

HISTORIC AMERICAN ENGINEERING RECORD

NEW YORK STATE BARGE CANAL, LOCK CS1 (Cayuga-Seneca Canal, Lock CS1)

HAER No. NY-521

- Location:** 6817 River Road, Cayuga, Cayuga County, New York
- Lock CS1 is located at latitude 42.94751878100, longitude -76.73432367300. The coordinate represents the lock gate's upstream apex. This coordinate was obtained in summer 2009 using a GPS mapping grade unit accurate to +/- 3 meters after differential correction. The coordinate's datum is North American Datum 1983. Lock CS1's location has no restriction on its release to the public.
- Dates of Construction:** The lock and dam were constructed from 1911-1914. The powerhouse was completed in 1915.
- Engineer:** State Assistant Engineer R.W. Cady oversaw the construction of Lock CS1.
- Builder:** Scott Brothers built the lock and dam. Lupfer and Remick erected the powerhouse and installed the lock equipment.
- Original Owner and Use:** State of New York; shipping and transportation
- Present Owner and Use:** New York State Canal Corporation; shipping and transportation
- Significance:** Lock CS1 is significant as a component of the New York State Barge Canal and the Cayuga-Seneca Canal. For more information on the Cayuga-Seneca Canal, see HAER No. NY-528. For more information on the New York State Barge Canal and structures, see HAER No. NY-369.
- Description:** Lock CS1, also known as "Mud Lock," has a 9' lift. It is located at the north end of Cayuga Lake, about 1 mile south of the Cayuga-Seneca Canal's junction with the Erie Canal. The lock is on the east side of the channel and is separated from the dam by a strip of land. The site consists of the lock and related structures, lockhouse, storage sheds, and comfort station, in addition to a movable dam with Taintor gates.
- The lock is typical of those along the Barge Canal, as is the operating machinery. The concrete chamber walls have been faced with mild-steel

plate, and cast-iron coping has been installed along the edges. The control stand shelters are located on the east side of the lock chamber. These are single-story frame structures with novelty siding and gable-front roofs with asphalt shingles. The shelters have pop-out wooden windows and wooden pane-and-panel doors. A pipe railing surrounds the public access side of the lock, which is illuminated by modern light fixtures. The lock and control stand shelters are in good condition.

A guard gate is located at the southern end of the lock. The riveted-steel truss superstructure sits on the chamber walls. The vertical-lift gate operates by a cable pulley system and counterweights of steel and concrete. It appears to be in good to fair condition.

The scored concrete guide walls are generally in good condition. The northwest guide wall exhibits minor spalling and cracks along the scoring. The northeast guide wall also has some minor spalling. Concrete-filled cast-iron bollards are set back from the northeast and southeast guide walls on concrete pads, and modern light fixtures illuminate the wall lengths.

Originally, there was a gasoline-electric powerhouse at the site, but it was removed at an unknown date.

The lockhouse, centered on the east side of the lock chamber, is a single-story concrete block structure on a concrete foundation. The side-gable roof is covered with asphalt shingles, and there is a concrete chimney. The lockhouse has one-over-one-light vinyl windows with steel mesh coverings and shed overhangs. Wooden pane-and-panel doors with steel mesh coverings and gabled overhangs provide entry to the building. The lockhouse is in good condition. It dates to the 1960s, and it was built on the opposite side of the chamber from the original lockhouse.

Two modern storage sheds dating to the 1990s are located at Lock CS1. The southwest storage shed, sitting at the southern end of the lock on the strip of land separating the lock from the dam, is a single-story frame structure on a concrete slab foundation with vertical-board siding. The offset side-gable roof is covered with asphalt shingles. There is a three-light awning window and a wood door. The shed is in good condition. Another storage shed is located on the opposite side of the chamber, east of the lockhouse. It is nearly identical to the southwest one and is also in good condition.

There are also structures at the site that are used for recreation purposes. These include a boat launch with a patterned concrete ramp upstream of the lock. A comfort station is located south of the site. The single-story

concrete block building with an asphalt-shingled gable roof is currently closed.

An asphalt access road leading to a gravel parking area on the east side of the chamber provides access to the site.

The movable dam is located to the west of the lock. The dam has a riveted-steel superstructure and six Taintor gates located between concrete abutments and piers that exhibit signs of spalling and breaking. The gates operate with concrete counterweights. An open-grated catwalk extends the length of the structure. A modern electrical cabinet sits next to the dam. Overall, the dam is in fair condition, except for the concrete abutments and piers, which are in poor condition.

History:

Lock CS1 was built as part of Contract No. A, awarded to the Scott Brothers of Rome, New York, on December 30, 1910, and overseen by State Engineer R.W. Cady. The contract included construction of the lock and a dam at the outlet of Cayuga Lake. Work on the site began in February 1911 when the contractor drove the steel sheet piling around what would become the west wall of the lock. Concrete work on this wall began in June. Excavation of the main section of the lock and east wall started at the south end. The contractor loaded the excavated material onto cars, which deposited the material at a spoil area to the north of the lock site.¹

During 1912 and 1913, Scott Brothers completed the concrete work for the east lock wall and lock chamber. In addition, work progressed on the dam, which had concrete piers and abutments and was equipped with Taintor gates. A storehouse, which is no longer extant, was built between the lock and dam. Contract No. A was completed in 1914.² As Noble Whitford notes in his history of the canal, Taintor gates were used throughout the New York State Barge, but this location was perhaps the “most conspicuous” since “the gates constitute the whole of the structures that act as regulating works for Cayuga and Seneca lakes respectively.”³

Due to flooding in Cayuga Lake causing the water to rise above the walls of Lock CS1, the State of New York raised the lock walls and operating

¹ *Annual Report of the State Engineer and Surveyor of the State of New York for the Fiscal Year ended in September 30, 1911, Vol. 1* (Albany: J.B. Lyon and Company, 1912), 143.

² *Annual Report of the State Engineer and Surveyor of the State of New York for the Fiscal Year ended in September 30, 1912, Vol. 1* (Albany: J.B. Lyon and Company, 1913), 199; *Annual Report of the State Engineer and Surveyor of the State of New York for the Fiscal Year ended in September 30, 1914, Vol. 1* (Albany: J.B. Lyon Company, 1915), 231.

³ Noble Whitford, *History of the Barge Canal of New York State* (Albany: J.B. Lyon Company, Printers, 1922), 474.

equipment 2' in 1927. The 1927 Annual Report noted as a result of this work that “in the extreme high water near the close of the season no difficulty was experienced in operating the lock.”⁴ The following year, a sea wall was built at the site “to prevent floods from damaging the powerhouse and lock grounds.”⁵

The powerhouse construction and lock equipment installation were covered under Contract No. M, awarded to Lupfer and Remick of Buffalo, New York. Alteration 1 to the contract changed the foundation of the powerhouse at Lock CS1, but otherwise work proceeded on the contract as specified. By 1915, the powerhouse had been completed with 80 percent of the gasoline-electric operating system installed. The following year, the lock operating machinery, including that used to operate the valves and gates, had been completed, aside from painting.⁶

Repairs and alterations have been made to the lock since its initial construction. The 1933 Annual Report indicates that the original timber gates were already “showing indications of failure and will soon have to be replaced.” By 1940, all the timber gates on the Cayuga-Seneca Canal had been replaced with welded steel ones manufactured at the Syracuse shop.⁷ The lock underwent a “general overhaul” in 1943, and new buffer beams were installed. The original buffer beam had been located in a recess in the approach wall and then swung across the channel, but the new buffer beam was a “vertical lift type supported on light towers at each end.”⁸ In 1966, new lock gates were installed at Lock CS1 under Contact M66-1. In addition, electrical work was done at the site, repairs were made to the approach walls, and the lock chamber walls were resurfaced with “W.I. plates,” referring to the wrought iron or steel panels still in place.⁹

The dam underwent repairs in 1941 because an “extensive leak” had been found under the concrete sills of Taintor gates 1 and 2. To fix the

⁴ State of New York, Department of Public Works, *Report of the Superintendent of Public Works for the Year 1927* (Albany: J.B. Lyon Company, 1928), 18.

⁵ State of New York, Department of Public Works, *Annual Report of the Superintendent for the Year 1928* (Albany: J.B. Lyon Company, 1929), 8.

⁶ *Annual Report, 1914*, 185; *Annual Report of the State Engineer and Surveyor of the State of New York for the Fiscal Year ended in September 30, 1915, Vol. 1* (Albany: J.B. Lyon Company, 1916), 227; *Annual Report of the State Engineer and Surveyor of the State of New York for the Fiscal Year ended in September 30, 1916, Vol. 1* (Albany: J.B. Lyon Company, 1917), 206.

⁷ State of New York, Department of Public Works, *Annual Report of the Superintendent for the Year 1933* (Albany: J.B. Lyon Company, 1934), 20; State of New York, Department of Public Works, *Annual Report of the Superintendent for the Year 1940* (Albany: J.B. Lyon Company, 1941), 21.

⁸ State of New York, Department of Public Works, *Annual Report of the Superintendent for the Year 1943* (Albany: J.B. Lyon Company, 1944), 47.

⁹ Maintenance Contracts, August 7, 1966.

problem, a new concrete apron was placed “at an approximate depth of 3 feet and extending 15 feet ahead of the existing sill.”¹⁰ The dam was again rehabilitated in 1990 under Contract D252322.¹¹

Sources:

Annual Report of the State Engineer and Surveyor of the State of New York for the Fiscal Year ended in September 30, 1911, Vol. 1. Albany: J.B. Lyon Company, 1912.

Annual Report of the State Engineer and Surveyor of the State of New York for the Fiscal Year ended in September 30, 1912, Vol. 1. Albany: J.B. Lyon Company, 1913.

Annual Report of the State Engineer and Surveyor of the State of New York for the Fiscal Year ended in September 30, 1913, Vol. 1. Albany: J.B. Lyon Company, 1914.

Annual Report of the State Engineer and Surveyor of the State of New York for the Fiscal Year ended in September 30, 1914, Vol. 1. Albany: J.B. Lyon Company, 1915.

Annual Report of the State Engineer and Surveyor of the State of New York for the Fiscal Year ended in September 30, 1915, Vol. 1. Albany: J.B. Lyon Company, 1916.

Annual Report of the State Engineer and Surveyor of the State of New York for the Fiscal Year ended in September 30, 1916, Vol. 1. Albany: J.B. Lyon Company, 1917.

Maintenance Contracts, August 17, 1966; 1990.

State of New York, Department of Public Works. “Report of the Superintendent of Public Works for the Year 1927.” Albany: J.B. Lyon Company, 1928.

_____. *Annual Report of the Superintendent for the Year 1928.* Albany: J.B. Lyon Company, 1929.

_____. *Annual Report of the Superintendent for the Year 1933.* Albany: J.B. Lyon Company, 1934.

_____. *Annual Report of the Superintendent for the Year 1940.* Albany: J.B. Lyon Company, 1941.

_____. *Annual Report of the Superintendent for the Year 1941.* Albany: J.B. Lyon Company, 1942.

_____. *Annual Report of the Superintendent for the Year 1943.* Albany: J.B. Lyon Company, 1944.

¹⁰ State of New York, Department of Public Works, *Annual Report of the Superintendent for the Year 1941* (Albany: J.B. Lyon Company, 1942), 25.

¹¹ Maintenance Contracts, 1990.

Historians: Laura S. Black and Jami A. Babb, summer 2009

**Project
Information:**

The Historic American Engineering Record (HAER) is a long-range program that documents and interprets historically significant engineering sites and structures throughout the United States. HAER is part of Heritage Documentation Programs (Richard O'Connor, Manager), a division of the National Park Service, United States Department of the Interior. The New York State Barge Canal Survey was undertaken in summer 2009 in cooperation with the Erie Canalway National Heritage Corridor (ERIE), Beth Sciumeca, Executive Director. Justine Christianson, HAER Historian, and Duncan Hay, ERIE, served as project leaders. The staff of the New York State Canal Corporation provided access to the sites. Craig Williams of the New York State Museum provided research materials and assistance. The HAER field team consisted of Jami Babb and Laura Black.