

**Field Trip Guide  
October 6-9, 2023**

**Bicentennial  
of the  
Champlain Canal**

**Canal Society of New York State**

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Cover Illustration (Figure 1). Detail of published score for the Grand Canal March, performed for the October 8, 1823 celebration of the first boats from the Champlain and Erie Canals to enter the Hudson at Albany.

## Dedication



Figure 2. Fred Godfrey (right), wearing his Fort Edward Fire Department cap, alongside Art Cohn and behind the wheel of the *Lois McClure* in Whitehall, July 3, 2005.

Any Society program dealing with the Champlain Canal brings back memories and appreciation for Fred Godfrey (1915-2006). A fourth-generation canaler, Fred shared his family's histories and his extensive canal experiences through books, programs and always-valued conversation. His "Champlain Canal - Mules to Tugboats" (1994) remains a go-to book for recollections of canal life. Along with other members of the Godfrey family, he worked the State's waterways for decades. They were also long-time members of the Society. We dedicate this guide and tour to Fred, knowing that he could have added so much more.

## October 8, 1823 - A Celebration

The pride that New Yorkers had in their new age of canals is certainly reflected in the many celebrations that marked seemingly every stage of completion. While the Wedding of the Waters of 1825 shadowed over all of them, it is still worth revisiting the excitement and participation of the earlier celebrations. In October 1819 dignitaries and countless citizens applauded the first boat on the Erie as it traveled from Utica to Rome. A month later a similar contingent also traveled with much fanfare the just completed section of the Champlain Canal between Fort Edward and Whitehall.<sup>1</sup> On September 23, 1823 the *Gleaner* from Saint Albans, Vermont was greeted with celebrations in Waterford and Troy as the first to traverse the just completed Champlain Canal. But especially noteworthy are the festivities of October 8, 1823 that marked the entrance of the first canal boats from the Erie and Champlain into the Hudson at Albany. It was an affair that rivaled if not surpassed the 1825 event in recognizing the completion of the Champlain Canal and the Erie Canal as far as Rochester and featured its own dedicated music, the *Grand Canal March*.

As reported in the *Albany Argus* it began...

"On Wednesday the 8th inst. the thunder of artillery and the pealing of bells announced the arrival of a day which will ever be held memorable by the inhabitants of this city, and form an important era in the annals of the state. It will furnish a proud theme for the poet and the historian, and a memento of the wisdom of those legislatures by whose authority the canals were undertaken, and of the industry and intelligence of the commissioners and engineers, under whose auspices the design has been perfected.

"The junction of mighty waters which seemed forever separated by the hand of nature, and the removal of obstacles apparently insurmountable by the agency of man, afford reflections of the sublimest description. The connexion of the Atlantic with the Mediterranean during the reign of Louis XIV will be remembered, while the splendor of his military achievements shall have faded away, and the useful labours of Brindley will live in monumental brass, while the glories of Marlborough shall be buried in oblivion; and that government whose boast it is, to have tamed the mountain and the flood, to have united seas disconnected by nature, deserves more the praises of posterity than if it had added by conquest, empires to its dominion.

"It is but little more than six years since the first hand was put to the canal, and more than two hundred and fifty miles, are now navigable; a progress unexampled in the history of internal navigation. These labours are fruits of the skill and science of native engineers; and the state of New-York by its vigor and energy has not only furnished illustrious examples to the territories of this hemisphere, but has outstripped the old world in the path of improvement.

"Agreeably to the order of arrangement, the committees of the corporation and of the citizens proceeded to the junction of the Erie and Champlain canals, a distance of nine miles, to join the canal commissioners and engineers on board the canal packet boat De Witt Clinton, where an elegant breakfast was furnished by the master, capt. Dwight. From thence

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<sup>1</sup> Albany Argus, November 30, 1819.

the party proceeded to Gibbonsville, where they were joined by the boats Chief Engineer and Henry Seymour, the former having on board the military association and band, and the latter the canal and basin contractors. The Chief Engineer led the way, the De Witt Clinton following, the Henry Seymour next in procession, and the Governor Yates, with the committees of Waterford and Lansingburgh, closing the procession. The appearance of the Chief Engineer was announced by a salute from the United State arsenal, which was repeated as the boats drew up to receive the officers attached to that station. - From thence downward was a succession of pleasing and animating events. The banks of the canal, the bridges, and the roads, were thronged with carriages and citizens, and the whole presented a mass moving onward to the rich music of the band, with flags displayed, and with every indication of joy. At Nash's the elegant boat Chancellor Kent, with a party of ladies and gentlemen on board entered the line between the De Witt Clinton and the Henry Seymour. Upon the entrance of the boats into the basin, above the terminating lock at fifteen minutes past 12 o'clock, the Chief Engineer dropped astern, and the De Witt Clinton passed into the lock.

"The steam-boats Chancellor Livingston, Richmond, and Fire-Fly, crowded with beauty and fashion, and decorated with flags, had passed from the steam-boat wharf, and were moored in the river opposite to the lock. The vessels in the harbor, from whose decks and tops spectators were every where visible, had been previously stationed in a line in front of the basin. A vast concourse of persons, occupying the extensive shores of the basin, the pier, the roofs and windows of the buildings, and the neighboring heights, were looking upon the interesting spectacle.

"At this time, the ceremony of laying the top-stone of the lock was performed by Ezra Ames, Grand High Priest of the Grand Chapter of the state of New-York, dressed in his official robes, and attended by his subordinates, arrayed in the insignia of their respective offices.

"At the close of this interesting ceremony, Doctor Mitchell performed another, not less novel and interesting. This was the mingling of the waters of two oceans, with those of the lakes and rivers of the north and west. - Two bottles of water, one taken from mid-ocean of the Atlantic, and the other from the Pacific, which were furnished for the occasion by Com. Rodgers, were poured into the lock.

"After the conclusion of Dr. Mitchell's address, the sluices were opened, and the boat began to descend, but it was not until the lower flood-gates were thrown open that the spectators were aware of her descent. At this moment, amidst the roar of artillery from the pier and the heights - the ringing of the bells - the music from the unrivalled West-Point band, and the shouts of the assembled multitude, she passed into the basin below. As soon as she appeared in the basin, a warp was instantly fastened to the prow, and the twelve yawls, commanded by Capt. John Bogert, the oldest skipper present, with oars manned and in readiness for the occasion, proceeded to tow her round the end of the pier into the current of the river. This was done in a handsome and seaman-like manner, and thus the important junction of the canal to the river navigation was consummated.

"This auspicious event, which announces the completion, even so far as the canal is constructed, of an extent of direct internal navigation unexampled, in the history of the modern states, was witnessed by a least 10,000 individuals, all moved by the same impulse, and all looking upon the passing ceremonies with pride and exultation. Indeed, the eager

and animated countenances of an excited multitude, was not among the least of the objects of curiosity and interest.

"The Henry Seymour next descended. The canal commissioners, the several committees, and the gentlemen from the canal and steam-boats, were then landed, and the procession was formed and proceeded through North Ferry, Market, and State-sts....

"At the conclusion of the ceremonies, salutes were fired by the military companies: and the common council, the delegates from New-York, the commissioners, the committees and citizens were escorted by the cavalry to Rockwell's Mansion House, where they sat down to a sumptuous dinner prepared for the occasion, His Honor Charles E. Dudley, Mayor, officiating as President; and William James, Israel Smith, and John Stillwell, Esqs. as Vice-Presidents.

"After the removal of the cloth the following toasts were drunk:-

1. The Transit of the First Boat From the Waters of the Grand Canal into the Hudson - The interesting event we this day celebrate, it has been effected by the intelligence and enterprize of a free people.

Air - "Grand Canal March," composed for the occasion by Mr. Willis, leader of the band.

2. The Canal Commissioners - Not only the Citizens of this State, and of the United States, but other nations, and future ages, will freely award to them the honors due to their talents and fidelity. 3 cheers.

Air - "Hail Columbia."

3. The Canal Engineers - All native born citizens; their talents and genius have supplied the defects of practical knowledge. 3 cheers.

Air - "William Tell"

4. The President and Vice-President of United States.

Air - "Monroe's March."

5. The Governor and Lieutenant-Governor of the State of New-York. 3 cheers.

Air - "Governor's March."

6. The Memory of Gen. Philip Schuyler - As years pass away, his fame increases in freshness and vigor; In the place of his birth, which his intuitive mind had long predicted.- (Drank standing.)

Air - "Sweet is the Shepherd's tuneful Reed."

7. The Memory of Gouverneur Morris - One of earliest and most eloquent advocates of internal improvements. (Drank standing.)

Air - "Oh! breathe not his name."

8. The Albany Basin - May it realize our hopes, and prove fruitful in wealth and prosperity to the city. - 3 cheers.

Air - "Yankee Doodle."

9. Our Sister States beyond the Mountains - Though distant, the Canal will make us one family.

Air - "Jackie's coming."

10. The cause of Free Government throughout the world: It will finally prevail.

Air - "Let Fame sound the trumpet."

11. The contemplated Canals in various part of the United States - Their completion will open new sources of wealth to our highly favored country.

Air - "Waltz."

12. Our neighboring Cities and Villages - Let us sacrifice local jealousies, and honourably compete for the benefits of the Canal.

Air- "Meeting of the Waters."

13. Our fair Countrywomen.

Air - "The Knight-errant."

"The festivities of the day were concluded by a brilliant display of fire works from the Park.

"Thus terminated the memorable eighth of October. From morning until evening it was a succession of the most pleasing incidents. The associations connected with the events, the joyful throng, the admirable appearance of the military, the music, and indeed every thing, gave spirit and animation to the ceremonies. - The day passed without the occurrence of any incident to damp the general joy."

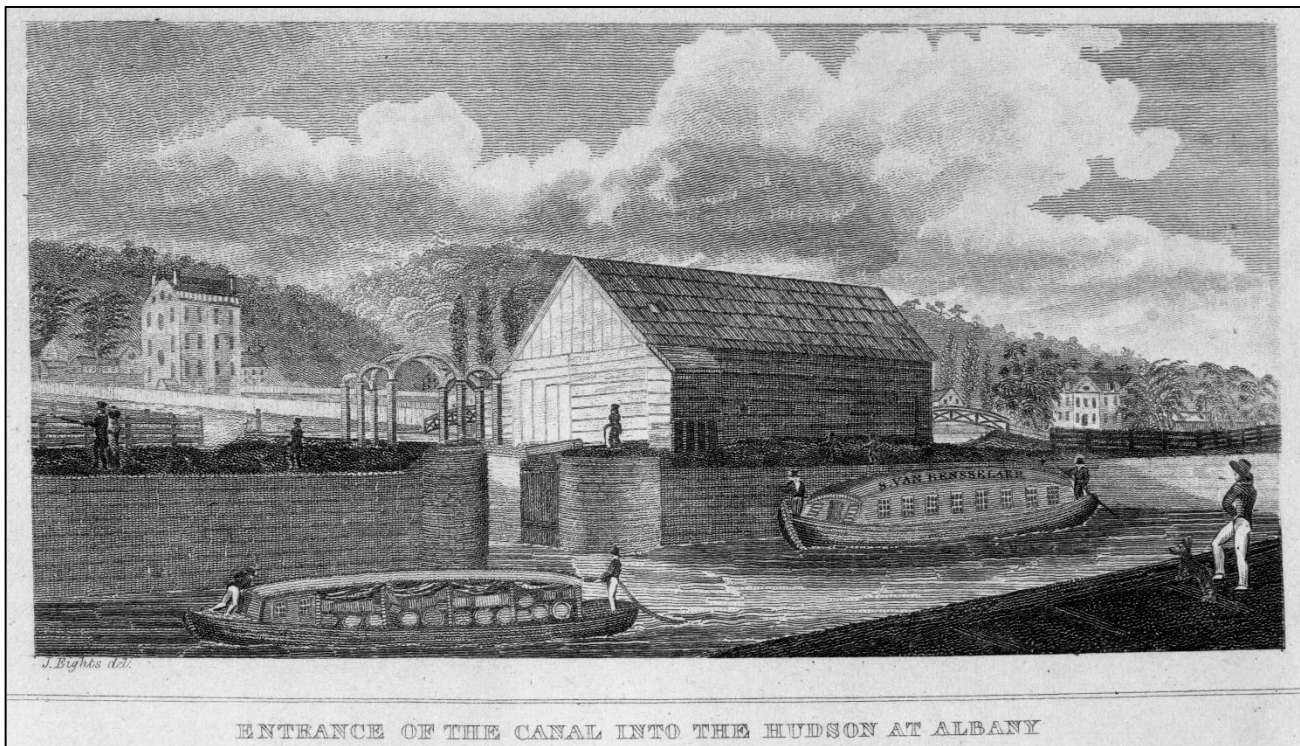


Figure 3. The entrance lock from the Erie Canal into the Hudson, decorated for the 1825 celebration.

## Albany Basin

In April 1823 the state legislature authorized the construction by private parties of a pier and basin along Albany's already two-century old waterfront. The great success of the completed portions of the Erie probably brought a recognition that this old waterfront was not going to be able to handle the new demands. Similarly, the new traffic could offer commercial opportunities if handled properly. In early May 1825 the pier and basin were described as being nearly complete. The pier's "extreme length is nearly 4400 feet - its width is 80 feet, and its height averages about 20 feet. - It runs in front of the old docks, at an average distance of about 250 feet, and encloses a basin... capable of holding about 1000 canal boats... At the southern termination of the pier is a sloop lock, 177 feet in length, and 30 feet in width, having a depth of 11, at the lowest stage of water." The construction completely enclosed the eastern termination of the Erie with all traffic having to go through the sloop lock. The basin offered protection to canal craft from storms and aggressive river currents. It facilitated the transfer of goods between canalboats and river vessels.<sup>2</sup>

The design was altered almost immediately. The sloop lock was abandoned and a cut made in the pier at the northern end that allowed a direct connection from the canal to the river. These changes may have resulted from commercial demands. They may have also been encouraged by a situation that plagued the basin for the rest of its history. By creating a barrier between the river and the city, the pier prevented material in the city's sewers from heading downstream. The basin's depth was soon filled with city sewage. Cutting an opening in the northern end of the pier may have provided a little relief with river current. The river itself, however, was now able to dump silt in the basin when it met the slower moving water in the basin. Further cuts later in the 19th-century were only marginally helpful. By the mid-1830s the state assumed responsibility for clearing this debris, seemingly under duress. In 1849 full ownership of the basin was transferred to the canal commissioners. Unfortunately, the city's runoff more than matched the State's dredging efforts. In the late 1840s "it had become so filled with deposit from the river and city, that portions of the bottom would appear above the surface during the dry season, where the water was originally seven feet in depth." In the early 1890s the basin was "a receptacle of great quantities of deposit issuing from the sewers... causing much detriment to canal boats compelled to load or unload while lying in the basin". State officials were never pleased with what they considered to be a local problem that interfered with statewide interests.<sup>3</sup>

The solution only became more clear when portions of the basin were filled in. Initial proposals to fill in the northern half, while leaving access to the canal, were made in the 1890s. They were soon implemented. Under 1906 legislation the Albany basin was

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<sup>2</sup> Albany Daily Advertiser, May 7, 1825.

<sup>3</sup> Annual Report of the Canal Commissioners (1837), p.3-4; Annual Report of the Canal Commissioners (1838), p.4; Annual Report of the Canal Commissioners (1850), p.18; Annual Report of the Canal Commissioners (1851), p.15-16; Annual Report of the Canal Commissioners (1853), p.72-76; Annual Report of the Canal Commissioners (1855), p.20; Annual Report of the State Engineer and Surveyor (1864), p.36-37; Annual Report of the State Engineer and Surveyor (1865), p.45; Annual Report of the State Engineer and Surveyor (1866), p.8; Annual Report of the Canal Commissioners (1867), p.32-33; Annual Report of the State Engineer and Surveyor (1866), p.47-48; Annual Report of the Superintendent of Public Works (1883), p.5; Annual Report of the Superintendent of Public Works (1892), p.14.



transferred to city with a clause freeing the State of any further responsibility for its care.<sup>4</sup>

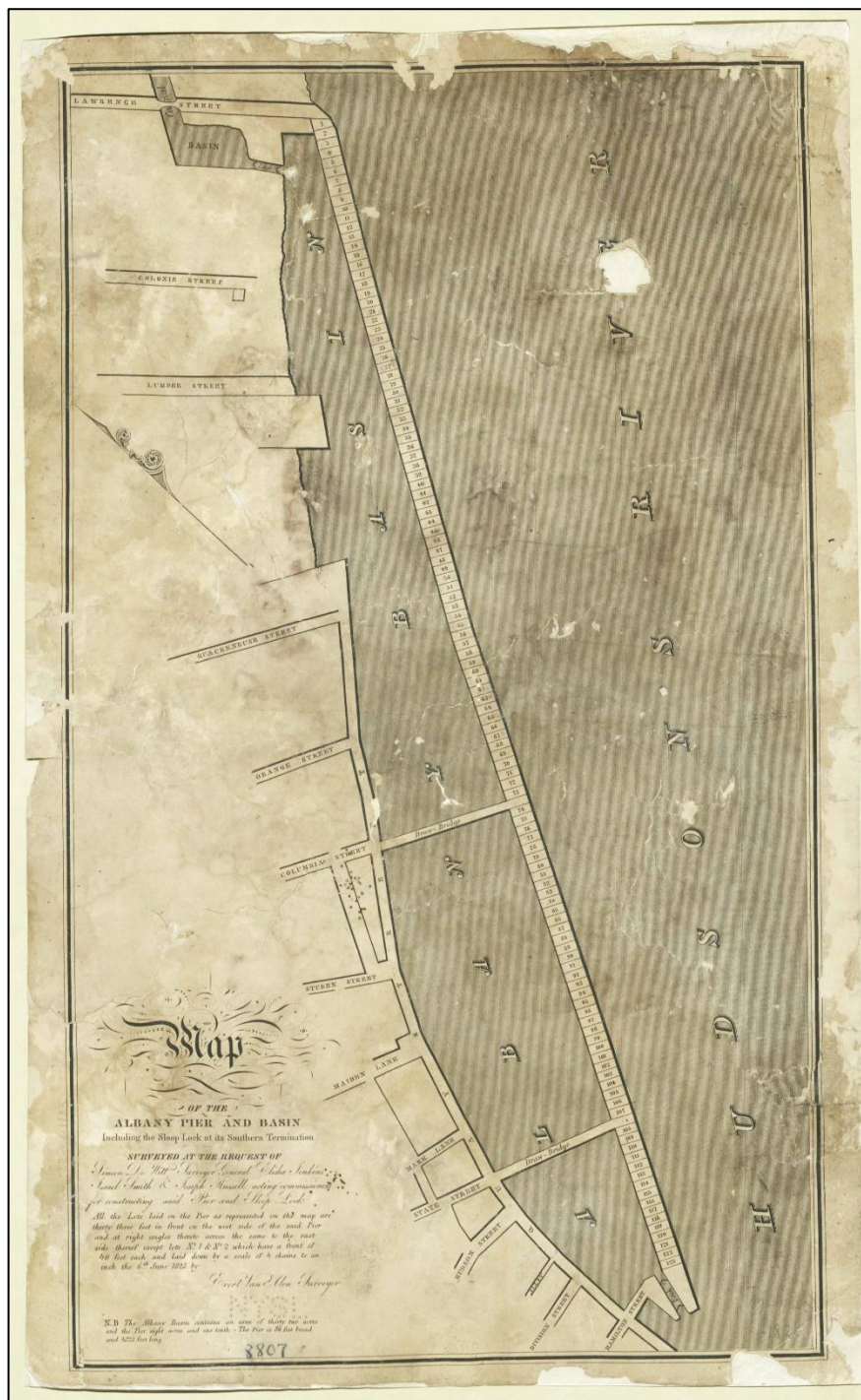
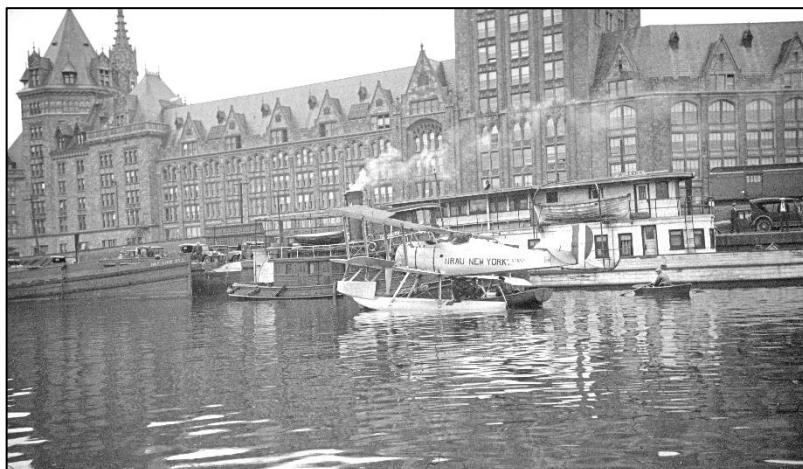
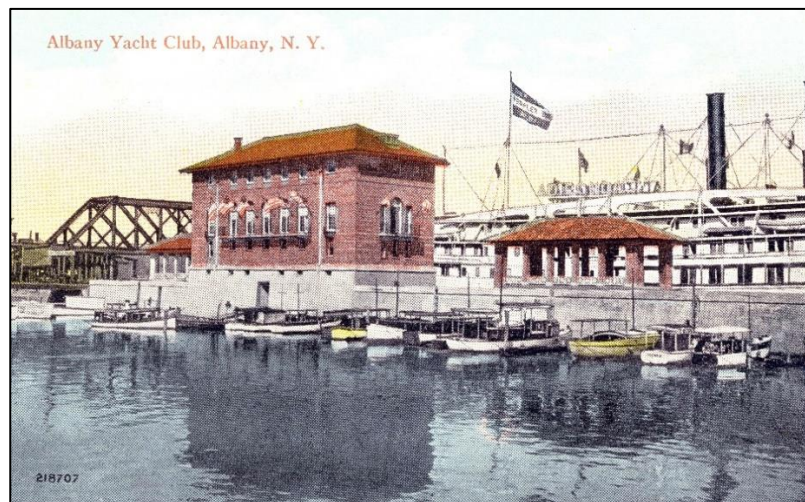
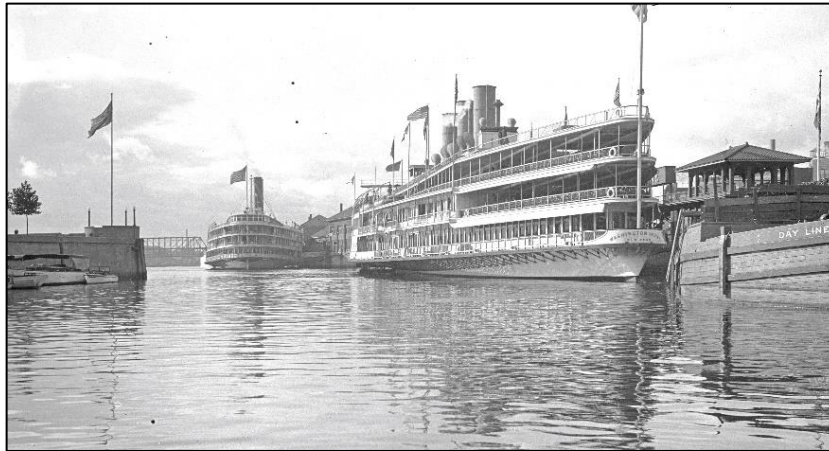


Figure 4. 1825 map of Albany Basin (New York State Library).

<sup>4</sup> Annual Report of the State Engineer and Surveyor (1893), p.19-21; Annual Report of the State Engineer and Surveyor (1894), p.16-17; Annual Report of the Superintendent of Public Works (1907), p.10.



Figure 5. 1825 Basin map superimposed on a modern map of Albany (Courtesy of Steven Talbot).



Figures 6 (top), 7 (middle), and 8 (bottom). View of Albany basin in the early 20th century, showing the Delaware and Hudson Building (now SUNY Central) in Figure 8.

## Waterford Sidecut Locks

The sidecut may have been originally designed to be the southern terminus of the Champlain Canal before a decision was reached to extend the canal to Cohoes. The descendent enlargement version of the sidecut actually served this purpose during the construction of the Waterford Flight of the Barge Canal. The Clinton's Ditch sidecut consisted of three individual locks, separated by substantial ponds. They were located along the approximate alignment of the Erie Barge Canal. The current enlarged locks were brought into use on November 6, 1856 and immediately helped relieve crowding on the canal further south.<sup>5</sup>

The sidecut still serves an active use. It is now a spillway that helps control the level between Erie Barge Locks 2 and 3. The conversion of the locks came under Barge Canal Contract 2-G. It included not only the installation of a taintor gate but also the construction of a bridge across the top of the sidecut and the removal of the old bridge abutments.<sup>6</sup>

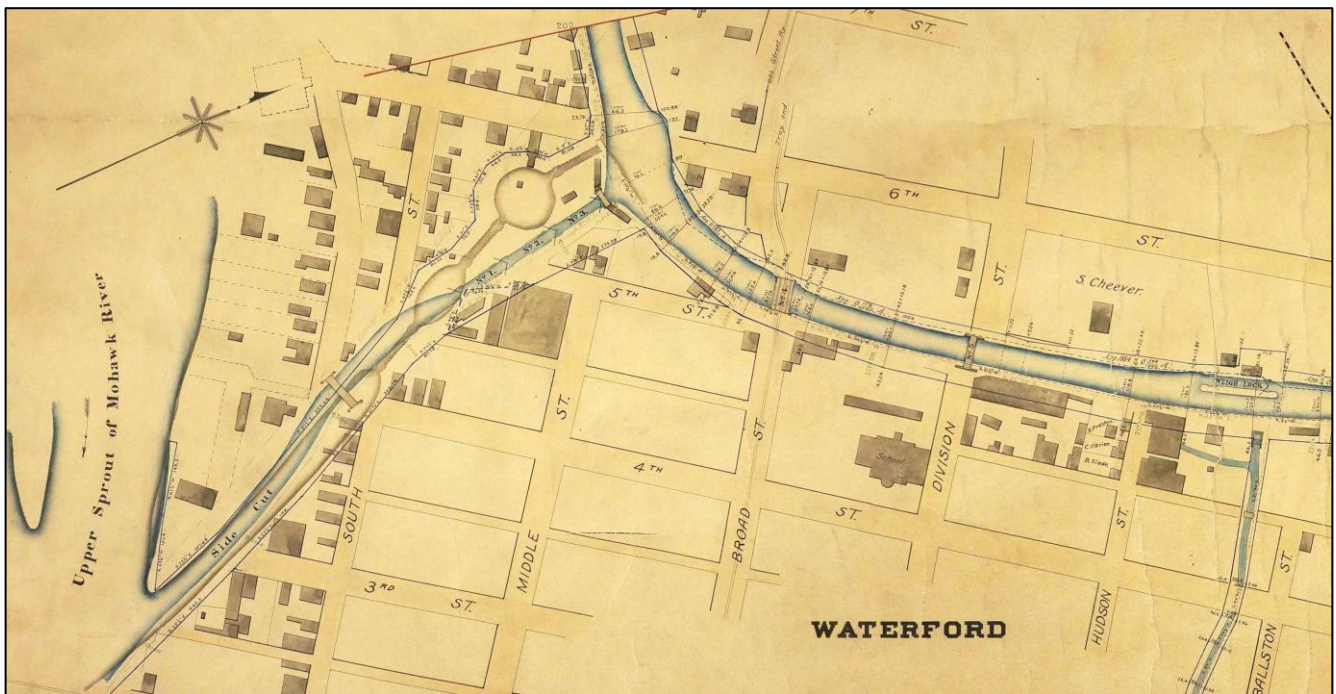
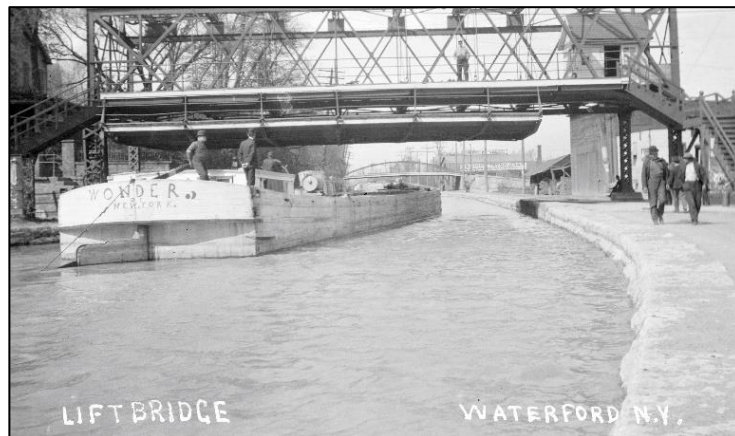


Figure 9. The 1896 Schillner Map of Waterford, showing the original flight locks and their ponds in the brown shading (New York State Archives).

<sup>5</sup> Annual Report of the Canal Commissioners (1847), p.44; Annual Report of the Canal Commissioners (1852), p.19; Annual Report of the Canal Commissioners (1853), p.53; Annual Report of the Canal Commissioners (1854), p.30; Annual Report of the Canal Commissioners (1856), p.49-50; Annual Report of the Canal Commissioners (1857), p.36, 64; Annual Report of the Canal Commissioners (1858), p.45.

<sup>6</sup> Annual Report of the Superintendent of Public Works (1917), p.45; Annual Report of the State Engineer and Surveyor (1917), p.57; Annual Report of the State Engineer and Surveyor (1918), p.63-64; Annual Report of the State Engineer and Surveyor (1919), p.77.



Figures 10 (top), 11 (middle), and 12 (bottom). Views from the Champlain Canal in Waterford including the flight (10, 11) and the Broad Street Lift Bridge, c1910.

## Erie Barge Canal Lock 2

Lock 2 was built in conjunction with the construction of Lock 3, under Barge Canal Contract 2. Work began in 1907. The installation of the gates in 1910 completed the lock. While the entire Waterford Flight was not opened until 1915, it is possible that Lock 2 was in use after the adjoining section of the old Champlain Canal was rewatered.<sup>7</sup>

As part of the Federal enlargement of the Barge Canal system between Waterford and Oswego, the sills of Lock 2 were lowered in 1954.



Figure 13. Looking west over the site of Erie Barge Canal Lock 2 with the Waterford sidecut locks to the right, c1905 (New York State Archives).

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<sup>7</sup> Annual Report of the State Engineer and Surveyor (1909), p.77-78; Annual Report of the State Engineer and Surveyor (1910), p.53; Annual Report of the State Engineer and Surveyor (1911), p.57; Annual Report of the State Engineer and Surveyor (1912), p.48.



Figures 14 (top), 15 (bottom). Boats waiting below Waterford sidecut locks with construction of Erie Barge Canal Lock 2 underway, c1908.



Figure 16 (top left). Looking west over construction of Erie Barge Canal Lock 2, September 12, 1908; Figure 17 (top right). Looking over Waterford sidecut locks during Barge construction, October 12, 1908; Figure 18 (middle). Looking west from Erie Barge Canal Lock 2 over crossing of 19th-century Champlain Canal, May 29, 1909; Figure 19 (bottom). Looking east as houses are moved from the site of Erie Barge Canal Lock 2, July 26, 1905.



## Waterford Weighlock

The need for a weighlock at Waterford was heightened with the 1856 completion of the enlarged sidecut locks. It was estimated that nearly one half of the boats coming down the Champlain Canal used the sidecut as a shunpike to avoid the West Troy Weighlock. State officials felt that "innumerable frauds" were resulting in substantial lost revenue. The weighlock was completed in 1862 and not only helped control possible fraud but also demonstrated the usefulness of the new Sampson weighlock scale. Unlike the Albany and West Troy weighlocks, an overhead frame for a scale mechanism was not necessary. The Sampson scale transferred the weight to the small brick weighlock house alongside by an overhead conduit. Initial praise for the scale was replaced with a description in the early 1880s that for years it worked "in a most worthless and untrustworthy condition".<sup>8</sup>

For some wonderful modern images of the Waterford Weighlock, see - <http://www.tug44.org/canal.history/waterford-champlain-weighlock/>

(Thank you the late Fred Wehner!)



Figure 20. Looking up the Champlain Canal with the Waterford Weighlock to the left, c1910.

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<sup>8</sup> Annual Report of the Canal Commissioners (1857), p.35; Annual Report of the Canal Commissioners (1858), p.36-37; Annual Report of the State Engineer and Surveyor (1858), p.40; Annual Report of the State Engineer and Surveyor (1860), p.16; Annual Report of the Canal Commissioners (1862), p.30; Annual Report of the Canal Commissioners (1863), p.22; Annual Report of the State Engineer and Surveyor (1863), p.23-24; Annual Report of the Canal Commissioners (1864), p.51-52; Annual Report of the Canal Commissioners (1865), p.29-30; Annual Report of the Superintendent of Public Works (1880), p.24; Annual Report of the Superintendent of Public Works (1882), p.42.

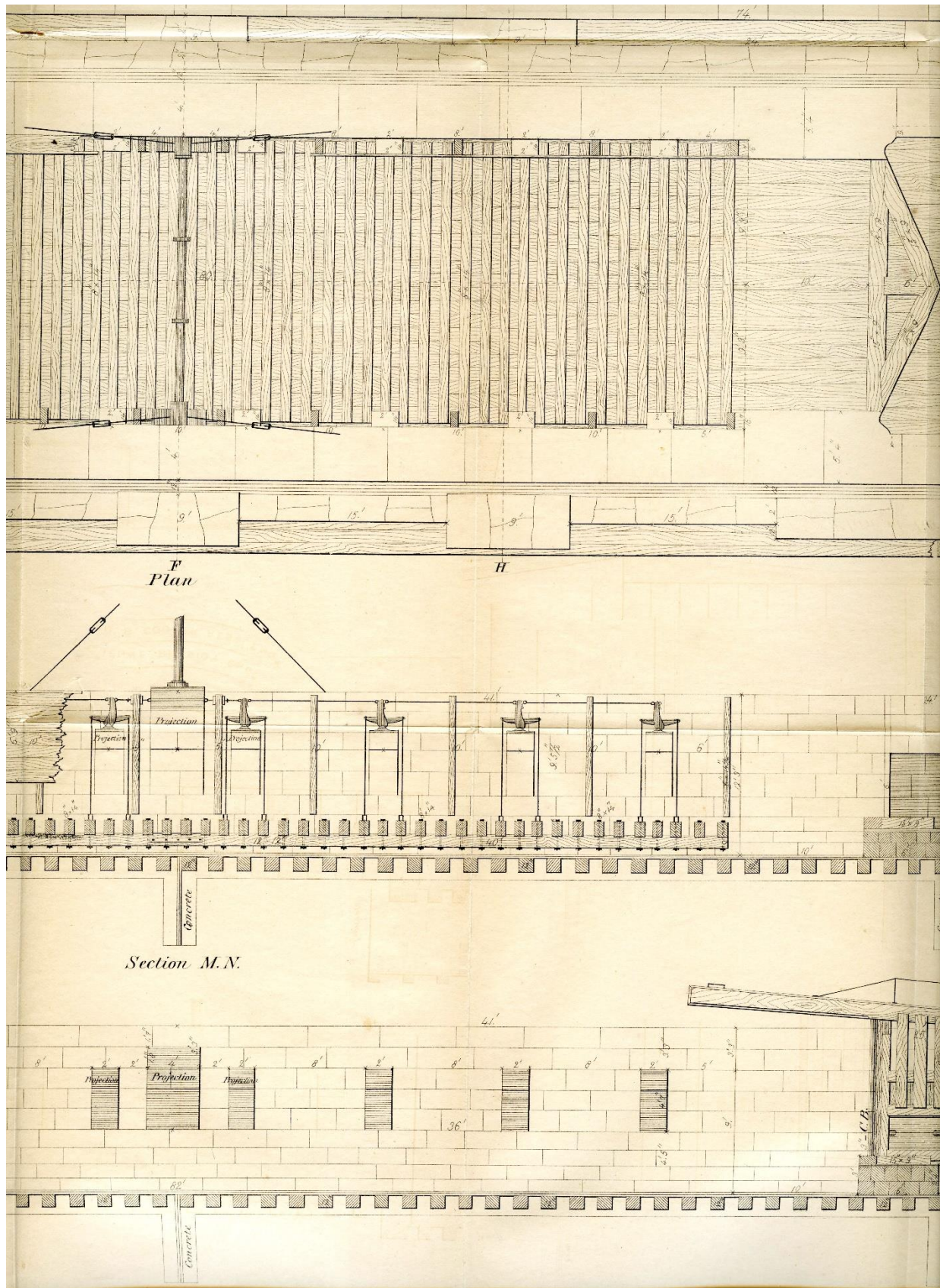


Figure 21. Plan of the Waterford Weighlock Sampson scale and chamber, 1862.

## Mechanicville Hydroelectric Station Champlain Barge Canal Lock 2

Construction of the power plant with its associated dam was commenced in 1891 and completed the following year by the Hudson River Power Transmission Company. Mechanicville was one of four "large" hydroelectric plants that were planned in the United States and Canada in 1897, following the engineering and financial success of the Niagara Falls hydroelectric plant (transmitting power on an alternating current system in 1896).

The plant was bought in 1902 by Eugene Ashley, an entrepreneur from Glens Falls, who was establishing a hydroelectric system to provide power for the Albany-Schenectady-Glens Falls area. Several equipment changes were made at this time with the current arrangement largely dating from those changes. The plant provided power for the General Electric Company in Schenectady and to the United Traction Company's fleet of regional trolley cars. General Electric provided the equipment for the plant, being its first step into hydroelectric generation and transmission. The plant was used by General Electric for experiments in DC transmission in the 1930s.

After going through a handful of owners, Niagara Mohawk purchased the facility in 1950, deciding by 1997 to close it down due to perceived obsolescence. That it is still running today and is in the forefront of "green" energy is due to the passion and persistence of Jim Basha of Albany Engineering. After much legal wrangling, ownership was transferred to Albany Engineering in 2003.

Under Barge Canal Contract 69, let to I. A. Hodge and Company, work on Champlain Canal Lock 2 began with the construction of a trestle across power company's race in January 1910. By July 1910 the first concrete was being poured. With the exception of the lock's powerhouse, the lock was completed in 1912 though it was probably not in commercial use until 1916. The original bridge at the lower end of the lock was erected in 1912 and replaced in 1994 with the current span.<sup>9</sup>



Figures 22 (left), 23 (right). Construction of Champlain Barge Canal Lock 2, 1910/1911.

<sup>9</sup> Annual Report of the State Engineer and Surveyor (1911), p.92; Annual Report of the State Engineer and Surveyor (1913), p.111; Annual Report of the State Engineer and Surveyor (1914), p.140; Annual Report of the Department of Public Works (1937), p.20; Annual Report of the Department of Public Works (1938), p.17.

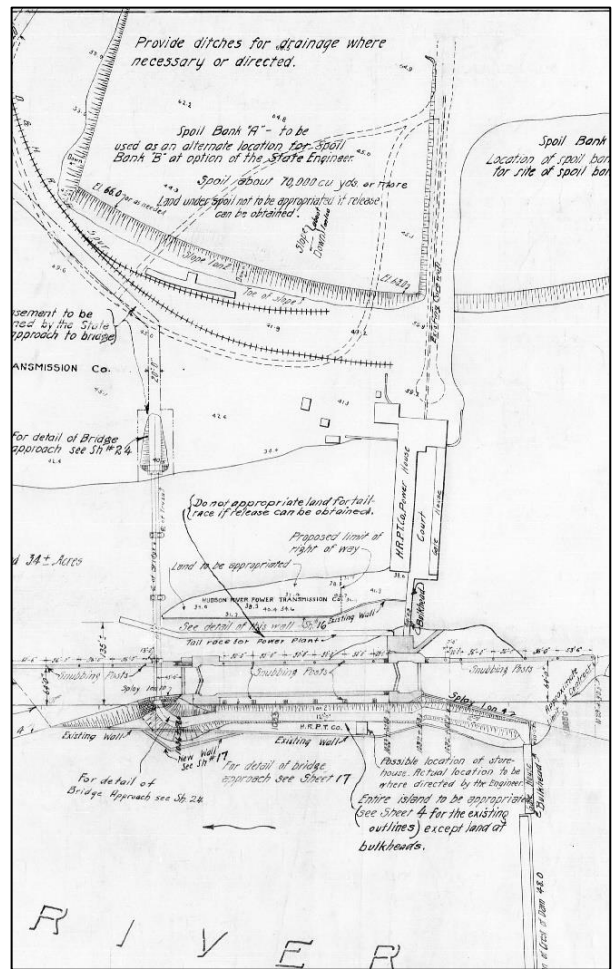
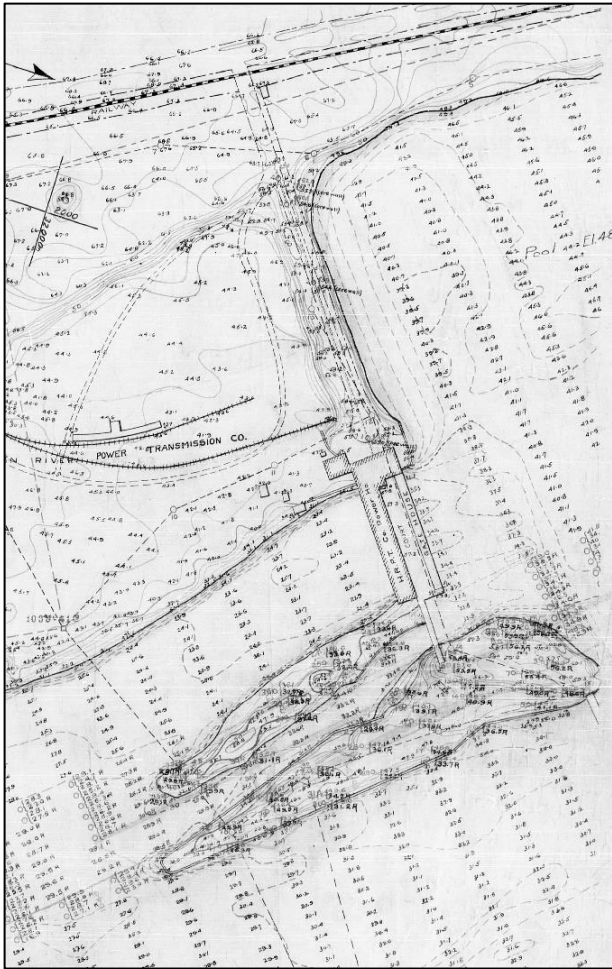


Figure 24 (left). Survey of existing conditions prior to construction of Champlain Barge Canal Lock 2, 1909; Figure 25 (right). Contract plan for Champlain Barge Canal Lock 2.

## Mechanicville

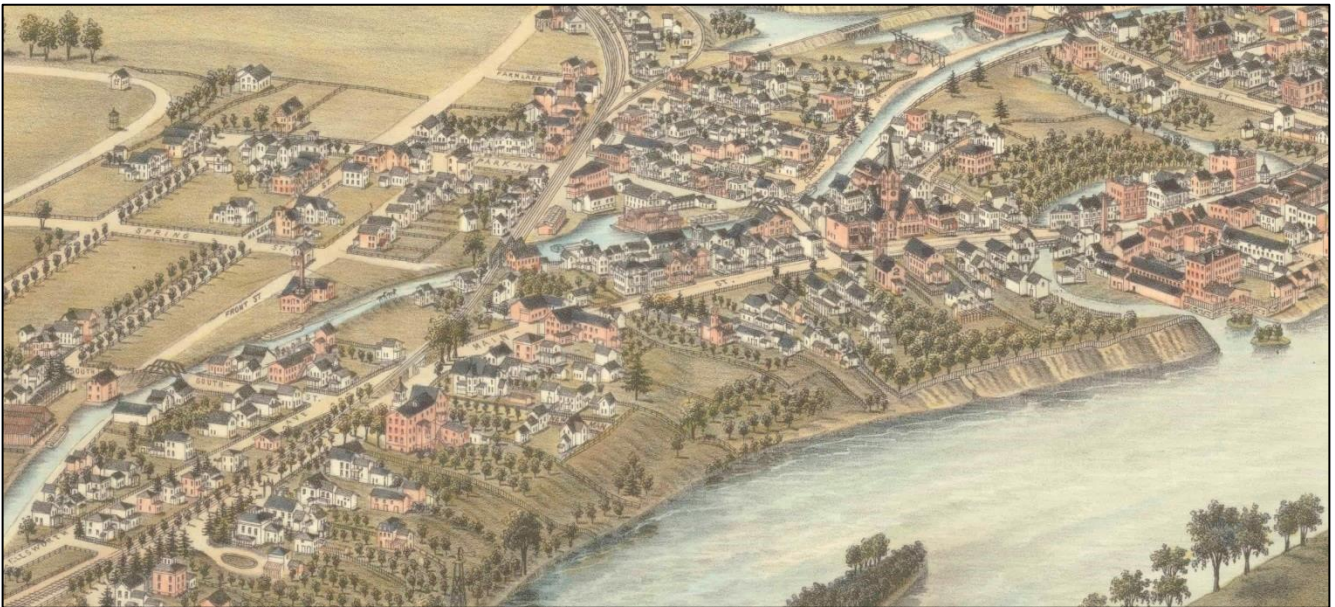


Figure 26 (top). Detail of bird's-eye view of Mechanicville, looking northwest, c1885; Figure 27 (bottom left). View north towards the Delaware and Hudson Railroad crossing of the Champlain Canal, c1905; Figure 28 (bottom right). View north towards Park Avenue Lift Bridge, c1905.

## Wilbur Road

With the 2023 Bicentennial of the completion of the Champlain Canal, this section of the canal just south of Wilbur Road earns special significance. It is one of the few places where the original prism of the "Clinton's Ditch" Champlain Canal is intact, visible and reasonably accessible... maybe the only such location.

The Champlain Canal was authorized by the same legislation that started the Erie Canal. Work also began in 1817, though more likely towards the end of the year. Just as the Erie encountered the remnants of Western Inland Lock Navigation Company, the Champlain also retraced the pathways of the even more unsuccessful Northern Inland Lock Navigation Company of the 1790s. By the end of 1819 navigation was possible between Fort Edward and Whitehall. By the following year the section from a few miles north of Waterford to Northumberland was completed, including this portion at Wilbur Road.

Like its Erie sibling, the Champlain Canal also went through several rebuildings and enlargements. As with the Erie, canal engineers sought to increase the draft of the canal, originally at four feet then to five feet in the 1860s and then to seven after 1870. Unfortunately, though some sections eventually reached seven feet, many remained at five even up to its abandonment with the completion of the Champlain Barge Canal.

Another of the primary goals of those rebuildings as was also true for the Erie was to straighten the contour-hugging curves of the first Champlain Canal. Here at Wilbur Road, that late 19th-century enlargement left two loops of the Ditch canal, one to the east and another to the west.

Besides these major enlargement efforts, there was also continual work to improve the Champlain Canal in more minor ways such as new bridges and basins. One example of that work is witnessed by the below manuscript receipt for work done by Mintus Northup in 1828 to excavate a basin near Fort Edward. From "Twelve Years a Slave" (1853) by Solomon Northup we know that he worked with his father, Mintus, on the Champlain Canal, likely the same work described in the receipt.

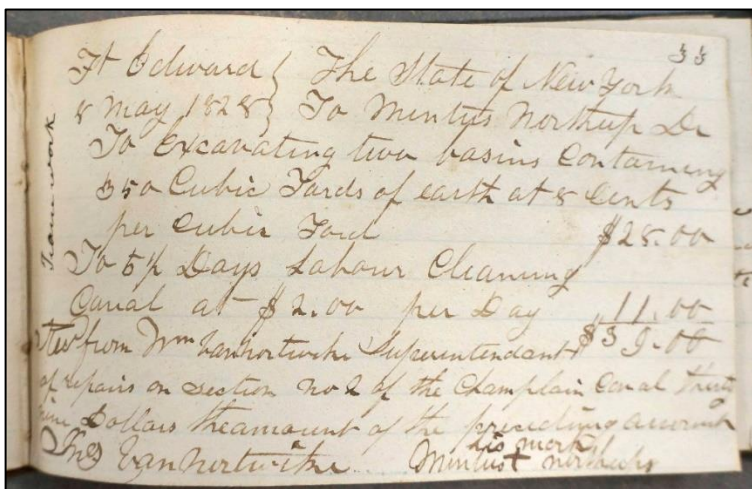


Figure 29. May 1828 receipt for work performed by Mintus Northup (New York State Archives).

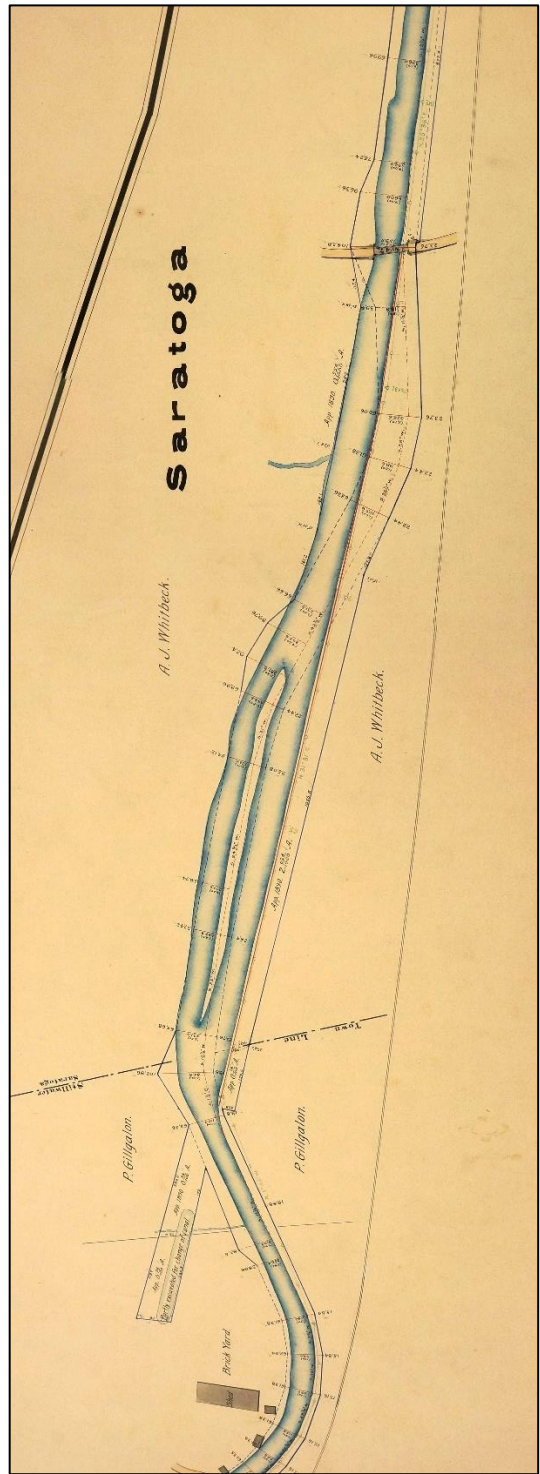
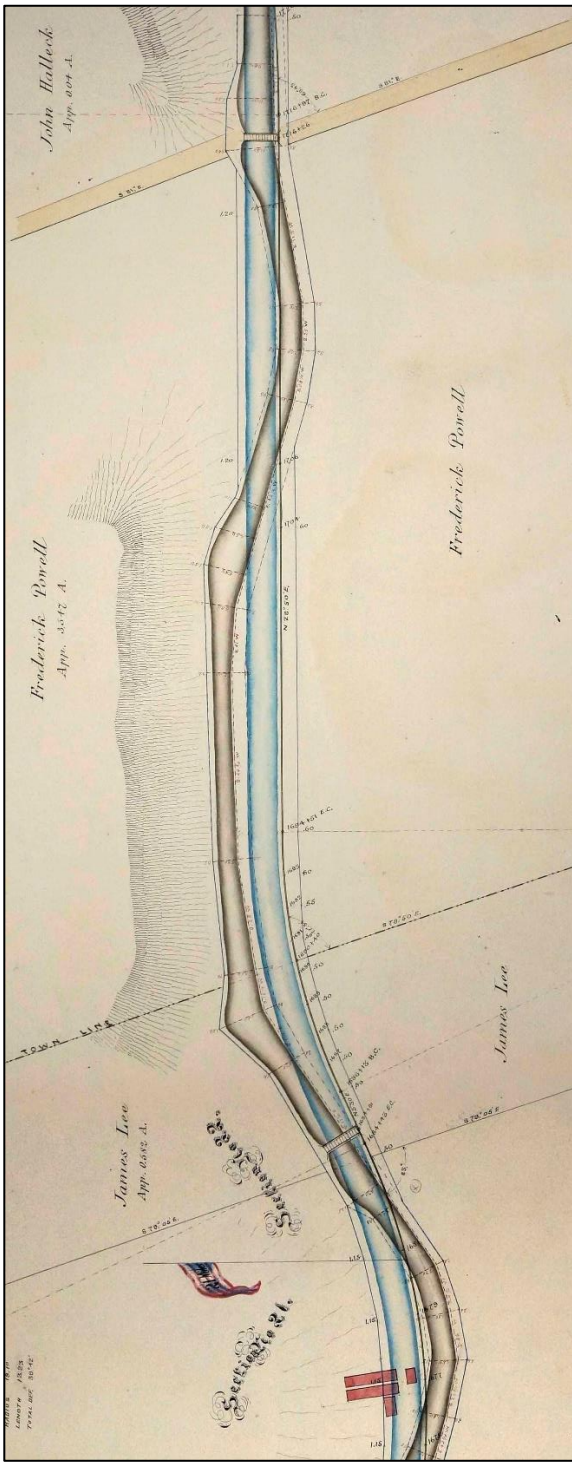


Figure 30 (left). Survey of the first Champlain Canal showing proposed enlargement just south of Wilbur Road, 1870; Figure 31. Schillner Map of Champlain Canal south of Wilbur Road showing in dotted lines the alignment of the first Champlain Canal, 1896.

# Schuylerville

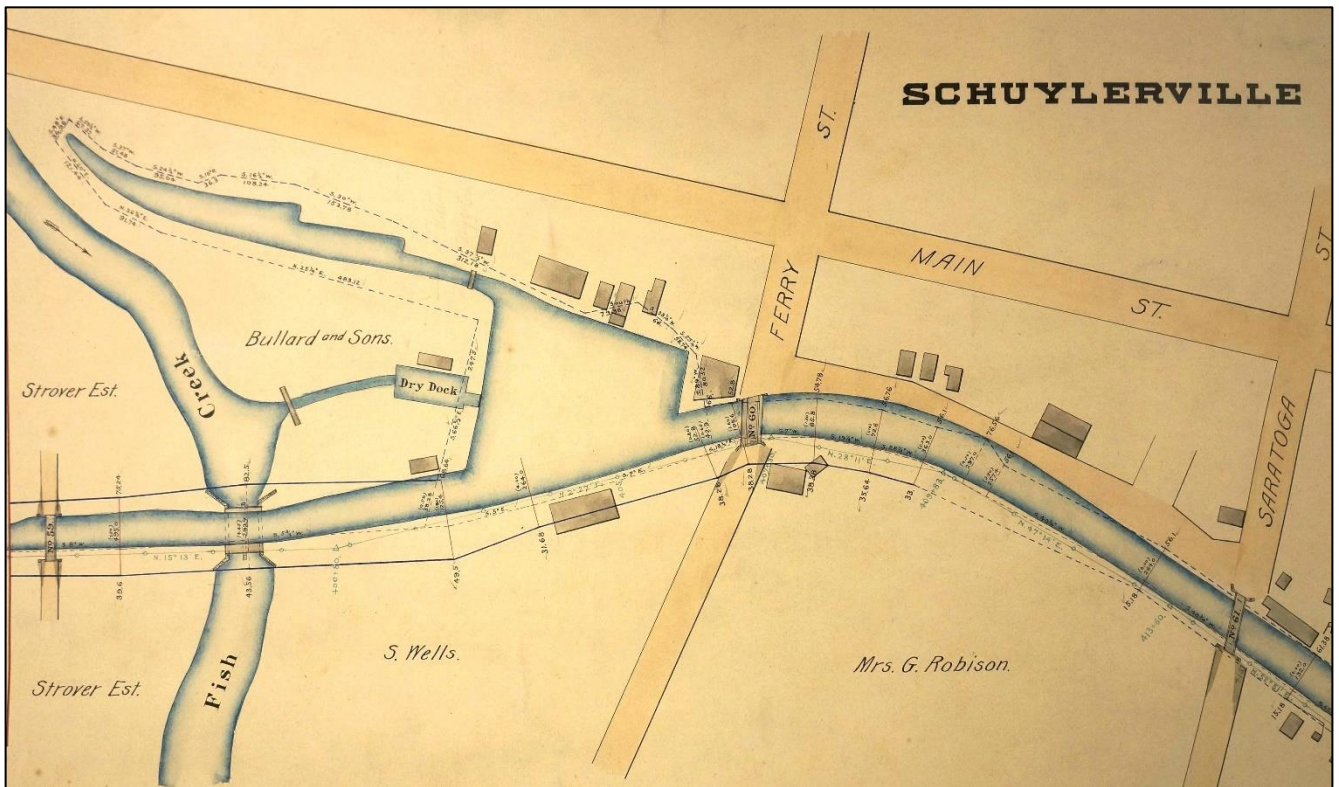
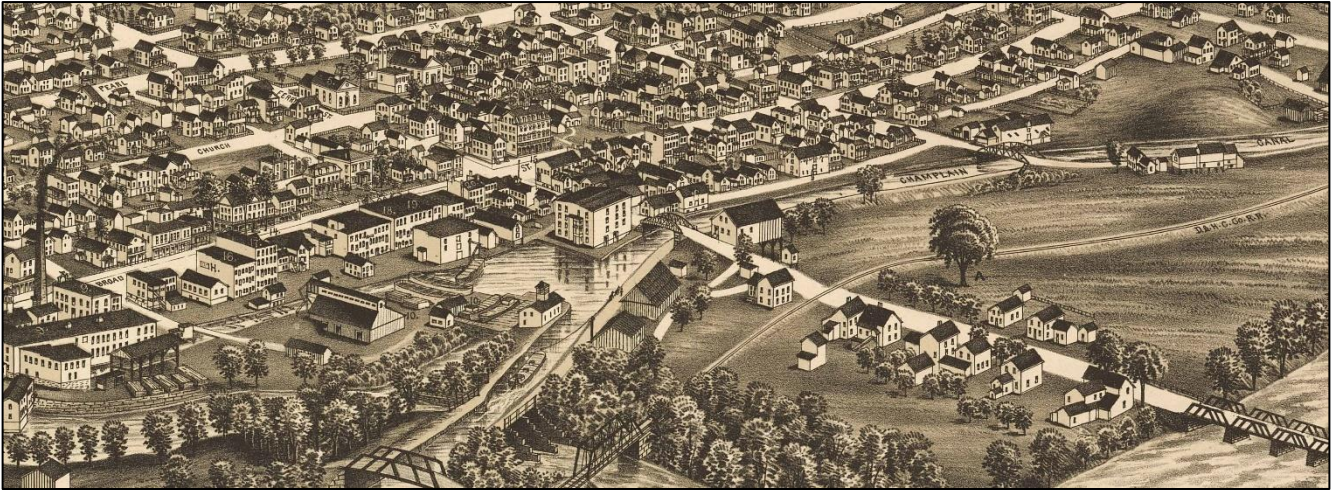


Figure 32 (top). Detail of bird's-eye view of Schuylerville, 1889; Figure 33. Schillner Map of Schuylerville, 1896.





Figure 34 (top). View south into Schuylerville, c1910; Figure 35 (bottom). View west on Ferry Street in Schuylerville with bridge over the Champlain Canal in center, c1910.

## **Champlain Barge Canal Lock 5 Schuylerville Terminal Junction Lock**

Work at the site of Lock 5 began with steam-shovel excavation in January 1909, not quite two months after the awarding of the contract to Shanley, Morrisey Company of New York City. The first concrete was poured in June and by the end of September the entire west wall had been completed. Ancillary activities at the lock site included the construction of a commissary building, contractor's office and supply house. The latter two caught fire on September 9, 1909.<sup>10</sup>

Much of 1910 was occupied with pouring the remaining concrete walls. By early 1911, the lock had progressed enough to allow the hanging of the gates and the placement of the buffer beams. From then until the work's completion at the end of the year, activities included erecting a storehouse and placing snubbing posts. In December 1911 the remaining portions of the contractor's plant were removed from the site.<sup>11</sup>

The amazingly-intact powerhouse at Lock 5 was a product of Barge Canal Contract 92. The construction of the powerhouse structure was largely begun and finished in 1913. Arc lamps on poles was also included in the contract. Electrical work at the lock was completed about September 1915.<sup>12</sup>

With its original gates, Lock 5 is among the most intact on the system.

The Schuylerville Terminal Junction Lock connected a portion of the 19th-century Champlain Canal into Schuylerville with the Champlain Barge Canal. It was one of two on the Champlain Barge Canal, the other being the Fort Edward junction lock that connect the Barge with the Glens Falls Feeder. The construction of the concrete lock was performed within Terminal Contract 13. Besides the lock, the contract included other work to create a short spur of the older canal into the village.

The contract, originally let to Lou B. Cleveland in December 1914, was assigned to the Kendar Engineering and Construction Company of Buffalo in December 1915. Construction began on January 29, 1916, with a construction plant being assembled on site. Curiously, work was suspended by the Canal Board just a few weeks later. There was apparently the fear that not enough of the lock could be completed by May 1916 to allow the opening of the

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<sup>10</sup> Annual Report of the State Engineer and Surveyor (1910), Assembly Document 22, p.77; Barge Canal Bulletin (January 1909), p.14; (April 1909), 120; (October 1909), p.381.

<sup>11</sup> Barge Canal Bulletin (May 1910), p.186; (December 1910), p.501; (February 1911), p.60; (March 1911), p.93; (June 1911), p.182; (December 1911), p.379; (January 1912), p.20.

<sup>12</sup> Barge Canal Bulletin (June 1913), p.219; (September 1913), p.313; (November 1913), p.377; (February 1914), p.58; (August 1914), p.297; (October 1915), p.308.

new Barge Canal channel.<sup>13</sup>

A month after the suspension of the contract was declared, work on the lock was continued by State forces. Navigation would in the new channel would not be delayed if only the upper gate of the lock were completed. The gate would be kept closed during that period, apparently, at least temporarily, preventing direct access to Schuylerville. By May 1916, just in time for the navigation season, state crews were hanging the upper gates after treating the timbers with "carbolineum". The lower gates were hung later that summer and work at the lock was largely completed by the fall.<sup>14</sup>

Retired state canal employee, Jim Petit of Fort Miller, remembers that the lock was still in use up until about 1950. The buoy boat operator for that section of the canal would regularly lock his boat through.

The junction locks sits in the channel of the Enlarged Champlain Canal. Little known, the original Ditch Champlain Canal followed an alignment that looped just west of the Enlarged channel, west of the junction lock, the narrower channel that shows in the upper portion of the below Schillner map.

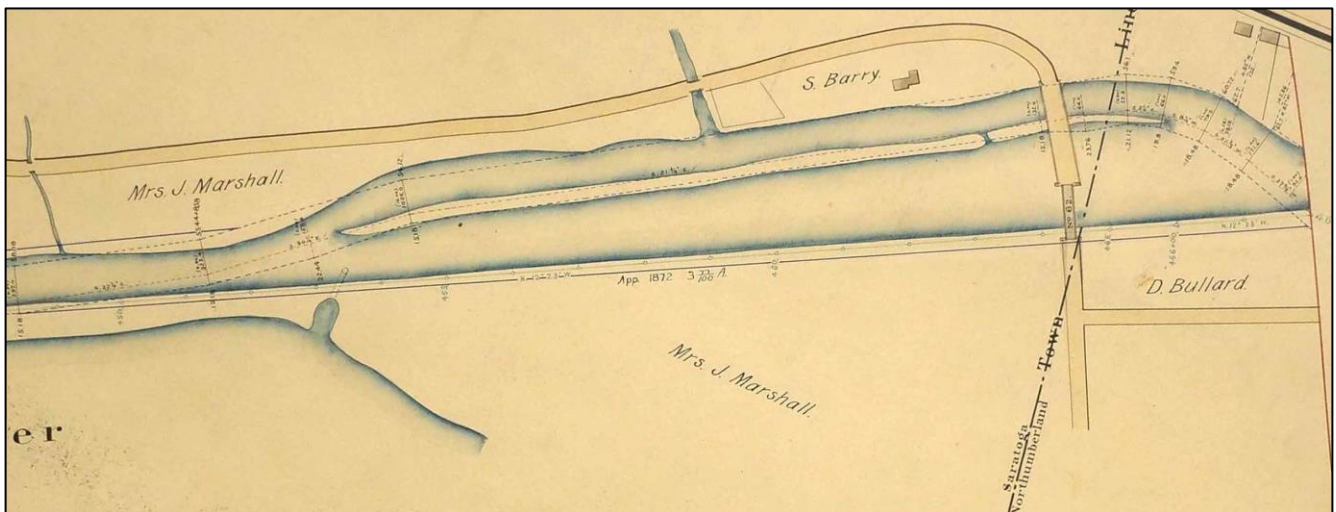


Figure 36. Schillner map of later location of Champlain Barge Canal Lock 5.

<sup>13</sup> Barge Canal Bulletin (January 1916), p.20; (February 1916), p.47; (March 1916), p.77; (April 1916), p.111.

<sup>14</sup> Barge Canal Bulletin (May 1916), p.139; (June 1916), p.175; (September 1916), p.263; (November 1916), p.325.

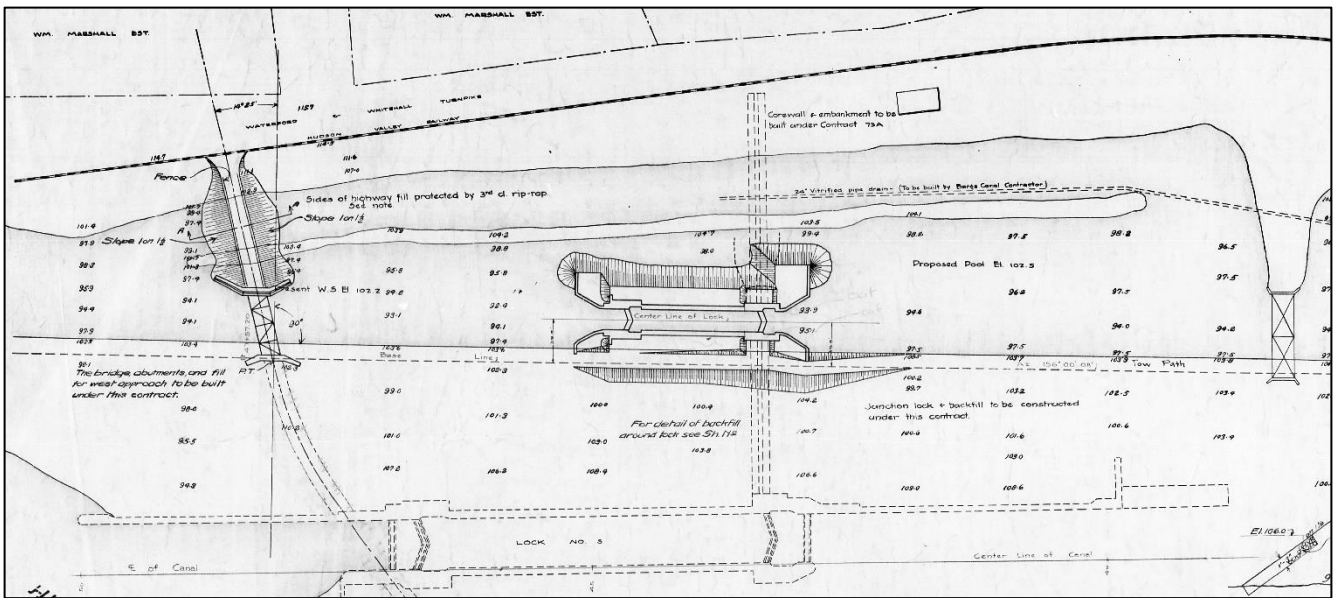
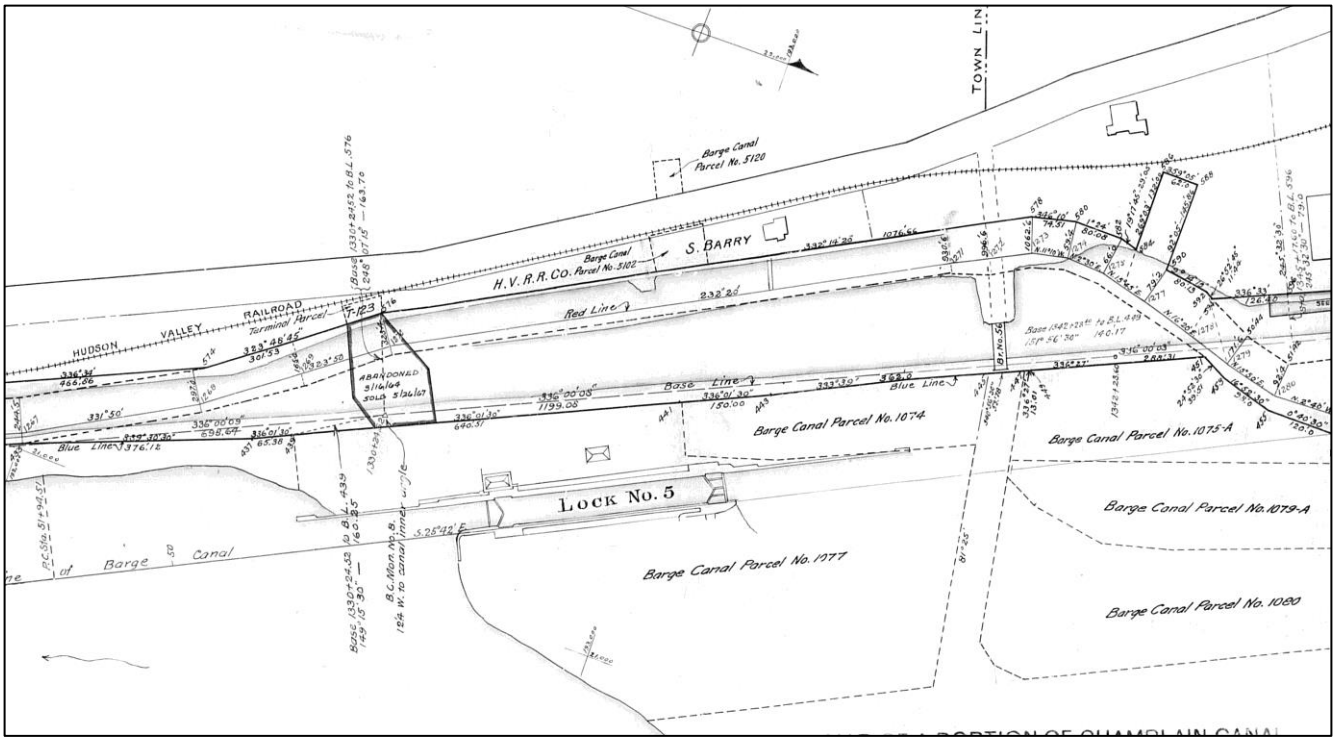


Figure 37 (top). "Blue Line" of site of Champlain Barge Canal Lock 5, 1917; Figure 38 (bottom). Contract plan for Schuylerville Junction Lock, 1914.

## Champlain Canal Lock 6

The construction of Lock 6 was conducted under Barge Canal Contract 3, awarded to Sundstrom and Stratton in April 1905. By the end of 1906 about three-quarters of the excavation needed for Lock 6 had been completed and some concrete poured. By the end of 1908 all of the concrete work at the lock was completed with the exception of a small amount near old Lock 13.<sup>15</sup> The gates of Lock 6 were installed under Barge Canal Contract 32, with work beginning in September 1909. By the summer of the following year, the gates and valves had been completed.<sup>16</sup>

The hydroelectric plant at Lock 6 with its powerhouse was built under the terms of Barge Canal Contract 92. Work on the structure of the powerhouse began in April 1913 and finished about a year later. The contract was practically completed at Lock 6 by August 1915.

Lock 6 was rehabilitated under a 1967 contract (M67-5). About two years later, new valves were installed (M69-10).

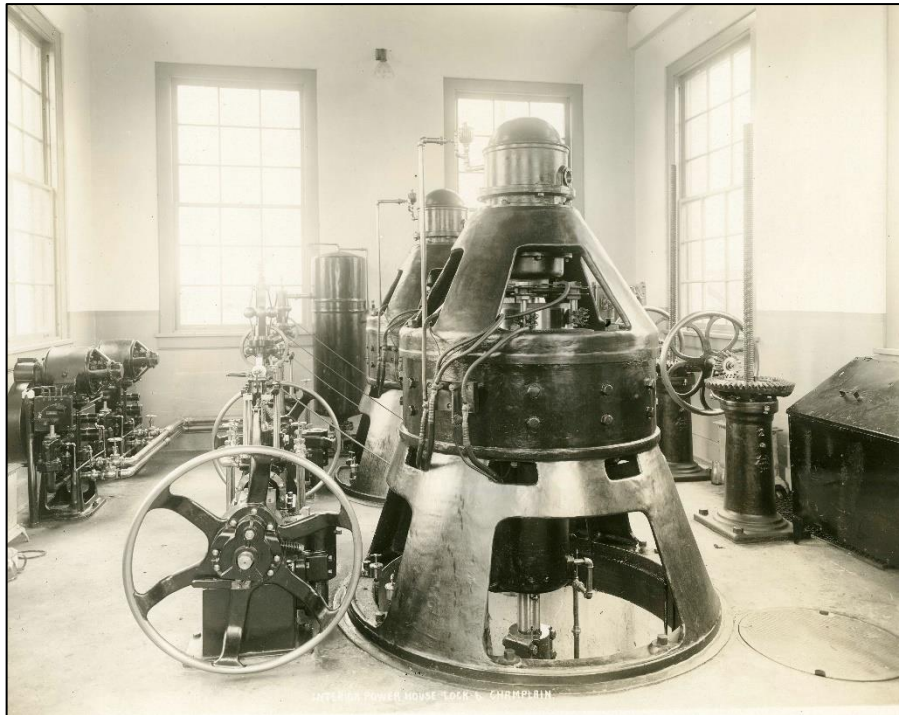


Figure 39. Powerhouse interior of Champlain Barge Canal Lock 6, c1918.

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<sup>15</sup> Annual Report of the State Engineer and Surveyor (1907), Assembly Document 19, p.77; Barge Canal Bulletin (February 1908), p.14.

<sup>16</sup> Barge Canal Bulletin (October 1909), p.380; (December 1909), p.465; (January 1910), p.27; (April 1910), p.153; (May 1910), p.185; (June 1910), p.253.

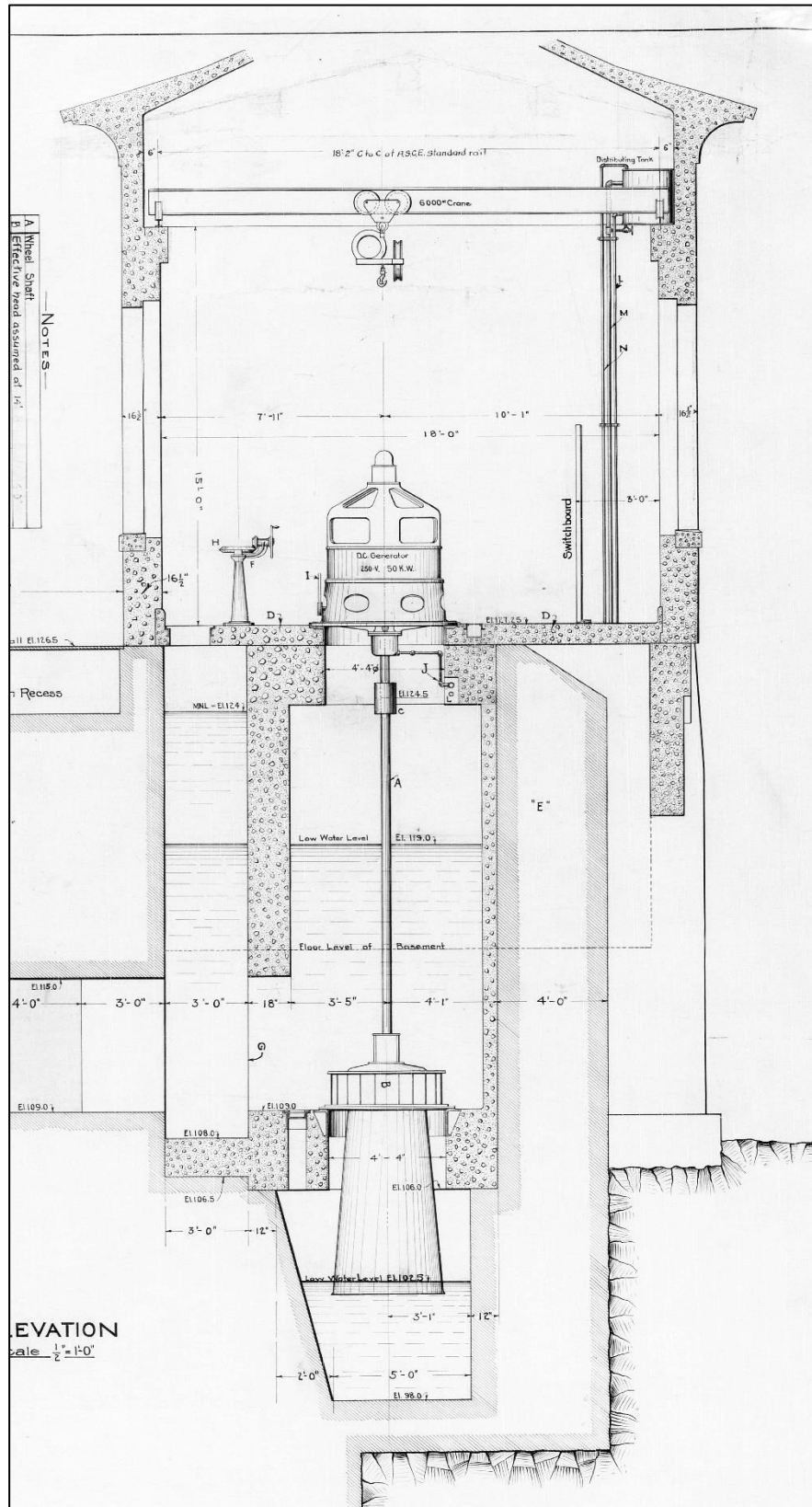


Figure 40. Contract plan for powerhouse at Champlain Barge Canal Lock 6, 1912.



Figure 41 (left). View south through empty chamber of Champlain Barge Canal Lock 6;  
Figure 42 (right). View north over south gates of Champlain Barge Canal Lock 6.

## The Canals of Fort Miller

The initial design and work of the Champlain Canal had the canal reenter the Hudson at Fort Edward and let boats depend on the river to the south. The artificial channel from Fort Edward to Northumberland did not come until a few years later. As it was in colonial times, the falls at Fort Miller forced river traffic to portage. The portage was what led to the founding of Fort Miller, originally on the west side of the river. For the Champlain Canal, the portage was facilitated by a short sidecut canal on the east side of the falls with two lift locks at the southern end and a guard lock on the upstream side. Thomas and Joseph Campbell and Benjamin Butterfield took the contract to construct the sidecut canal. Salmasius Bordwell assisted with the troublesome excavation of slate during the canal's building. The construction of the locks was done by a contract taken by John Baker and was probably completed in 1822. To create a more navigable depth above Fort Miller, a dam was erected at the Fort Miller Falls by Melancthon Wheeler. From the sidecut canal north to Fort Edward, river improvements made in these early years of the Champlain Canal included blasting a boat channel through Crocker's and Potter's Reefs.<sup>17</sup>

The first-generation locks at the southern end were still useable in early 1834, after partial repairs, to be used for general navigation while repairs to Lock 11 prevented the usual access to the canal. The implication from this report is that the old Fort Miller locks had ceased to be used before the repairs. Nonetheless, the Fort Miller section was a busy place, at least for one person according to his account. In 1829 the canal toll collector at Fort Miller petitioned the Canal Board for an extra allowance for services he performed from 1822 to 1825. He was apparently also in charge of tending the three locks. While it seemed to be the practice on many other of the Champlain locks at the time to let the boaters themselves lock their craft through, at Fort Miller "the guard lock in high water required strict attention in order to preserve the level below and the double lock going into the river could not be left to the management of raftsmen and boatmen but for a short time with safety." He also had to manage the nearby bridges and dam.<sup>18</sup>

Use of the northern portion of the sidecut canal continued after the construction of the Fort Edward to Northumberland canal. The justification for the use was probably due to its potential as a feeder. Unfortunately, low water in the Hudson at least once created a reverse flow. Water was spilling from the canal through the old guard lock into the Hudson. In 1835 a "set of reverse gates" were constructed just south of the guard lock to keep the precious water in the canal channel. In 1843 the Canal Commissioners dropped a hint that maybe the loss of water to this sidecut could not be any longer balanced by the value of existing commercial use. To maintain the sidecut, the State would have to soon rebuild the "old and much decayed" guard gates and, possibly, raise the height of the dam. There was "but little

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<sup>17</sup> Annual Report of the Canal Commissioners (1821), p.19; Comptroller's Report of February 21, 1821 ([Canal Laws](#)); Comptroller's Report of March 22, 1822 ([Canal Laws](#)).

<sup>18</sup> Annual Report of the Canal Commissioners (1835), Assembly Document 85, p.20; Canal Board Papers, Series A1140, 1829, Packet 29, New York State Archives.



navigation through" the sidecut in 1843, the Canal Commissioners claimed.<sup>19</sup>

Over the next few years, State officials became more adamant that the northern sidecut should be closed. The Canal Commissioners finally decided in 1846 to close the cut, directing the local superintendent to begin such work as needed. Local opposition soon swelled at the imminent prospect of the work. Petitions were submitted to the Canal Board. The Board overrode the Canal Commissioners and directed that the sidecut locks be rebuilt. The rebuilding was accomplished the following year. After reporting on the repairs, the Canal Commissioners noted that the work restored navigation between the river and the canal "if the Fort Miller dam is kept in repair," a big qualifier.<sup>20</sup>

Two years later the debate was renewed. The Commissioners once again reported that the "old Fort Miller side cut having become but of little if any service in passing boats... and being a constant drain for water" should be closed. This time the Canal Board concurred with the proposition that an embankment or dam should be constructed in place of a deteriorating bridge over the side cut, thus sealing off access to the river. Probably to no one's surprise, the issue once again became "a source of great and increasing acrimony". Several local residents sided with the State against the mill owners who wanted the water power provided by the dam. These local residents owned land that was always flooded or frequently flooded by the dam. In December 1850, after the issue had passed once through the legislature, the Canal Board resolved that the Fort Miller Dam was no longer needed and should be abandoned. Further complications led to additional legislative and Canal Board resolutions in favor of removing the dam. On August 30, 1851 the dam was finally removed.<sup>21</sup>

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<sup>19</sup> Annual Report of the Canal Commissioners (1836), Assembly Document 65, p.19; (1838), Assembly Document 61, p.13; (1843), Assembly Document 25, p.84-85; (1844), Assembly Document 16, p.61-62.

<sup>20</sup> Annual Report of the Canal Commissioners (1845), Assembly Document 28, p.58; (1846), Assembly Document 14, p.54-55; (1847), Assembly Document 20, p.43-44.

<sup>21</sup> Annual Report of the Canal Commissioners (1850), Assembly Document 45, p.73; (1851), Assembly Document 26, p.24-25; (1852), Assembly Document 33, p.20-21; (1871), Assembly Document 6, p.39.

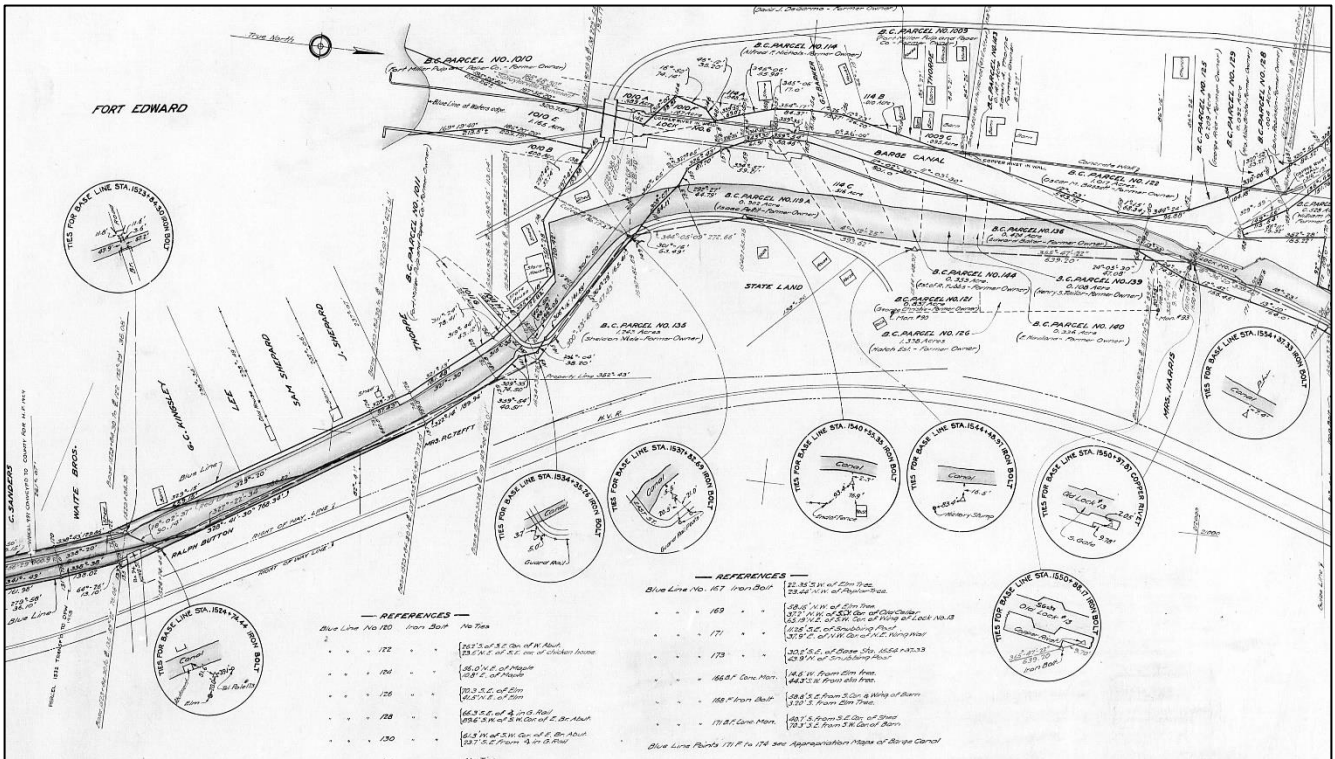
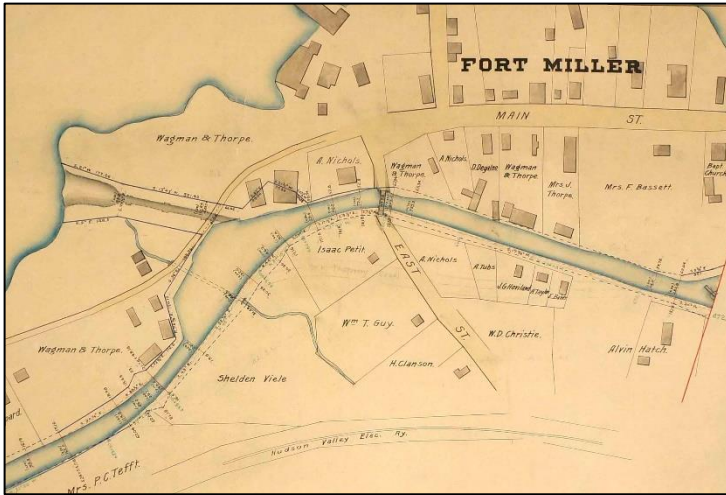


Figure 43 (top left). Schillner map of the south portion of Fort Miller, 1896, showing in the darker shading the sidecut canal of the first Champlain Canal; Figure 44 (top right). Schillner map of the north portion of Fort Miller, 1896; Figure 45 (bottom). "Blue Line" map of Fort Miller, 1919.

## Fort Edward

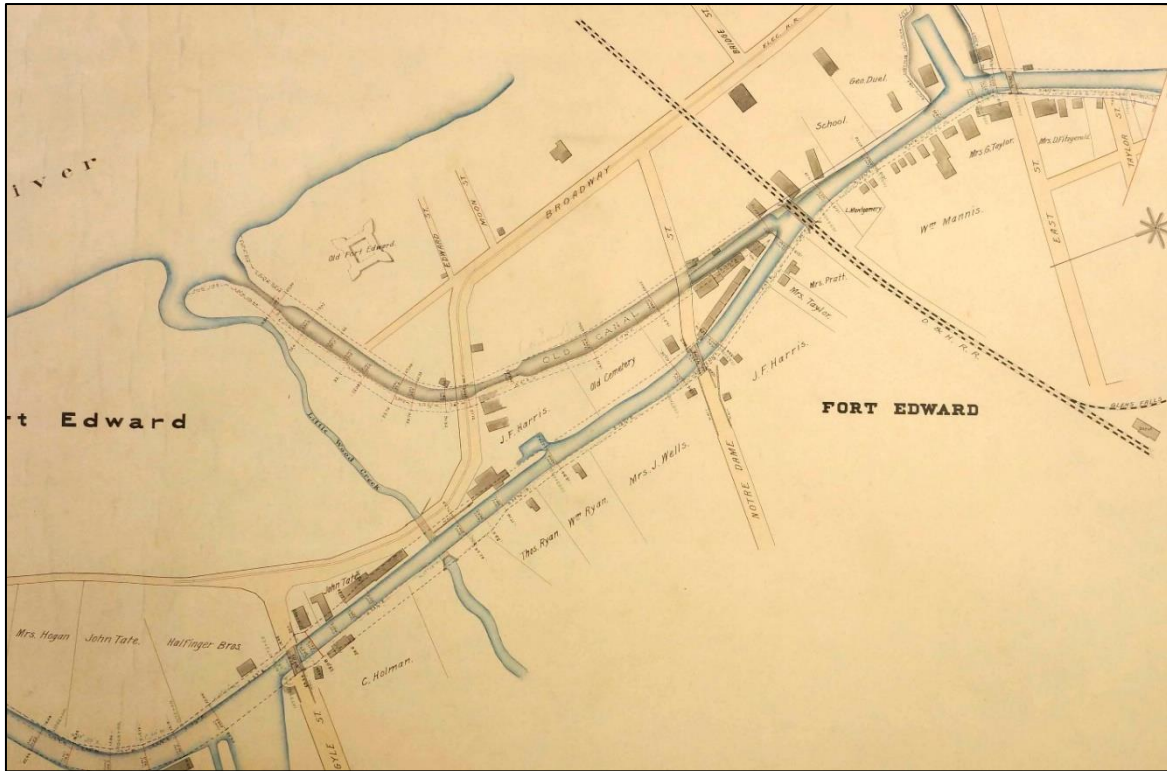


Figure 46 (top). Schillner map showing southern portion of Fort Edward, showing in darker shading the side canal to the Hudson River of the first Champlain Canal, 1896; Figure 47 (bottom). Detail of bird's-eye view of Fort Edward, 1875.

## The Five-Combined Locks of the Glens Falls Feeder

Heavy rains in the spring of 1987 washed out major portions of the Barge Canal-era sluice around the historic five-combined locks on the Glens Falls Feeder, repeating a cycle that has plagued the site throughout its history. Ironically, the damage literally and figuratively brought to light forgotten chapters of that history. The impressive and long-buried remains of a much older sluice were revealed. As part of its evaluation of the damage and needed repairs, the New York State Department of Transportation (which then maintained the canal system) sponsored a historical study of the site. That study also helped discover an interesting and information history from which the following is derived.

An interpretation of the surviving records concerning the five-combined locks and adjoining sluice on the Glens Falls Feeder must recognize that the primary reason for the complex has been to facilitate the supply of water for the summit level of the Champlain Canal and, secondarily, and at least until the 1920s, to assist navigation on the Feeder. The complex has been altered and rebuilt about a half dozen times in its nearly 175-year history to satisfy these needs. The site as it is today is largely the result of two such episodes - the rebuilding of the locks with stone in the late 1830s with a stone arch culvert following a few years later, and the construction of the Barge Canal-era concrete sluice about 1912.

The rebuilding in stone was a typical response to the predictable failure of the original five wooden locks that dated from the mid-1820s construction of the Feeder. The initial use of wood was not entirely unjustified. In 1834 the noted canal engineer, Holmes Hutchinson, reported that the wooden locks on the Feeder "have been erected in some situations with economy, where timber is abundant and of little value, where a limited amount of business... was contemplated, and where stone could not be procured, or were of bad quality."<sup>22</sup>

This first generation of the flight lacked a sluice. Water was channeled entirely through the locks. Thus, when the locks were in use, the sorely needed flow of water was interrupted. With just a few years of use, the Feeder became a source of concern to the State's Canal Commissioners.

An adequate volume of water was not being provided. The "feeder is so narrow and imperfect that an exclusive dependence on it, to supply the Champlain summit, in a dry season, would materially impair, if not, for the time, destroy the navigation of the feeder."<sup>23</sup> Hutchinson explained that -

*"The practice of feeding through the paddle-gates as will readily be perceived, is attended with great inconvenience, extra labor and detention of boats. Besides the injury to the small gates by wear, the accumulation of floodwood and other obstructions in the breast of the lock, causes a delay in working the lock gates, and sometimes is the cause of great injury to the paddle-gates. Added to all of this, there is a total suspension of the passage of water while the boats are going through the locks."*<sup>24</sup>

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<sup>22</sup> Annual Report of the Canal Commissioners (1835), p.152.

<sup>23</sup> Annual Report of the Canal Commissioners (1834), p.10.

<sup>24</sup> Ibid.

The difficulty was probably especially severe at the unique flight of five-combined locks. Following a suggestion for "proper wastes round" the locks, Hutchinson detailed how his proposed sluices should "pass the water for the supply of the summit level of the Champlain Canal, and should connect and regulate the quantity in the basins between the locks."<sup>25</sup>

The failure of the wooden locks at the five-combined and elsewhere on the Feeder was also quickly apparent. A litany of annual complaints backed up the concern. In 1833 the care of the wooden locks "has been attended with the labor and expense common in the preceding years." 1834 saw them "much decayed... the sides of the lock being forced out by the water." The wood locks were "an object of solicitude" in 1836 "on account of the large and constantly increasing expenditure required for their annual repairs."<sup>26</sup>

The annual report for 1835 was the first to provide detailed information on the five locks, stating -

*"Locks 13, 14, 15, 16, and 17 are combined; none of these but 17 have been repaired this season. The north sides of 15 and 16 were previously rebuilt with square timber, laid up dock fashion, and strongly tied into the embankment. The face of the timber walls were made tight by caulking and pitching, and are still in good condition. The south walls of these locks are much decayed, and have been crowded in by the embankment, and will probably require rebuilding this winter or in the spring. No. 17 is the upper of the five combined and rests upon a bad foundation. The water in the level above, found a passage under the breast and forced up the plank in the chamber. About one-third of the floor was taken up, the foundation puddled, the plank replaced and spiked down, and additional security given, by bolting down oak timber ten feet apart... The docking at the head was repaired, and three boat loads of gravel put in round the breast and wings. Near the close of the season, this lock was again undermined by the water, and will probably have to be rebuilt before the opening of navigation."<sup>27</sup>*

The decayed state of the locks was such that navigation had become hazardous in 1836 and "their reconstruction was indispensable." In May of that year the legislature passed an act to "alter the Glen's Falls Feeder."<sup>28</sup>

The new flight of five was under contract by November 1836 with a hoped for completion date of October 1838. At the end of 1837 work was "in such a state of forwardness that it is hoped they may be completed" by the October date. Unfortunately, in the very early part of 1839, the locks were "not yet entirely done: they will be complete, however, in a few days."<sup>29</sup>

The design of the five joined locks sought to eliminate the problems of the older flight. Holmes Hutchinson provided preliminary guidelines, applying them to all the Feeder locks -

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<sup>25</sup> Annual Report of the Canal Commissioners (1834), p.11; (1835), p.153.

<sup>26</sup> Annual Report of the Canal Commissioners (1834), p.11; (1835), p.21; (1836), p.28.

<sup>27</sup> Annual Report of the Canal Commissioners (1836), p.24.

<sup>28</sup> Annual Report of the Canal Commissioners (1837), p.28-9.

<sup>29</sup> Annual Report of the Canal Commissioners (1837), p.30; (1838), p.16; (1839), p.25.

*"Extensive quarries of limestone are to be found within a few rods of the canal, and large quantities of rock suitable for building will be excavated to widen the feeder, and all the materials for the new locks may be taken to their several sites in the season of navigation.*

*[The locks should be] constructed of good hammered limestone having large and even beds, and the walls well connected by headers from front and rear with good close joints, and well laid in cement... Care should be taken to have the quoins well cut; the stone should be large and should be laid alternately a header and a stretcher; all the stone used in the locks walls should have good and regular shapes and be of uniform thickness between opposite surfaces, and each stone should extend into, or across the wall at least two feet."*<sup>30</sup>

The Canal Commissioners strayed from another of Hutchinson's suggestions in preserving the five-combined instead of separating them.

*"A single line of combined locks, is, no doubt, objectionable, in most situations. The delay occasioned by the necessity of passing one boat through the entire combination, before another, passing in a different direction, can enter; and the much greater quantity of water required for the combination than for single locks, are serious objections, where the amount of navigation is considerable, or where the supply of water is deficient, and wanted. But as these objections do not exist in this instance, and as an important advantage is obtained by the adoption of the combination, in reference to the expense of the work, it was thought expedient that the combination should be retained."*<sup>31</sup>

The locks were made of "hammer-dressed stone, laid in hydraulic cement." There were "15 feet wide at the lower top water line within the chamber, and 100 feet long between the upper and lower quoins." Stone was "brought from the Kingsbury quarries, and are of a firm durable character." Though obviously requiring periodic maintenance over the years, as described later, the five locks have survived well to this day.<sup>32</sup>

The same success could not be claimed for the sluices that were built around the Glen's Falls Feeder locks at the time of this rebuilding in stone. A separate set of contracts covered the sluices. Their construction appears to have been done simultaneously with, though independent of the work on the locks. The contractor for all the Feeder sluices was Page, Kellogg, Sage, and Company of Albany.<sup>33</sup>

Several types of bypasses were employed along the Feeder. An 1840 report on the inadequacy of these new structures described wooden trunks, one buried in sand, some uncovered and the adaptive reuse of the old wooden locks at some sites. The report implies that at the five-combined the new upper three stone locks were bypassed by reuse of all or part of the old combine. These were described as "much decayed and will not remain standing another year without expensive repairs." The lower two locks apparently had wooden sluices "that may last three years."<sup>34</sup>

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<sup>30</sup> Annual Report of the Canal Commissioners (1835), p.152-3.

<sup>31</sup> Annual Report of the Canal Commissioners (1837), p.29.

<sup>32</sup> Ibid, p.30; (1839), p.25.

<sup>33</sup> Annual Report of the Canal Commissioners (1838), p.16; Canal Contracts, Box 43, Series A1899, New York State Archives.

<sup>34</sup> Annual Report of the Canal Commissioners (1841), p.106-7.

The same 1841 report proposed "to construct substantial stone arches on timber foundations; the foundation to be so placed as to be always covered with water. The foundations of the old wooden locks may be used where they are not decayed."<sup>35</sup>

The proposals were incorporated in a legislative enactment of the following year. The work on the stone sluices was under contract by July 1841, and by the end of the year, the Canal Commissioners could report that the "work has been undertaken by energetic and responsible contractors, who have prosecuted it as fast as they have been directed. More than half of the masonry for the sluices... was finished before the close of navigation... it may be finished by the 1st of June next."<sup>36</sup>

Despite expectations, the underground, arched stone sluices would have to be replaced, at least around the five-combined, in less than twenty years. In 1853 a general comment about the Glens Falls Feeder sluices stated that several are "in bad condition, and will require considerable repairs." The following year the Canal Commissioners described how the "sluices around the locks on the Glens Falls Feeder, have been in a precarious condition for several years. Any further delay in rebuilding them will not only endanger the navigation of this feeder, but all that portion of the Champlain canal, extending from Fort Miller to the village of Fort Ann." An 1866 report explained how "the sluices around the locks were originally constructed by an arch culvert extending from the bulkhead to near the foot of the lock, and covered with earth. This arch has, in every instance, failed, the foundation plank being laid lengthwise has been forced up, and the structure undermined by the action of the water carrying away the sandy material on which it rests. At a portion of the locks the arch has been abandoned and a new structure of wood built above it to conduct the water into the level below."<sup>37</sup>

In June 1858 a contract was let to Joseph McFarland of Sandy Hill (Hudson Falls) for a new sluice around the flight. The McFarland sluice fared even worse, failing on July 3, 1868. "The sluice... gave way, and the water passing under the foundation at the head, carried out the greater portion of the earth from beneath the trunk, which consequently dropped down a shapeless mass. It required four days to repair it and restore navigation on the feeder, but in the mean time, by passing water through the locks, the passage of boats on the main canal was but slightly interrupted." That same year the State Engineer report that a sluice around Feeder Lock "8" had been completed, perhaps referring to the portion that failed in July. Clues in the account of the break imply that the 1858 structure was an above-ground, wooden trunk. In describing another Feeder sluice several years later, the local superintendent said it stood on "stilts and over the old and decayed arch." The "arch" perhaps refers to the c1841 stone culverts. The five-combined sluice was probably similarly arranged.<sup>38</sup>

For the rest of the 19th-century, maintenance or replacement of the sluice around the flight of locks followed this pattern of reengineering for earlier failures. Even immediately

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<sup>35</sup> Ibid., p.107.

<sup>36</sup> Annual Report of the Canal Commissioners (1842), p.77.

<sup>37</sup> Annual Report of the Canal Commissioners (1857), p. 37; (1858), p.48; Annual Report of the State Engineer and Surveyor (1867), p.44.

<sup>38</sup> Canal Contracts, Box 43, Series A1899, New York State Archives, Contract to Joseph McFarland; Annual Report of the State Engineer and Surveyor (1869), p.43, 47; Annual Report of the Superintendent of Public Works (1881), p.64.

after the 1868 repairs, the wooden sluice around the five-combined need rebuilding "as much difficulty and risk have been encountered in making it stand during the season." Work in 1870 included further repairs and a "new timber crib and apron" at the foot of the sluice. The following year new bulkheads were installed. In 1872, repeating a phrase often heard over the years on the Feeder, the local superintendent stated that the "sluices around all the locks on the Glen's Falls Feeder need rebuilding. They are very much worn, and, in some places, dangerous." The five-combined sluice was "taken down, cleaned out, and rebuilt" in 1874.<sup>39</sup>

An entirely new sluice seems to have been build in 1875-6. In 1875 the foundation for the trunk had been competed along with "a part of the wood-work." The work was finished by Superintendent Conery with a "crib constructed and filled with stone between head of the locks and bulk-head, and 100 lineal feet vertical wall, in cement, on berme bank, to protect the same, and apron loaded with stone at the foot of the sluice."<sup>40</sup>

Less than ten years later the State Engineer was again complaining about the inadequacy of the Feeder sluices. "There are eight sluices around the feeder locks, with a bulk-head at the head of each... Some of these sluices have been in use seventeen years, and nearly worn out. Part of them have been renewed during the two years past, and some more work will be needed to put them in complete condition. The bulk-head and masonry also need some repairs." In very repetitive fashion the annual reports for the next six years recommend a new trunk and further rebuilding for the five-combined sluice. Despite these pleas for prompt attention, no work was apparently done until 1889.<sup>41</sup>

In October 1889 a contract was let to Daniel Sturtevant for building a new sluiceway and discharge basin at the five-combined. The work was completed within the year. Plans for the new structure clearly show a stepped wooden trunk resting on stone arched piers. All was above ground. Yet, despite the rebuilding, by 1892 "repairs" were again underway. In 1896 the wood bottom was failing and several new stone piers needed. No report of actual work along these lines is found until 1898 when a new lining was installed and the sluice "otherwise strengthened." A "partly rebuilt" comment was carried in the 1899 report for the five-combined sluice. 1901 saw additional repairs and stone pavement at the foot of the sluice relaid in Portland cement.<sup>42</sup>

The last published comment of the five-combined sluice in the Superintendent of Public Work's annual reports prior to the major alterations during the construction of the Barge Canal was made in 1903. It simply says that a "new sluice" was built around the five-combined locks. This terse comment is especially frustrating. Photographs from the turn-of-the-century clearly show a bypass that is built into the slope of the ground, not raised on stilts or piers. The appearance is very similar to the Barge Canal structure that replaced it. Up until the 1903 comment, all evidence points to a "floating" trunk, above ground. The "new sluice" of 1903 may be the new type shown in the photographs. An additional clue comes

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<sup>39</sup> Annual Report of the State Engineer and Surveyor (1869), p. 52; Annual Report of the Canal Commissioners (1871), p.38; (1872), p.33; (1873), p.42; (1875), p.47.

<sup>40</sup> Annual Report of the Canal Commissioners (1876), p.46; (1877), p.44.

<sup>41</sup> Annual Report of the State Engineer and Surveyor (1884), p.86; (1886), p.62; (1888), p.50; (1889), p.53; Annual Report of the Superintendent of Public Works (1885), p.47; (1886), p.45; (1889), p.53.

<sup>42</sup> Annual Report of the State Engineer and Surveyor (1891), p.67; "Canal Structure Book 6," p.12, Series B0292, New York State Archives; Annual Report of the Superintendent of Public Works (1893), p.65; (1897), p.129; (1899), p.107; (1900), p.82; (1902), p.98.



three years later when a report is made of a "new foot bridge across the sluice at Lock 10." Reference to an earlier bridge cannot be found. An earlier structure would seem unlikely with the sluice raised several feet above ground. Other foot bridges existed on the site. In 1891 they were put up at Lock 6, 8, and 10 with the one at Lock 6 being replaced in 1902.<sup>43</sup>

As previously mentioned, the next major alteration to the site resulted from the construction of the Barge Canal, rebuilding the sluice in concrete. Use of the locks survived the transition to the Barge Canal era. Indeed, reports from as late as the mid-1920s document fairly active use of the Feeder by commercial traffic. According to the 1941 annual report of the State's Department of Public Works, traffic on the Feeder "practically ceased in 1931" and was officially declared closed for navigation in April 1941.<sup>44</sup>

Perhaps more so than the sluice around the five-combined, Locks 6 through 10 required continual maintenance, often beyond the stage of being classed as preventative. In 1853 the locks on the Feeder were reported to be "now all in good condition." In 1877 all the locks on the Feeder were reported to be in "very bad condition," followed by the comment in the next annual report that the locks had been "in bad condition for many years. They are constantly settling, making it impossible for large-size boats to lock." However, the superstructure of the chambers has remained remarkably intact since their c1838 completion. Only one report could be found of actually replacing some of the masonry. In 1871 "new hollow quoins and recess coping" were laid at the flight.<sup>45</sup>

Adequate water flow through the site was as much a concern for the locks as it was with the sluice. Portions of the flight were modified to increase the volume of water needed for lockages. In 1864 the masonry in Lock 9 was "dressed down... to allow the passage of larger boats." For perhaps a similar reason, the "big bevels" were cut out in 1868 along one side of at least one of the chambers in the flight. While the annual report is not completely clear, the top edges of the chambers appear to have been raised in 1873 with "timber coping to prevent overflow of water." The rationale for this effort might be found in a comment made four years later that "the five combined will have to be raised fifteen inches. The increase in draft of boats allowed this season makes it necessary, as, in giving them water enough to clear mitre-sills, floods over the small timber already placed on top of the locks, and is liable to cause serious damage at any time." Perhaps this work was partially completed in 1880 when "wooden coping" was placed on the upper lock of the five combined.<sup>46</sup>

The transfer of water from an upper chamber to a lower chamber was probably controlled in two ways. There are at least two references to valves in the lock gates and water could be released through them to the chamber below. If a boat was in the lower chamber at the time, this method no doubt proved objectionable to those on the boat since the water might have initially entered the chamber at deck level. Another procedure was probably employed at these times. Individual culverts were built within the lock walls, on

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<sup>43</sup> Annual Report of the Superintendent of Public Works (1904), p.72; (1907), p.112; (1892), p.47; (1903), p.73; Photograph of Five Combined Locks, Gayer Collection, Canal Society of New York State; "Contract 56" album, negative 49, Series 11,833, New York State Archives.

<sup>44</sup> Annual Report of the Department of Public Works (1941), p.29.

<sup>45</sup> Annual Report of the Canal Commissioners (1857), p.36; (1878), p.36; (1872), p.32; Annual Report of the Superintendent of Public Works (1879), p.70.

<sup>46</sup> Annual Report of the Canal Commissioners (1865), p. 20; (1874), p.37; (1878), p.36; Annual Report of the State Engineer and Surveyor (1869), p.47; Annual Report of the Superintendent of Public Works (1881), p.61.

each side, around the mitre sills. Water was emptied from the upper lock through a culvert to the base of the one below, underneath the boat. There are several references to this system. Ten new culvert frames were installed in 1872. A "new culvert" was put in the five-combined in 1876. "Five new feed culverts" were constructed in 1883. The wickets that are occasionally mentioned were probably the tools needed to regulate the flow to the culverts or through the gates. New ones are listed in 1885 for Lock 6, in 1887, and in 1889 for Lock 9.<sup>47</sup>

As might be expected, wooden elements of the five locks most often needed replacement due to wear and deterioration. An exceptional year for such work was apparently in 1872. Five new lock gates were installed along with five mitre sills, ten culvert frames, and several new, painted balance beams. The work was completed with the comment that five additional gates were still needed. Most of this need was probably satisfied in the next two years. New upper gates were placed in Lock 10 in 1883, probably as a result of taking up and relaying the stone at the head of the lock. Gates were again replaced in Locks 6 and 10 in 1891. A new gate went into Lock 6 in 1893. The two lower gates of Lock 6 were replaced in 1903. The fact that these upper and lower chambers were the most frequently mentioned implies that they withstood the most severe wear, perhaps from the initial entrance of barges into the flight.<sup>48</sup>

Other gate-connected work can be represented by the report for activities in 1889. On Lock 6 a new "toe-post" on the lower gate and a new balance beam were installed. On Lock 8 the replacement toe-post was in the upper gate and probably associated with another new balance beam. Lock 9 also received a toe-post.<sup>49</sup>

The wooden mitre sills were the next most mentioned item. The first specific mention came in 1873 for Lock 7. "Three new mitre sills" were placed in the five combined in 1881. New sills were put in Locks 6, 7, 8, and 10 in 1884. Single sill replacements also occurred in 1889 (Lock 7, low end), 1896 (Lock 6), and 1897 (Lock 8). In 1892 mitre sills on Locks 6 and 8 were "repaired and strongly fastened."<sup>50</sup>

Other woodwork repairs included the bottom planking of the lock chambers. Preservation of a water-tight seal was especially critical on the Feeder, where leaks have been a nuisance to the present day. In 1879 the assistant Superintendent of Public Works recommended taking up the planking to pour a more secure concrete layer on all the locks in his division where it had not already been done. In 1897 the bottom of Lock 7 was concreted and replanked along with a portion of Lock 6. Another report of such work occurred in 1907 but implies that it must have been done earlier. The plank bottoms on Lock 8 and 9 were torn out, the old cement taken out "between the timbers," new concrete poured, and the bottom replanked.<sup>51</sup>

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<sup>47</sup> Annual Report of the Superintendent of Public Works (1890), p.82; (1899), p.107; (1884), p.46; (1886), p.43; (1890), p.82; Annual Report of the Canal Commissioners (1873), p.40; see also description of frame for Lock 7, (1874), p.37; (1877), p.43; see reference for "three", Annual Report of the State Engineer and Surveyor (1888), p.50.

<sup>48</sup> Annual Report of the Canal Commissioners (1873), p.40, 41; (1874), p.37; (1875), p.47; Annual Report of the State Engineer and Surveyor (1884), p.81; Annual Report of the Superintendent of Public Works (1885), p.44; (1892), p.47; (1894), p.78; (1904), p.72.

<sup>49</sup> Annual Report of the Superintendent of Public Works (1890), p.82.

<sup>50</sup> Annual Report of the Canal Commissioners (1874), p.37; Annual Report of the Superintendent of Public Works (1882), p.100; (1885), p.44-45; (1890), p.82; (1897), p.125; (1898), p.132; (1893), p.64.

<sup>51</sup> Annual Report of the Superintendent of Public Works (1880), p.18; (1898), p.132; (1908), p.135.

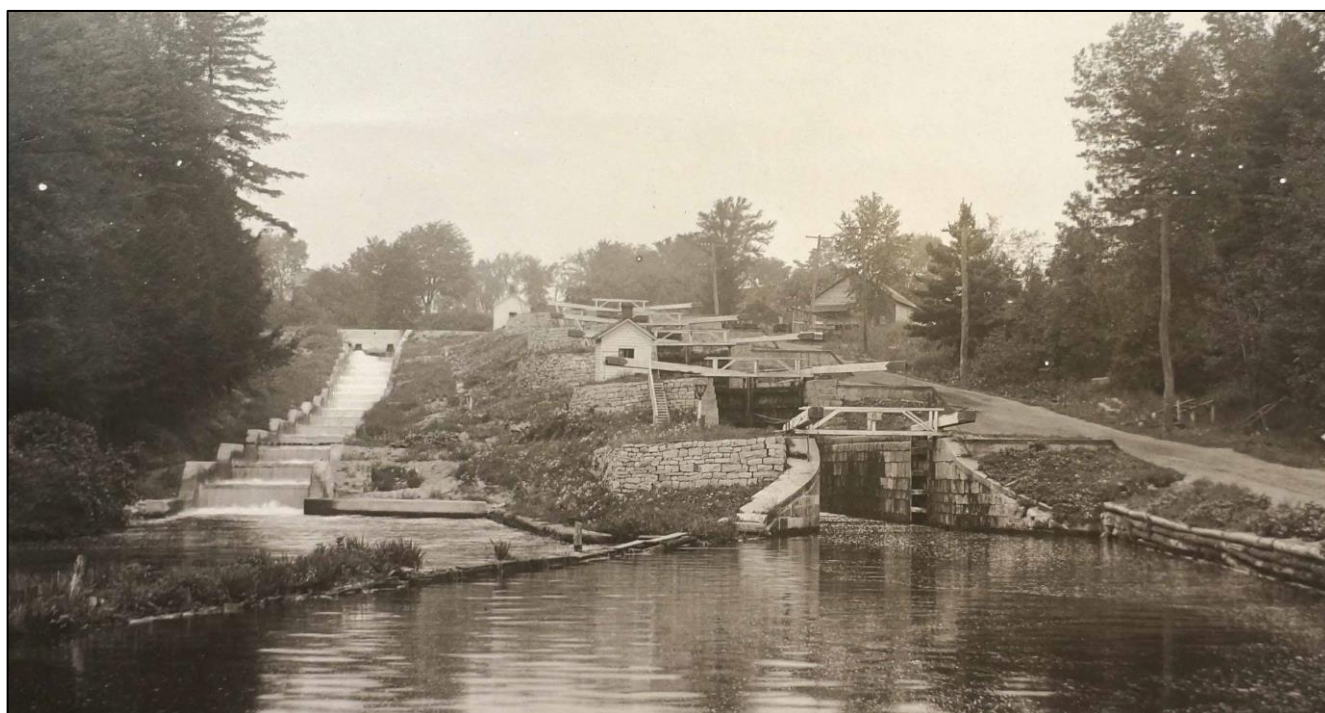


Figure 48 (top). View up the Five Combined Locks of the Glens Falls Feeder, c1900; Figure 49 (bottom). View up the Five Combined Locks of the Glens Falls Feeder, post-Barge Canal construction, September 8, 1913.



Figure 50. The 1921 canal motorship Day Peckinpaugh going through the Crocker's Reef Guard Gate, August 6, 2009 (Duncan Hay).