure 25 (top left). View north down the Oswego River with Enlarged Oswego Canal Lock 18 on right, c1905; Figure 26 (top right). View north down the Oswego power canal on right with Lock 18 on left; Figure 27 (bottom). View north down the channel of the Barge Canal with Oswego Barge Canal Lock 8 in the distance on left and Enlarged Oswego Canal Lift Lock 18 on right.

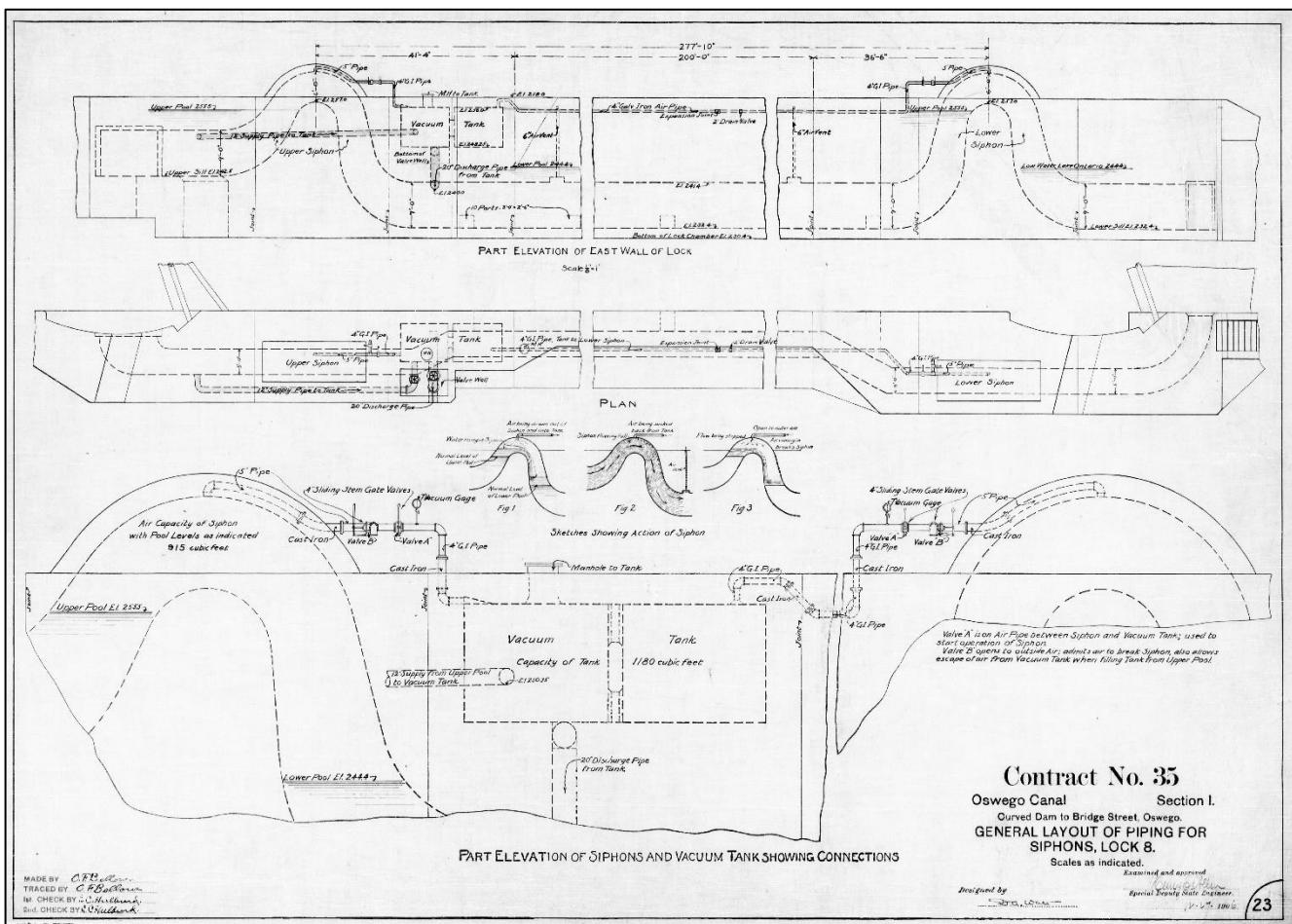
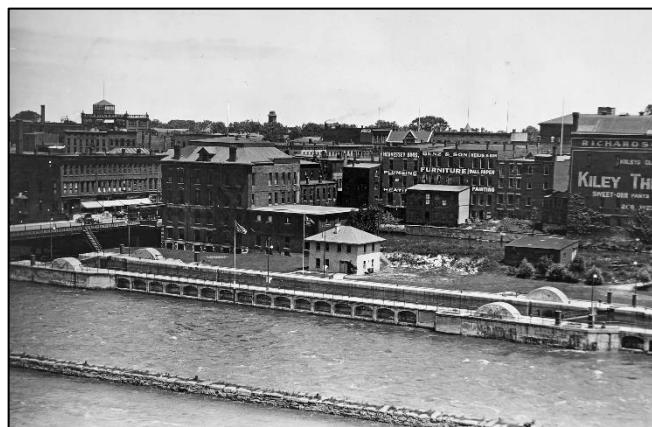


Figure 28 (top left). View southeast along the nearly complete Oswego Barge Canal Lock 8; Figure 29 (to right). View east of Oswego Barge Canal Lock 8 from the west bank, June 15, 1922; Figure 30 (bottom). Contract 35 plans for the siphon system at Oswego Barge Canal Lock 8, December 27, 1906.

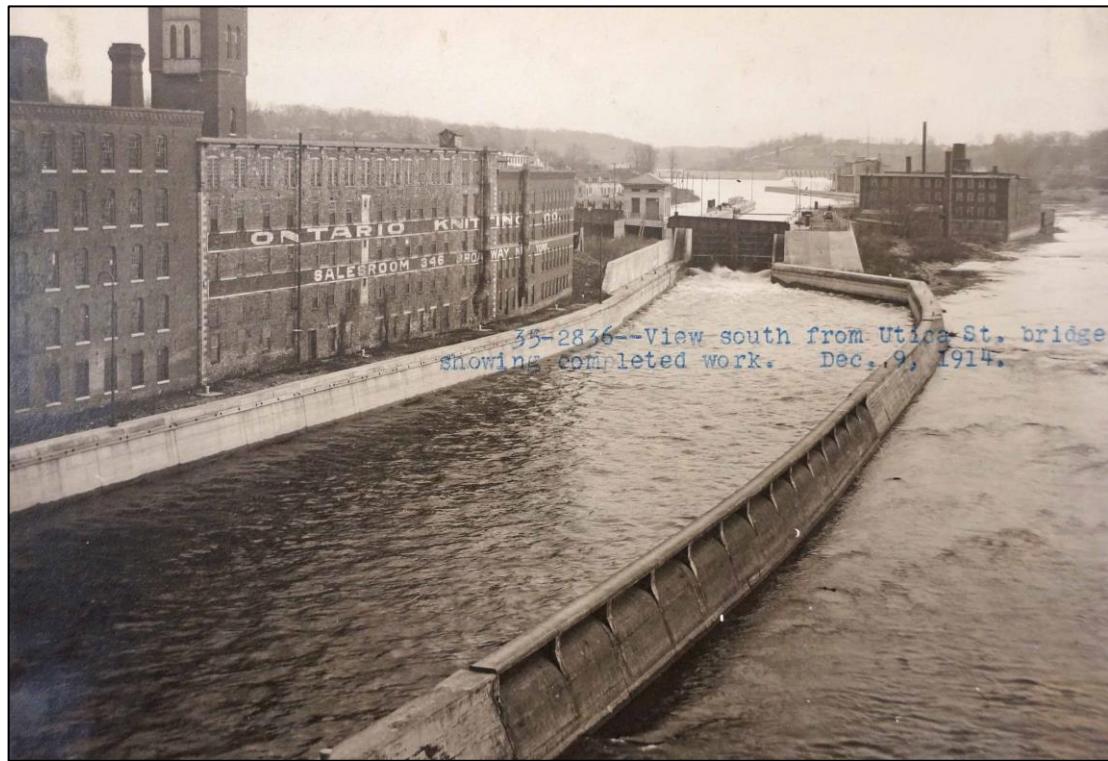
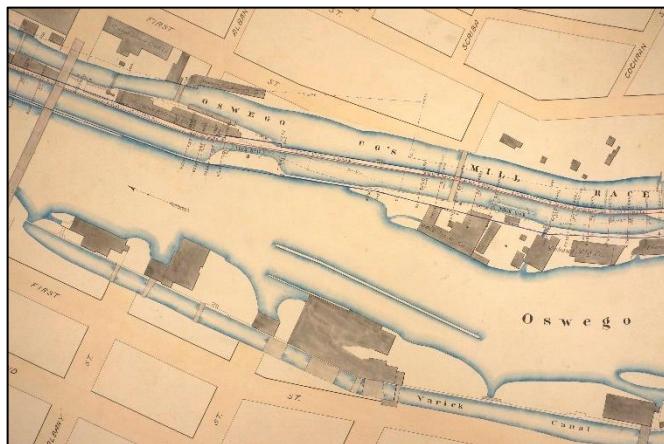


Figure 31 (top). View south towards Enlarged Oswego Canal Lift Lock 17 in center, October 17, 1907; Figure 32 (bottom). View south towards Oswego Barge Canal Lock 7, just south of former location of Lock 17, December 9, 1914.



Figures 33, 34, 35. Overlay of c1896 Schillner map onto modern aerial of Oswego Barge Canal Lock 7.

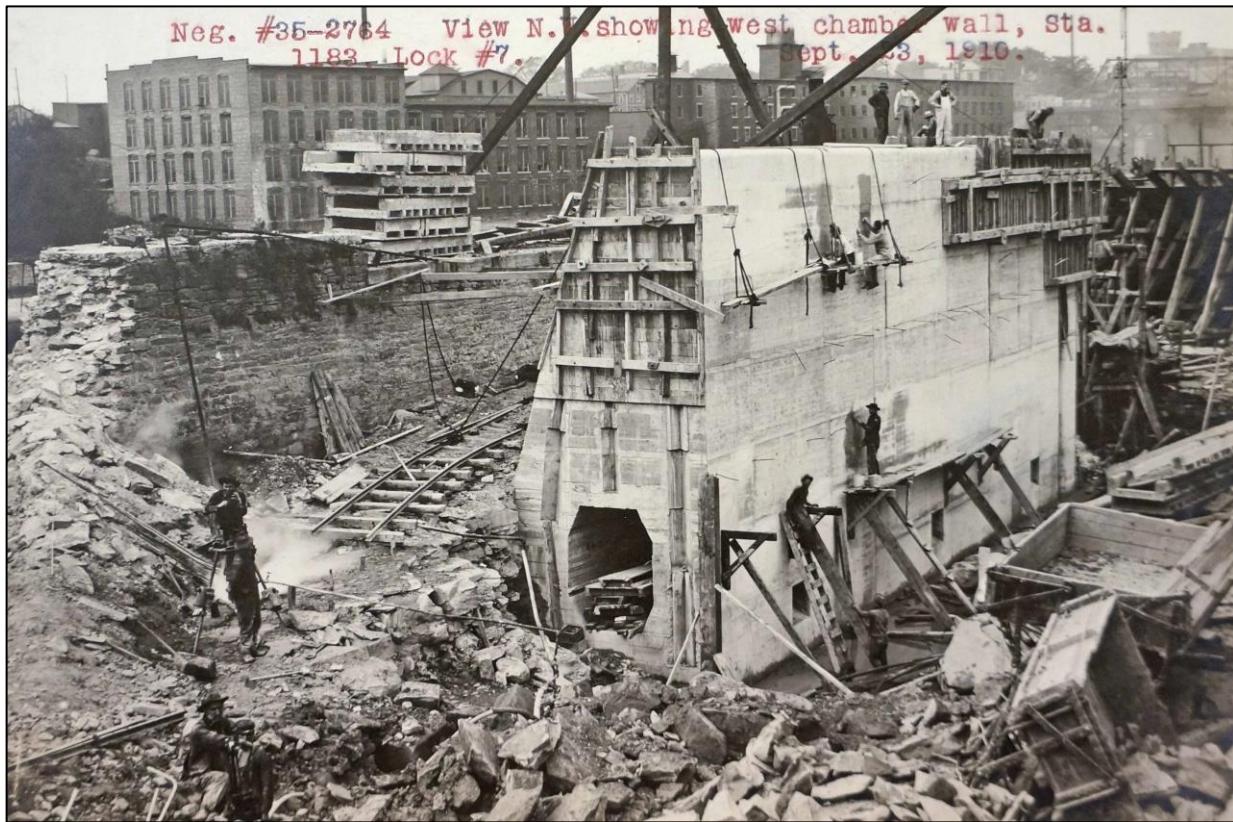


Figure 36 (top). Oswego Barge Canal Lock 7 under construction showing west chamber wall, September 23, 1910; Figure 37 (bottom left). Map showing Varick Canal (bottom) and Oswego power canal (top), c1850; Figure 38 (bottom right). Bulkhead and lock at entrance to the Varick Canal, May 29, 1906.

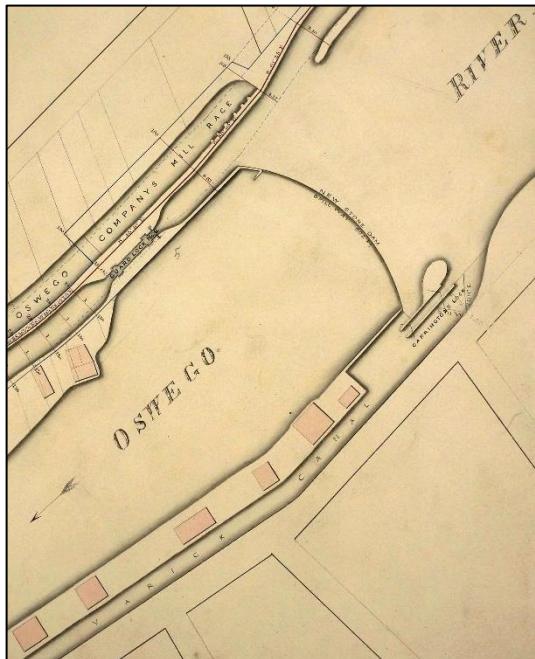




Figure 39 (top). Looking south towards the Oswego Weighlock, November 14, 1906; Figure 40 (bottom). East facade of the Oswego Weighlock, November 14, 1906.

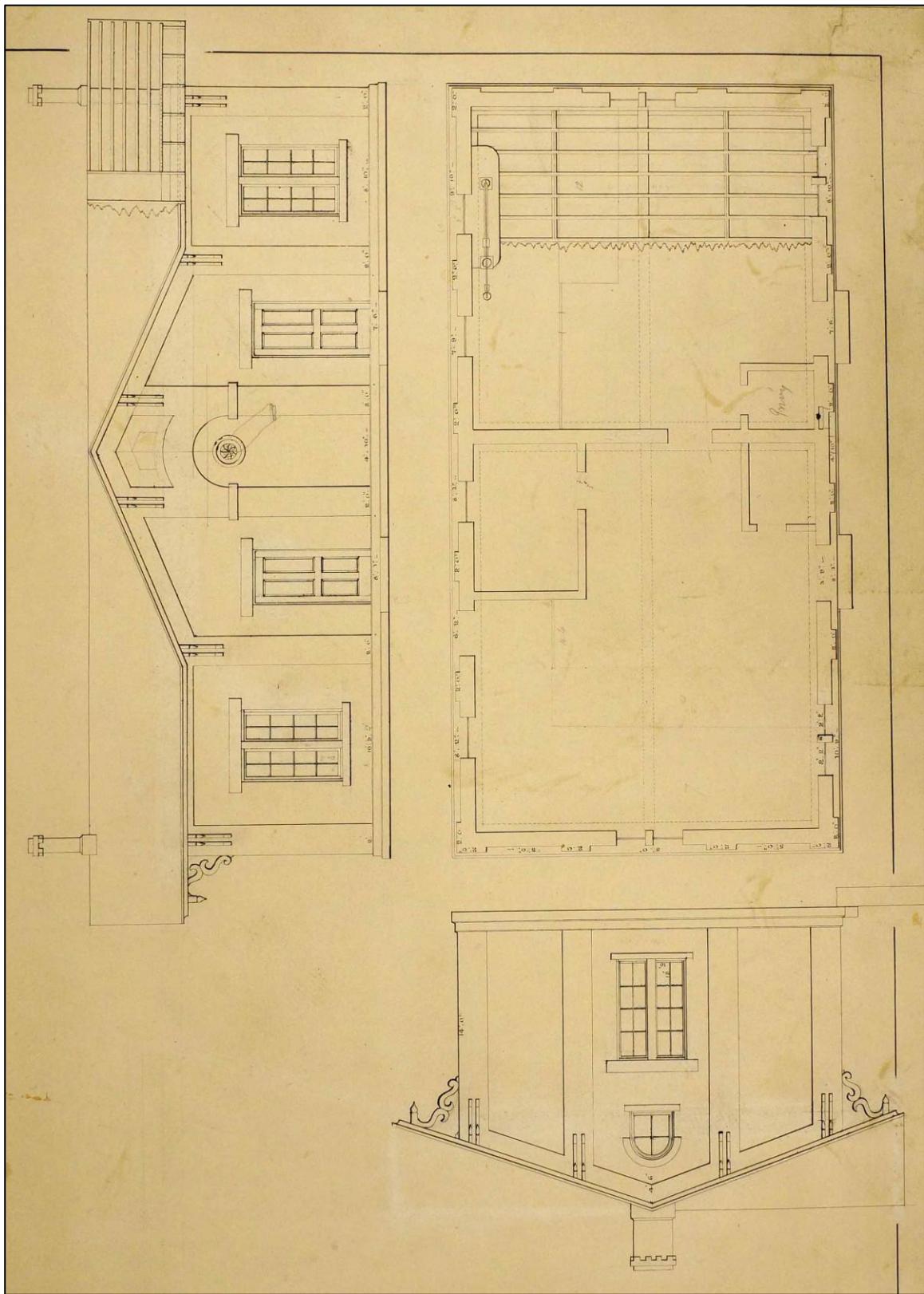
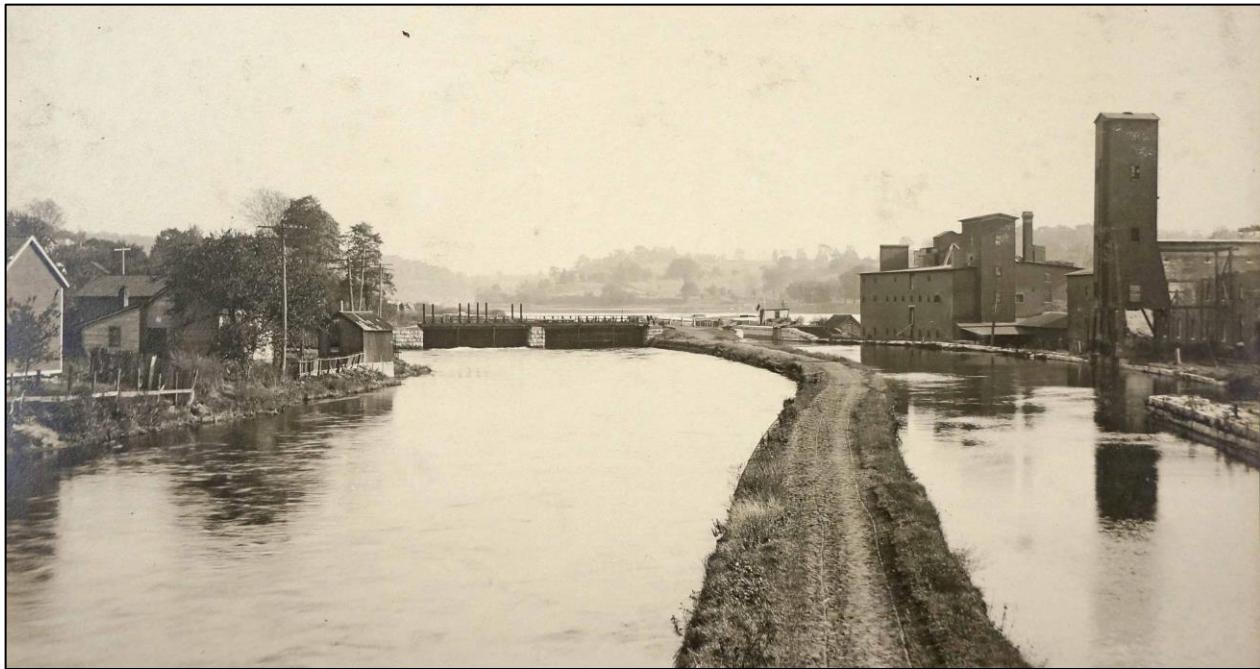


Figure 41. Plans for the Oswego Weighlock, c1863.



Neg. #35-2814 View E. showing excav. old guard lock and bulkhead
Nov. 20-12



Figure 42 (top). View south towards Enlarged Oswego Canal Guard Lock 5 (right) and the bulkhead to the Oswego power canal (left) with the corner of the Weighlock pier on the far right, October 17, 1907; Figure 43 (bottom). View southeast over the guard lock and power canal bulkhead, November 20, 1912.

Neg. 37- 2831-- View from West bank of river, showing
CLAIMANT'S EXHIBIT removal of buildings, High Dam.

No. 172

Anna E. Cullinan, Stenographer.

July 14, 1914.

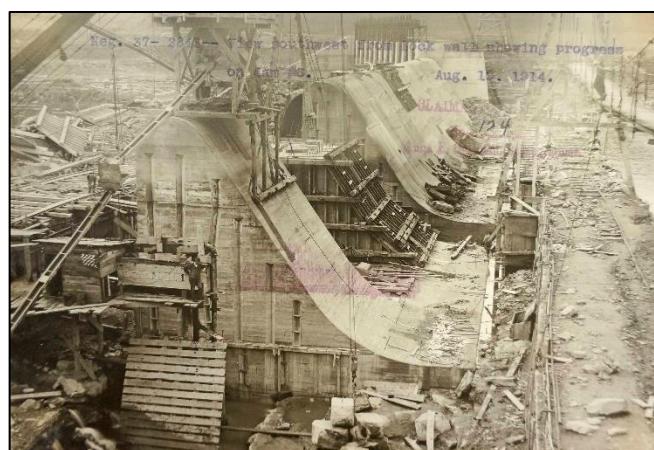
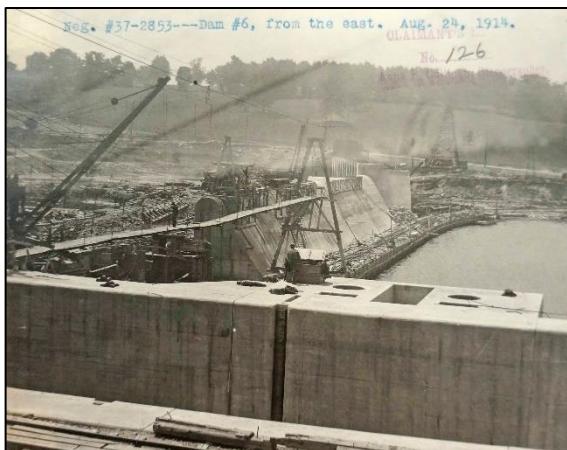
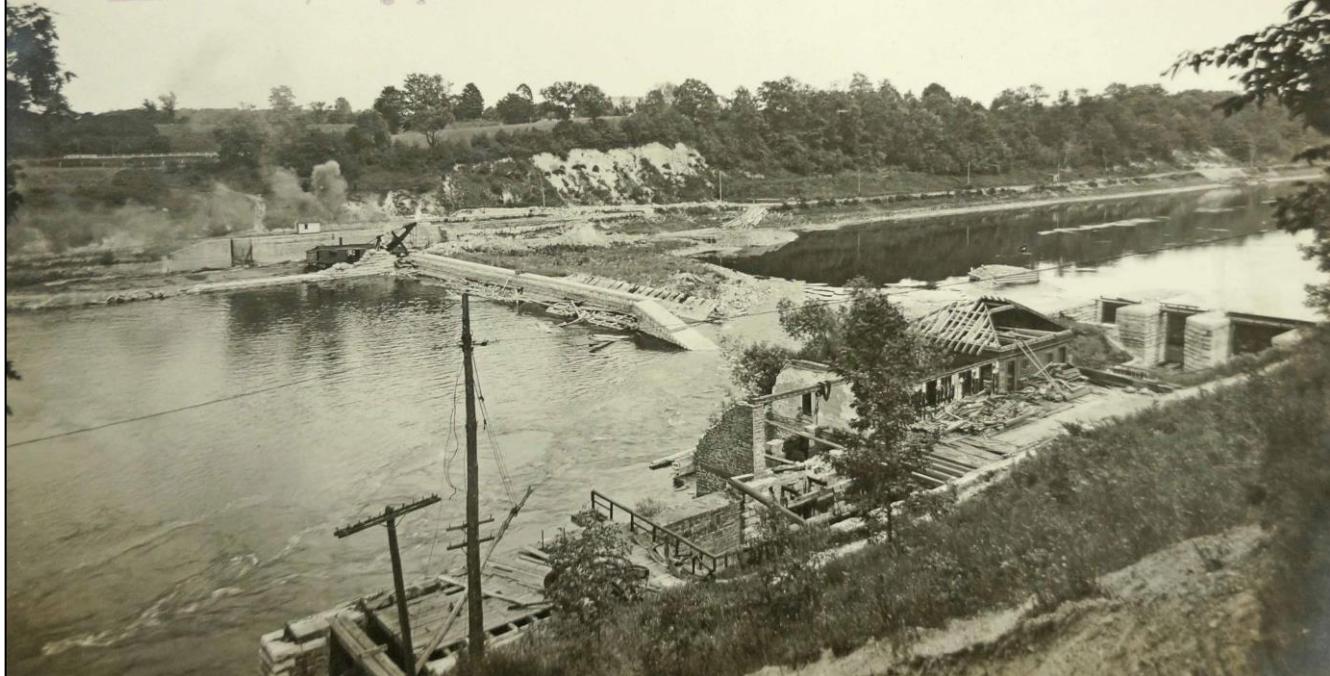


Figure 44 (top). View east over High Dam with Enlarged Oswego Canal Lift Lock 15 beyond steam shovel, July 14, 1914; Figure 45 (bottom left). View west over Oswego Barge Canal Lock 6 under construction, August 24, 1914; Figure 46 (bottom right). View west over the construction of Dam 6, August 14, 1914.

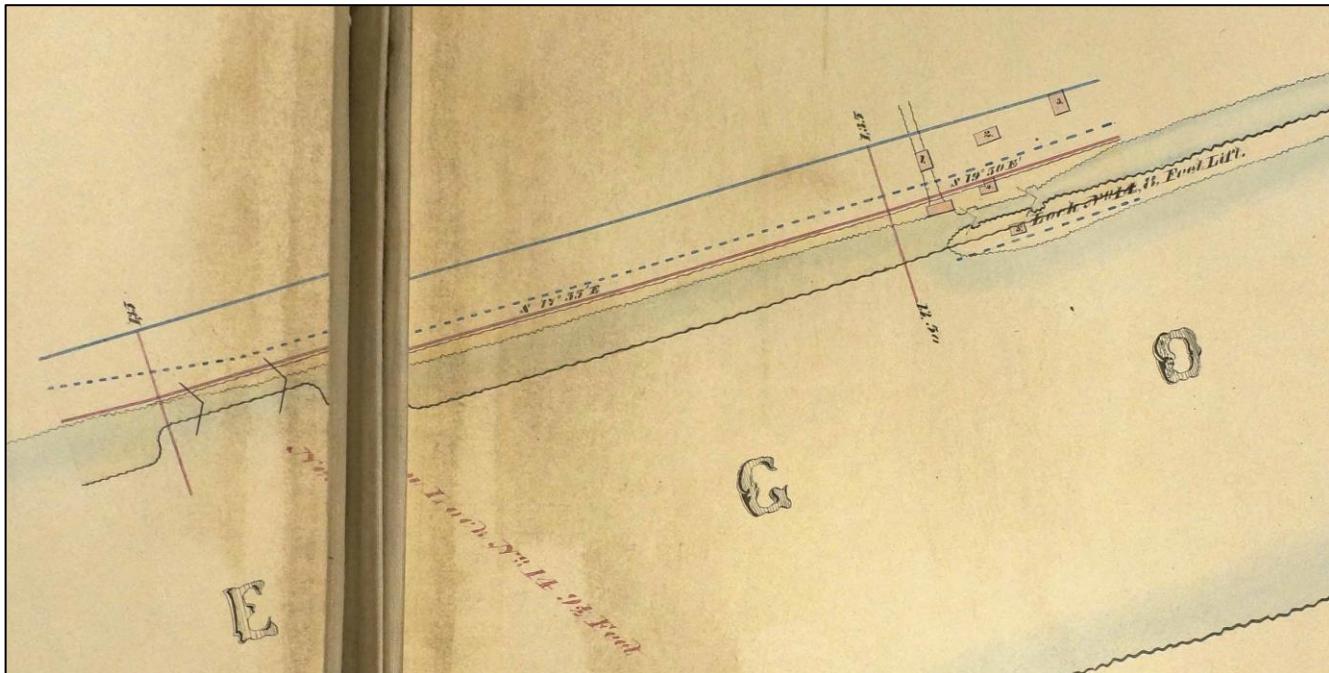
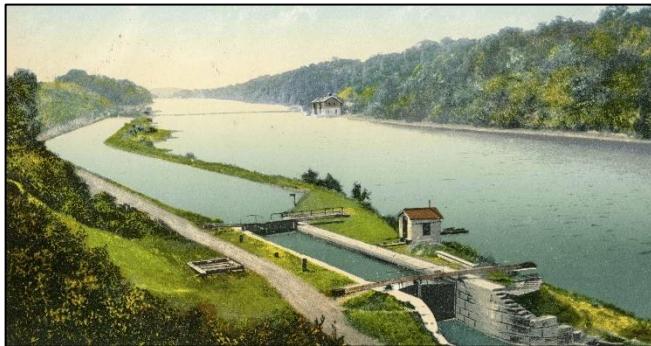


Figure 47 (top left). Looking south over Enlarged Oswego Canal Lift Lock 14, c1905; Figure 48 (top right). Looking south over Enlarged Oswego Canal Lift Lock 14, c1905; Figure 49 (center). Cover for contract to enlarge Oswego Canal Lift Lock 14, c1851; Figure 50 (bottom). Map showing proposed location (left) of Enlarged Oswego Canal Lift Lock 14 with Ditch-era predecessor to right. Buildings include a sawmill, grocery, lock house and two dwelling houses, c1847.

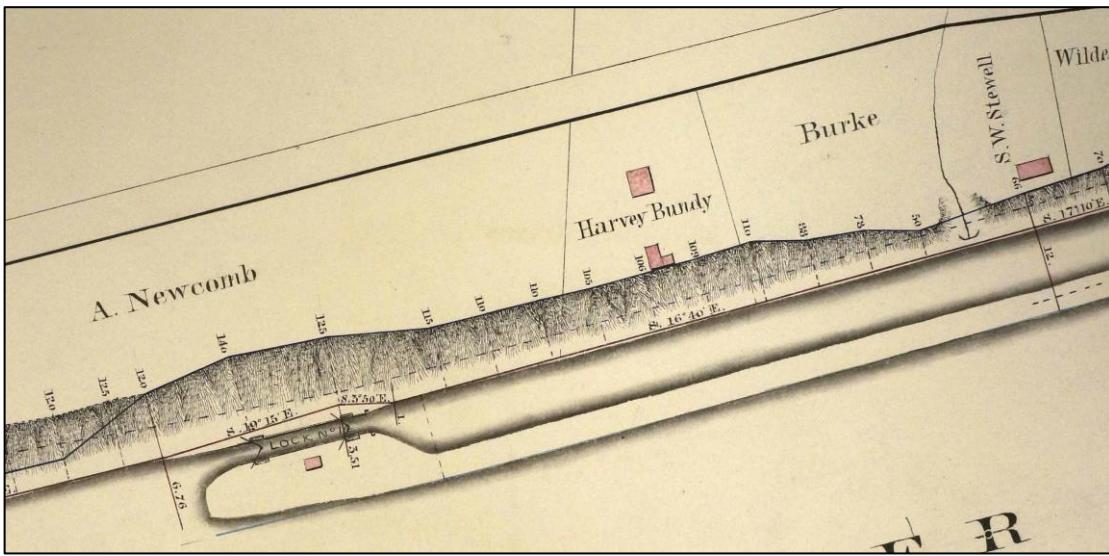
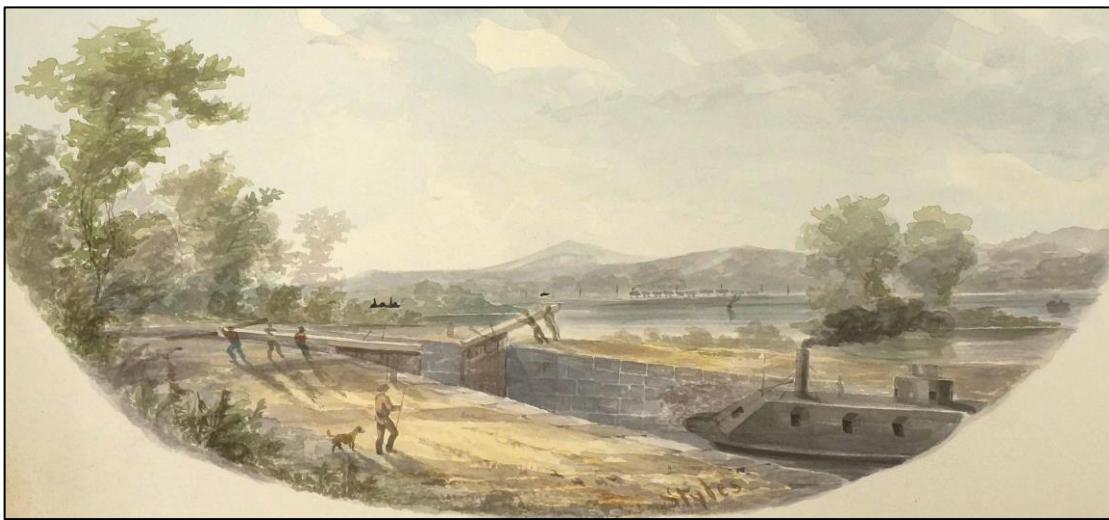
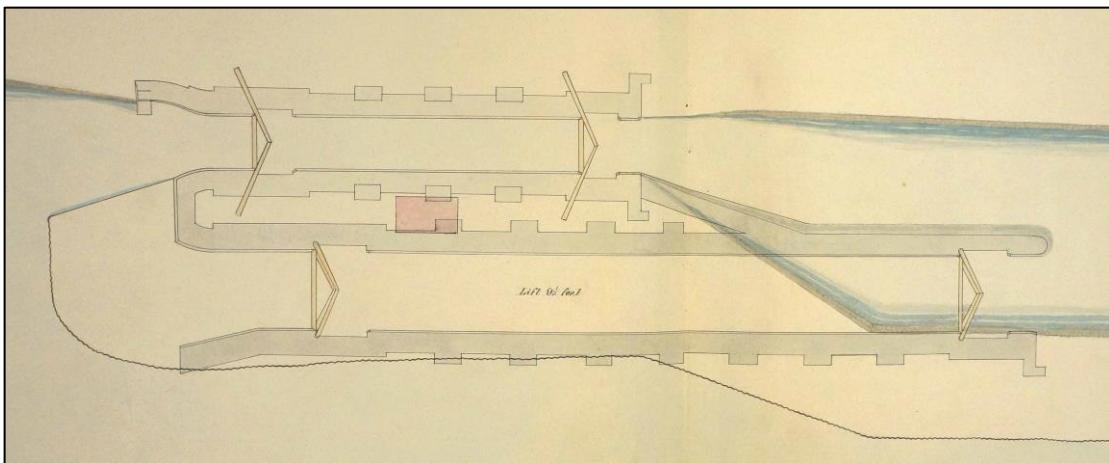
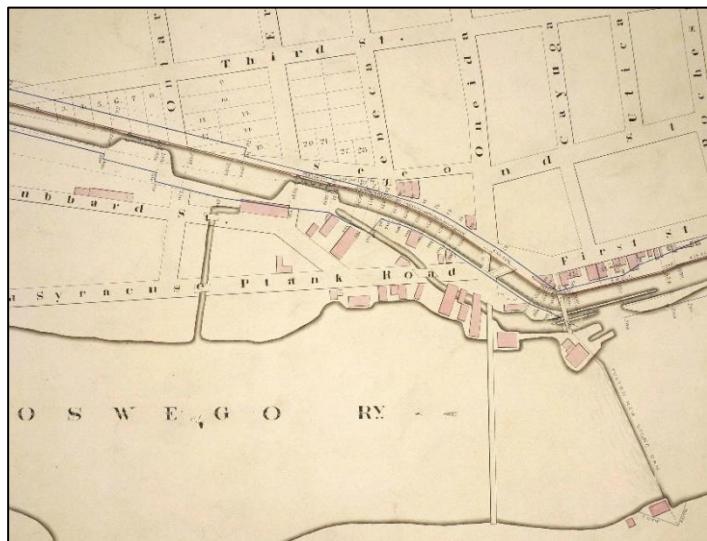


Figure 51 (top). Plans showing design for proposed (never built) gunboat lock at Enlarged Oswego Canal Lift Lock 14, 1863; Figure 52 (center). Rendering of proposed gunboat locks on the Enlarged Oswego Canal, 1863; Figure 53 (bottom). Map of Enlarged Oswego Canal Lift Lock 14 with creek and culvert to right where sawmill once stood, c1860.



Figures 54, 55, 56. Overlay of c1860 map of Fulton on modern aerial of Oswego Barge Canal Lock 3.



Figure 57 (top). View south with Enlarged Oswego Canal Lift Lock 8 in the far distance and the south chamber of the river connecting locks in the foreground right, April 28, 1908; Figure 58 (bottom). Looking south along the west chamber wall of Oswego Barge Canal Lock 2 under construction, August 23, 1910.

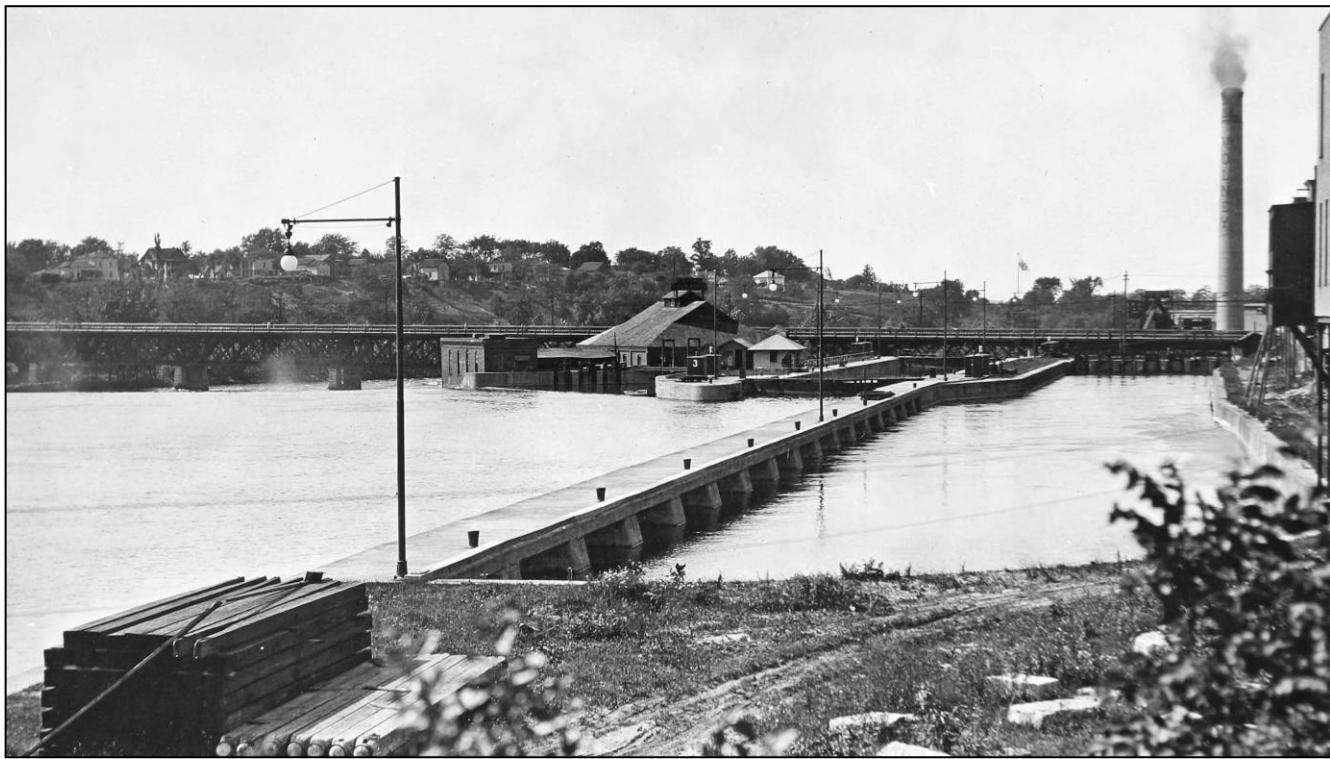
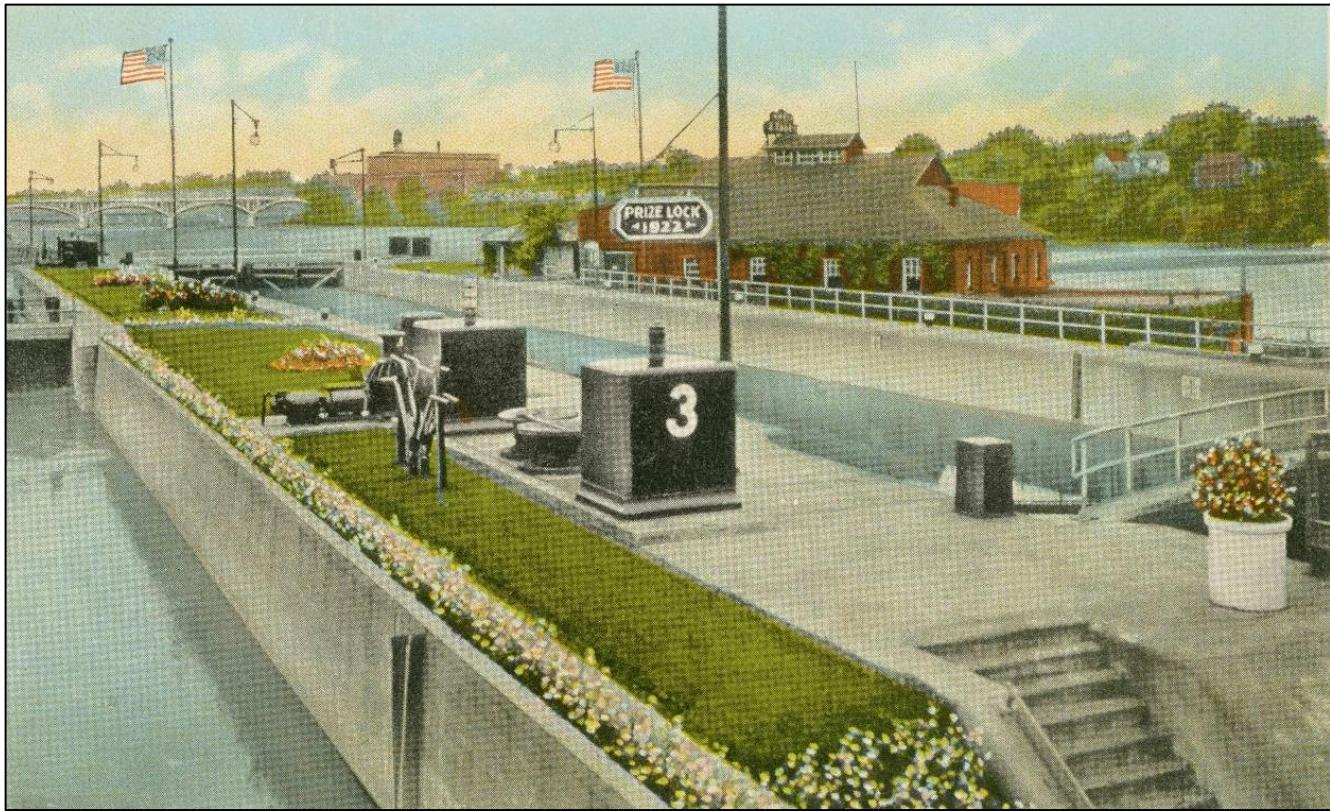


Figure 59 (top). View southwest over Oswego Barge Canal Lock 3, the 1922 Prize Lock, with the Fulton power canal to left, c1905; Figure 60 (bottom). View north towards Oswego Barge Canal Lock 3 with old power canal to right, June 15, 1922.

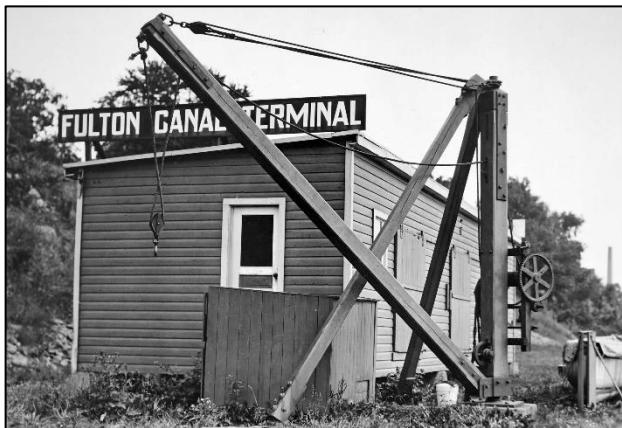


Figure 61 (top). Aerial view of Oswego Barge Canal Lock 3, October 30, 1945 (New York State Museum); Figure 62 (bottom left). Fulton Barge Canal Terminal freight house, August 1, 1922; Figure 63 (bottom right). Fulton Barge Canal Terminal freight house, June 1963.



Figure 64 (top). View north over Enlarged Oswego Canal Guard Lock 1 in Phoenix, c1905;
Figure 65 (bottom). View north over construction of Oswego Barge Canal Lock 1 with Guard Lock 1 in foreground, August 16, 1910.

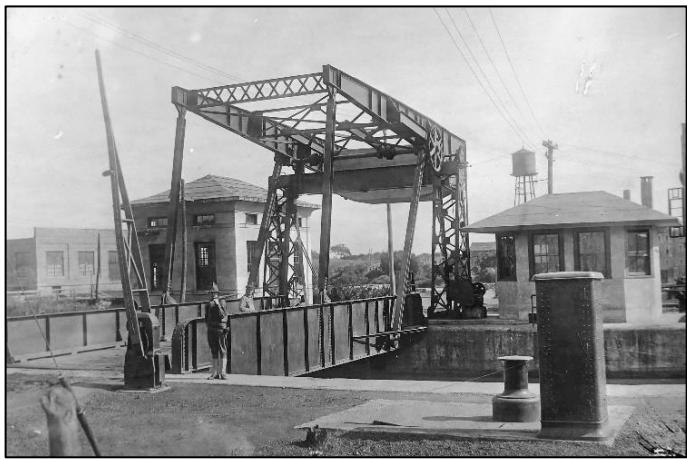


Figure 66 (top left). Lift bridge at Oswego Barge Canal Lock 1, November 1, 1917; Figure 67 (top right). Burned Barge Canal power house from the September 1916 Phoenix fire, September 1916; Figure 68 (bottom). Looking south at lift bridge over Oswego Barge Canal Lock 1, May 12, 1912.



Figure 69 (top). Looking north at lower end of Oswego Barge Canal Lock 1, October 1970;
Figure 70 (bottom). Looking south at Phoenix lift bridge, October 1970.



Figure 71 (top). *H. J. Dornbos*, later *Urger*, underway, c1905; Figure 72 (bottom). *Urger* at Waterford Canal Section Shops, October 1987.



Figure 73 (top). Navy Tug YTL-479, later Seneca, Waterford Drydock, c1961; Figure 74 (bottom). Seneca near Montezuma, June 26, 1989.

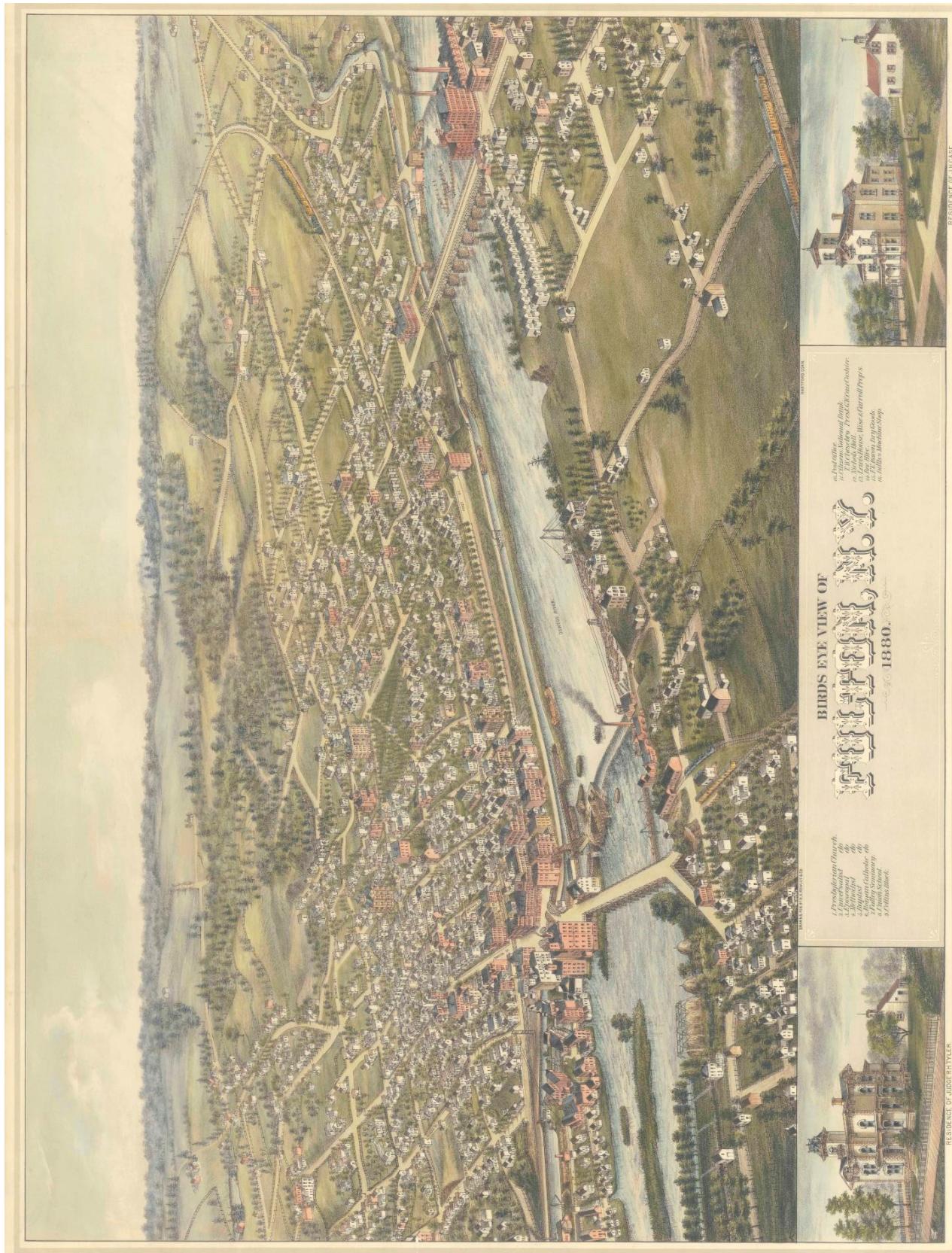


Figure 75. View east over Fulton, 1880.