

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY # EXE0043**

**Name, Location, Ownership**

- 1. Historic name Great Dam
- 2. District or area Exeter Waterfront Commercial H.D.
- 3. Street and number Exeter River, 200 ft. downstream of High St. Bridge (Great Bridge)
- 4. City or town Exeter
- 5. County Rockingham
- 6. Current owner Town Exeter/NH Fish & Game

**Function or Use**

- 7. Current use(s) Dam and fish passage
- 8. Historic use(s) Dam

**Architectural Information**

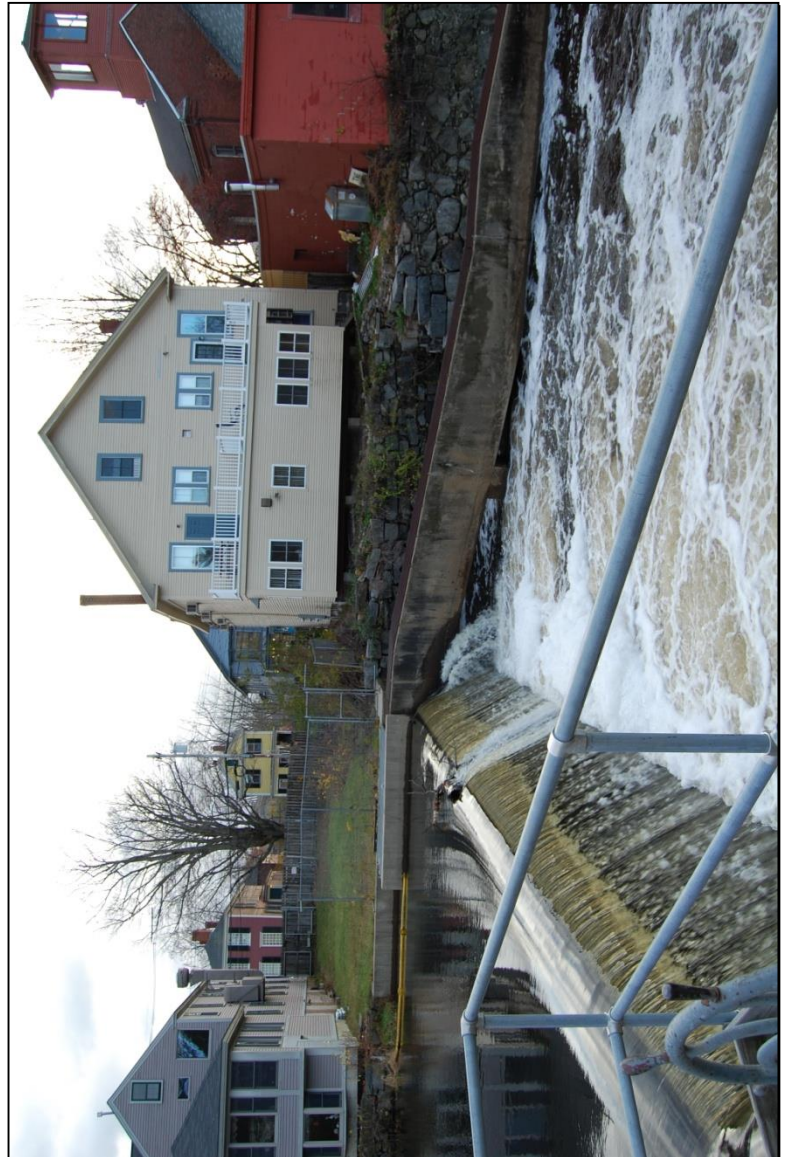
- 9. Style N/A
- 10. Architect/builder N/A
- 11. Source N/A
- 12. Construction date 1914
- 13. Source NH DES inspection report (2000)
- 14. Alterations, with dates c. 1938, 1968, post-2000
- 15. Moved? no  yes  date: \_\_\_\_\_

**Exterior Features**

- 16. Foundation N/A
- 17. Cladding N/A
- 18. Roof material N/A
- 19. Chimney material N/A
- 20. Type of roof N/A
- 21. Chimney location N/A
- 22. Number of stories N/A
- 23. Entry location N/A
- 24. Windows N/A
- Replacement? no  yes  date: N/A

**Site Features**

- 25. Setting Downtown business district
- 26. Outbuildings N/A
- 27. Landscape features N/A



- 35. Photo #1 Direction: W
- 36. Date 2011
- 37. Reference #: EXE0043 01

- 28. Acreage N/A
- 29. Tax map/parcel # N/A
- 30. UTM reference 4760568N, 341453E
- 31. USGS quadrangle and scale Exeter, 24,000

**Form prepared by**

- 32. Name Rita Walsh and Nicole Benjamin-Ma
- 33. Organization Vanasse Hangen Brustlin, Inc.
- 34. Date of survey November 2011

39. LOCATION MAP:





**41. Historical Background and Role in the Town or City's Development:**

Summary

The Exeter River's Great Dam (#082.01 in NH DES system), located in the heart of Exeter's central business district, has served an important role in the town's industrial history for almost 100 years. Its location just upstream of the Great Falls has been the site of a dam since the 1640s<sup>1</sup>, which provided the source of water power for numerous mills that lined the banks of the Exeter River until 1828. In that year, the incorporators of the newly-formed Exeter Manufacturing Company and the Exeter Mill and Water Power Company, who were already the holders of the dam/flowage rights, transferred those rights to the corporations. The corporations agreed to build a new dam within nine months. The specific completion date for this new dam and what type of dam it was is unknown.

The dam from the late 1820s served the Exeter Manufacturing Company, presumably until its replacement in 1914 with the existing concrete gravity dam. No information was found to prove that the 1820s dam was not replaced or modified earlier, although it appeared that the company was preparing to build a new dam by 1896. No plans were found of the 1914 concrete gravity dam and the reason for the dam's replacement in 1914 is unknown.

Modifications were made to the 1914 dam and penstock in 1938, 1967, 1968 and the 1970s when the penstock and tail race were taken out of service and obstructed. The nature of the repairs in 1938 is unknown. In 1968, a concrete fish passage and concrete weir were added by the New Hampshire Fish and Game Department to facilitate fish passage in the river. In October 1981, the dam and its associated water rights were sold to the Town of Exeter by the Miliken Manufacturing Company, which had taken over the operation of the Exeter Manufacturing Company complex in 1966. The last owner and occupant of the mill complex was the Nike Company, which purchased the mill in 1981, but only operated for two years until it closed in 1983. After standing vacant for a few years, the industrial complex was rehabilitated for housing by the Arbor Development Company in the late 1980s, after their purchase in 1986. The retained right of the industrial complex was a right to draw water from the impoundment/penstock for the purposes of fire suppression for only one of the mill buildings. The penstock is currently used for cooling water and fire suppression purposes for the condominiums.

Dams and Early Mill Activity at the Great Falls

When the current Great Dam was built in 1914, it had been preceded by over 275 years of water power and mill activities in the immediate area of the Great Falls, from which the dam took its name. The first two centuries of development in the vicinity of Great Falls revolved mostly around family-run mills and some small commercial enterprises along Water Street, on the west bank of the Exeter River, and on the east bank as well. During the 1630s, Reverend John Wheelwright moved from Newburyport, Massachusetts, with his small congregation, seeking more religious freedom than allowed by the Massachusetts Bay Colony. The first settlement was by Great Falls, which allowed residents to take advantage of the water power provided by the falls, the availability of abundant lumber, and the navigability of the Exeter and Squamscott Rivers for transport.

The earliest mill in Exeter was downstream of the Great Dam at the Lower Falls where the String Bridge crosses the Exeter River at Kimball's Island; Thomas Wilson was granted the right to Kimball's Island where he established his grist mill in 1640, two years after the town of Exeter was founded. The earliest mills at the Upper Falls were established soon thereafter in the 1640s by members of the town's prominent Gilman family. Edward Gilman built two saw mills, one on each side of the river. Other members of the Wilson and Gilman families also established mills in the Great Falls vicinity of downtown Exeter, including Humphrey Wilson's saw mill on the east side of the river, and John Gilman's grist mill constructed on the small island at the Lower Falls, now in the center of String Bridge; Bell 1888, 331-332). Several types of mills utilized the falls during the 18th century: the 1802 Plan of Exeter indicates a grist mill, a saw mill, an oil mill, a fulling mill, and two unspecified mills along the banks of the river at Great Falls (Merrill 1802). This map shows a dam in the location of the current Great Dam and two dams with a rounded profile on either side of Kimball's Island, although this map does not show the island itself (it is only referred to as "ledge" and it does not show any buildings on the ledge). Other industries near the river included a nail factory in Hemlock Square, near the east bank of the river near High Street and a starch factory, built 1824, which provided starch to textile factories in Lowell, Massachusetts, at the foot of Great Bridge (High Street) and Franklin Street (Perry 1913, 18-19).

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<sup>1</sup> A dam is assumed to have been built by Edward Gilman near or at this location for his mills built in the late 1640s.

Construction of New Dam and Establishment of the Exeter Manufacturing Company

In 1827, seven local men formed two companies that would come to dominate Exeter's central area and have an enormous effect on the town's economy. The original proprietors of both the Exeter Manufacturing Company and the Exeter Mill and Water Power Company were Nathaniel Gilman, John Taylor Gilman, Bradbury Cilley, Steven Hanson, John Rogers, Nathaniel Gilman, III, and Paine Wingate (*Textile Age*, January 1942, p. 28). The men were the owners of existing Exeter River mill sites at both the Upper and Lower Falls (Griset, n.d.). In an indenture dated February 12, 1828 the company agreed "to build within nine months from the date hereof a good & sufficient new & permanent dam at or near the place where the present upper dam now is & which shall raise the water in said river to the same elevation & height as it is raised by the present dam" (Deed 253/142). The type of dam built and when it was actually constructed within the nine-month period is unknown. An 1831 survey of the Exeter River shows a dam labeled as the Exeter Upper Falls Dam at the current Great Dam site that has an elevation of 18.97 feet and head of the same height (Griset, n.d.). The new company, which was engaged in cotton textile manufacturing, began production in 1830 with two large water wheels and 5,000 spindles (Griset, n.d.).

Beginning in 1844, a series of deeds regarding flowage rights between the Exeter Manufacturing Company and owners of property adjacent to the Exeter and Little Rivers acknowledge previous damage to these lands by flooding, provide damage settlements, and place a restriction on the company to not raise the dams or cause additional damages (Griset, n.d.).

On July 13, 1861, the Exeter Mill and Water Power Company transferred its remaining rights by deed to the Exeter Manufacturing Company in accordance with an act of the legislature dated June 21, 1861. The transfer's intent was to combine all of the mill, water and flowage rights to a single company and to dissolve the other (Griset, n.d.). A history of the company in the textile trade magazine, *Textile Age*, states that the Exeter Manufacturing Company purchased sole rights to the river in 1861 "after the other industries along the river had passed out of existence" (*Textile Age*, 1942, 28).

The company expanded their operations along the river in 1867 through the purchase of the Hunnewell Privilege (the former site of the Rockingham Factory Dam, on the south side of Route 111) and after a fire, built a new structure in 1876 at their Exeter property on the east bank of the Exeter River/Squamscott River. By this time, there were four large water wheels, which were at times powered by auxiliary steam power due to the "lowering of the river in the summer months". (Griset, n.d.) Two other fires, in 1887 and 1893 caused the company to rebuild again and to expand their operations in Exeter (Exeter Historical Society, MSS 72, Folder 5).

The Exeter Manufacturing Company continued to be a major influence in the town throughout the 19th century and into the 20th century and was one of the three largest industrial firms in New Hampshire (Chase, NR nomination 1984). In 1876 steam power was added to the mill, allowing the factory to continue production year-round, even through the dry season when water levels became low (Exeter Historical Society, MSS72 file). The company also purchased the Pittsfield Mills in 1895, using the Pittsfield location to manufacture materials for bleaching, dyeing and finishing at the Exeter mill (*Textile Age* 1942, 31).

The Kent family became involved with the Exeter Manufacturing Company mill in the late 19<sup>th</sup> century, beginning a century-long family legacy as managers of the mill. Hervey Kent became manager of the mill in 1862, and helped the company recover from two disastrous mill fires in 1887 and 1893. Hervey Kent's son George Kent ran the mill until his death in 1905, after which George Kent's wife Adelaide appointed agents to manage the mill until her sons were old enough to take over the responsibility during the late 1910s. As the mill was one of the town's primary economic stalwarts, the Kent family reportedly held great sway over the bank, newspaper, and town government (Carman 1987, 22).

In 1896, the Exeter Manufacturing Company transferred a small parcel of land on the west bank of the river on Water Street to the Town of Exeter (411-217, May 25, 1896) which allowed it to reconstruct and move the location of the existing dam. The lot was referred to as a portion of the "sawmill lot" abutting the Town's "engine lot". The consideration stated in the deed was a requirement for the Town to build a stone and concrete wall along the river bank and required that the northerly 25-foot length of the wall be 4 feet thick. The Exeter Manufacturing Company retained the right to construct any new dam abutments against this 25-foot section. (Griset, n.d.) Whether the company actually commenced construction of a new dam at this time is not documented.

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In 1914 the company built the present dam, (Levergood, NH Department of Environmental Services, 2000). It is unknown if the dam that was replaced in Exeter was the one that the Exeter Manufacturing Company pledged to build within nine months of February 1828, a more recent dam from the 1890s, or if there had been earlier replacements in the 19<sup>th</sup> century. The company acquired the similar concrete gravity dam at the Pickpocket Falls, 7.6 miles upstream, in 1919 (and reconstructed it in 1920) from the Portsmouth Savings Bank, which resulted in the company's entire control over the Exeter River from the Squamscott River to the Brentwood Town line (Griset, n.d.)

The Exeter Manufacturing Company continued to be the town's leading industry in the early 20th century, long after the other large manufacturing companies in Exeter went out of business, which helped to maintain the prominence of the downtown area around Great Falls as a commercial, municipal, industrial and residential center. By shifting focus away from producing cotton textiles, the Exeter Manufacturing Company managed to avoid the same fate. The extensive bleachery operations at the mill kept it in demand between the two world wars, and the company began selling products overseas (Carman 1987, 52).

In 1934 a spin-off company called the Exeter Handkerchief Factory was established in west Exeter on Lincoln Street, which used remnants from the mill along Great Falls to produce handkerchiefs, gas mask bags (during World War II), and later tablecloths and curtains. During World War II, the Exeter Manufacturing Company shifted to the production of industrial fabric for the military and government. After the war, the company found that it could no longer price its cotton products competitively against materials produced in the southern United States, and in the 1950s switched its production from cotton to synthetic fabrics (Tardiff 1986, 25). Rather than produce the materials in-house, the company used fabric that was manufactured elsewhere, and bleached and finished the products in their facilities (Tardiff 7/9/1980). The company produced faux leather for automobile interiors, vinyl-coated screens for General Electric, and materials for Johnson & Johnson and Westinghouse.

Regulation and oversight of dams in New Hampshire became a state function in September of 1935. The original agency charged with these functions was the Public Service Commission; the New Hampshire Dam Safety Bureau within the Department of Environmental Services now carries out these roles (Griset, n.d.). Reports from 1935 and 1938 noted the Great Dam was used a power source at that time (Griset, n.d.). By 1949, the company had changed their power sources, in addition to their products and manufacturing methods; by the mid-20th century, it relied on coal and oil for its power sources, with the water wheels supplementary to the steam engine, and together they were connected to all of the looms (Carman, 1988 36). A September 26, 1949(7) report noted that the 12-inch automatic flashboards on the dam had been removed and that according to "local people" that power from the dam was not in present use (Griset, n.d.).

In 1952, the company boasted \$18 million in sales and 450 employees in the mill (Tardiff 7/9/1980). Despite the strength of the Exeter Manufacturing Company, however, by the 1960s manager Hervey Kent, Jr. was unable to appoint a successor and sold the company and mill property to Miliken Manufacturing Company in 1966. When the Exeter Manufacturing Company was sold to the Miliken Manufacturing Company in 1966, it marked a major change in the industrial development of the town. In addition to the symbolic loss of an industrial name and family that had dominated the town for more than 100 years, the new factory employed many more automated processes (Exeter Historical Society, MSS72 file). Although the Miliken Manufacturing Company specialized in similar industrial products as its predecessor, the factory required fewer workers and was no longer such a dominant employer in the town.

The Great Dam also experienced changes at this time. In an agreement dated September 9, 1968, the Miliken Company (referred to as Miliken Industrials, Inc.) granted permission to the New Hampshire Fish and Game Department to construct, maintain, and have exclusive control of a fish ladder at the Exeter Great Dam. Constructed to allow diadromous fish passage to native spawning areas upstream, the structure resulted in physical and operational modifications to the dam complex, which included removal of a section of the spillway on the west side, installation of a new retaining wall and extension of the height of the dam to that of the low-level gate and penstock housing (Griset to Patterson, NH Fish and Game, October 26, 2005 letter).

In 1981, the Miliken Manufacturing Company sold the factory to the Nike Company, and donated the water flowage rights and the Great Dam and Pickpocket Dam, 7.6 miles upstream, along the Exeter River to the Town, along with the area of the Squamscott River along Great Falls (Tardiff 1986, 61). The Miliken Company retained the use of the penstock, however, and retained the right to draw water for a specific purpose – firefighting- and only for the Main Building. Nike, the new factory occupant, manufactured simulated suede in Exeter for two years before closing the factory permanently

(Carman 1987, 55) in 1983, ending the factory's nearly 160-year production history. During the late 1980s, the former factory buildings were converted into a mixed-use residential and commercial complex, with a small number of new buildings added. The penstock still remains in use for this development, supplying cooling water to four of the complex's buildings (Weston & Sampson, 2009, 3-33).

Due to the low performance of the fish ladder, the NH Fish and Game Department has attempted multiple modifications to the fish ladder, dam and abutment between 1990 and present. The southern 33 feet of the dam has been raised twice over this period and most recently the southerly 20-foot portion of the river and abutment was filled in, a concrete retaining wall replacing the stone abutment and a fish counting structure added. In addition in 2011, directly below the dam the southerly abutment, the river was also filled in an additional 2 feet and a new concrete abutment was installed covering the old stone abutment.

The Great Dam currently serves as an impoundment dam for the Town's water supply, a role it has had since 1981 when the Town acquired the water rights from the Miliken Company. The current dam removal feasibility study that required the preparation of this individual inventory form and a corresponding project area form is the result of the numerous orders of deficiency regarding the dam's condition and, especially, its inability to withstand a 50-year flood, and the concern for the Town's water supply in which the dam plays an important, but declining, role.

#### **42. Applicable NHDHR Historic Contexts:**

18. Locally capitalized textile mills in NH, 1720-1920

90. Water supply, distribution and treatment in New Hampshire, 1850-present

130. Commerce, industry and trade in New Hampshire village and town centers, 1630-present

#### **43. Architectural Description and Comparative Evaluation:**

The Great Dam is located in the Exeter River near the Great Falls in the downtown area of Exeter. It is located between the High Street Bridge (known as the Great Bridge) and the String Bridge. The dam is just upstream of the line between the Exeter River and the tidal Squamscott River. Close to the dam, the east bank of the Exeter River contains Founders' Park, a narrow grass-covered slope with sidewalks that was the site of mill tenement housing and former mill sites in the 19th and 20th centuries. The west bank contains a dense cluster of mostly 19th and early 20th century commercial buildings that front on the south end of Water Street, their rear elevations are close to the river's edge, which is lined with granite and concrete retaining walls. The natural falls caused by the large ledge outcrops that fully extend between the Exeter River's west and east banks are a prominent feature in the dam's setting. The hydraulic control of these outcrops, which have a peak elevation of 15 feet, would create a smaller, natural impoundment upstream of the dam, should the dam be removed (Weston & Sampson, 2010, 3-25).

The Great Dam (Dam 82.01 in Department of Environmental Services files) is a run of the river dam that consists of five major elements – the 1914 modified concrete gravity retaining wall dam structure, the ca. 1968 concrete fish passage, the concrete penstock and its wood baffle wall, the concrete low-level gate, and ca. 1968 concrete weir downstream of the dam and fish passage. A fish-counting structure was added to the upper exit structure of the fish ladder within the last decade. The major spillway runs across the Exeter River in a northeast-southwest direction and is located 200 feet downstream of the High Street Bridge, known locally as the Great Bridge. The dam turns approximately 45 degrees to the northeast at the north end and frames into a concrete penstock structure and concrete sluice-gate structure containing the low-level gate. The low level gate is used to discharge water from the impoundment area to downstream of the dam. The concrete fish passage (also referred to as a fish ladder or aqueduct) is located on the west side of the river and its upstream end is located on the southwest end of the dam (Wright-Pierce, 2007, p. 3-1). The upstream impoundment created by the dam varies with the flow in the Exeter River; in 2000 the pond was estimated to be 36 acres in size (Levergood, 2000).

The dam, built on bedrock, has a maximum height of 15 feet, with an overall length of 140 feet. The upstream spillway face of the dam has a parabolic surface and the downstream face is a flat vertical surface. The concrete ogee spillway is

78 feet long<sup>2</sup>, with a 4-foot freeboard (permanent 1-foot concrete weir) at the spillway lip. The low-level outlet, or gate, on the east bank of the river is 4.5-foot wide by 5-foot high. The penstock, also on the east bank, is 14-foot wide by 7-foot high and is now inoperable (Levergood, 2000). The underground section of the penstock extends approximately 200 yards from the east bank of the river to the former Exeter Manufacturing Company complex.

There is an 18-inch wide by 15-inch deep concrete cap above the dam spillway. It is believed that the cap was installed in the late 1960s to replace flash pins and flash boards. It appears that when the cap was installed, the portion of the dam directly adjacent to the penstock gate structure was covered with the same thickness of concrete (Wright-Pierce/Woodlot, 2007, 3-1).

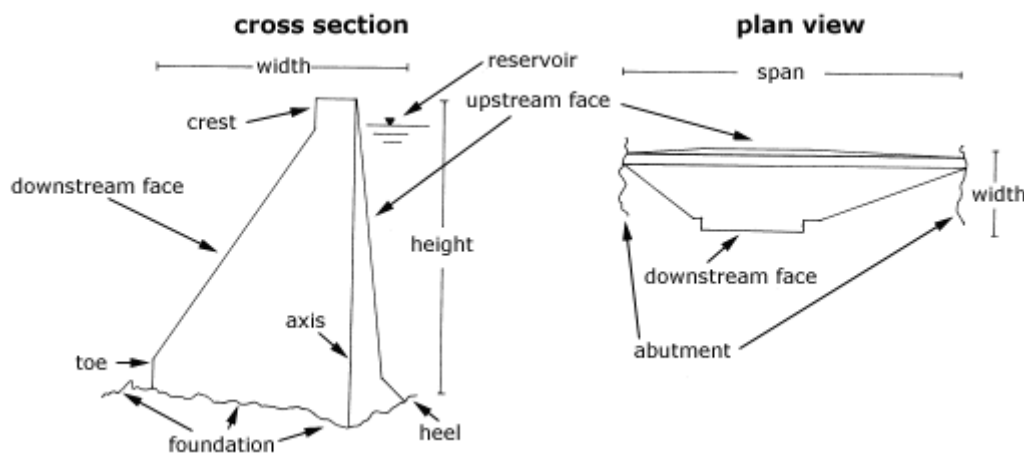
The dam gates consist of a spill gate and two control gates leading to the 14-foot wide by 7-foot high penstock. The wooden control gates are operated on a wheel and gear mechanism located 5 feet above the spillway crest. The gates are protected by an iron trash rack; a single tank is located directly behind the gates to the penstock. Redevelopment of the mill complex in the late 1980s destroyed the tail race constructed for the original turbines.

A small section of the dam extends to the south of the fish ladder on the west side of the river. The dam here is capped by a 3-foot wide by 5 feet deep concrete wall. The downstream spillway side is in poor condition, with severely exposed concrete aggregate (Wright-Pierce/Woodlot, 2007, 3-2).

The dam was extensively modified since its original construction; some of the alterations have impacted the dam's discharge capacity. These alterations include construction of the fish passage facility, which decreased the spillway length; construction of a 1-foot high concrete cap on top of the spillway crest, and de-activation of the 7-foot by 14-foot penstock (Wright-Pierce/Woodlot, 2007, 2-2). Reportedly, the dam was also modified in 1938, but no information was found that specified the alterations (Goodspeed 1981, 4).

### Concrete Gravity Dams

Gravity dams are the oldest type of dam, although dams of this type constructed from concrete date to the late 19th century. The dam is characterized as a straight dam of masonry or concrete which resist the applied water load by means of its weight. A cross section and plan view of a typical gravity dam is presented below:



(from [http://simscience.org/cracks/advanced/grav\\_anat1.html](http://simscience.org/cracks/advanced/grav_anat1.html))

2 A report from 1981 (Goodspeed and Mellin) notes the spillway length is 111 feet, rather than 78 feet.



The first triangular gravity dams were built in Mexico in 1765 and 1800, followed by French engineer J. Augustin Tortene de Sazilly's studies that showed that a gravity dam in the shape of a triangle with a vertical upstream face was the most advantageous. The first use of concrete in a gravity dam was seen in New York State at the Boyds Corner gravity dam, built in 1872. Improvements in the strength of the concrete by controlling the water content were carried on in the late 19th century and early 20th century. Undoubtedly the most well-known example is the Hoover Dam, a curved concrete gravity dam that was constructed between 1931 and 1936 ([http://simscience.org/cracks/advanced/grav\\_hist1.html](http://simscience.org/cracks/advanced/grav_hist1.html)).

**44. National or State Register Criteria Statement of Significance:**

The Exeter Great River Dam is considered a contributing resource to the Exeter Waterfront Commercial Historic District, which was originally listed in the National Register of Historic Places in 1980, with a boundary increase that added the former Exeter Manufacturing Company property in 1986.

The district was recognized for its association with important events associated with Exeter's early industrial and commercial growth, with an emphasis on the 18<sup>th</sup> century through the early 20<sup>th</sup> century period and its intact and sophisticated array of mostly 18<sup>th</sup> and 19<sup>th</sup> century residential, institutional, commercial, and industrial architecture. The original district nomination recognized the district's significance in Architecture, Commerce, Military, Transportation, Industry, and Invention. Industry and architecture were noted as the areas of significance in the second nomination, which recognized the importance of the Exeter Manufacturing Company buildings to the district's significance and architectural character. Neither nomination noted the specific National Register criteria which the district met, but based on the areas of significance, it can be assumed that both Criterion A (association with significant events and Criterion C (represents a significant and distinguishable entity whose components may lack individual distinction). In neither nomination was the dam noted as a contributing resource, it was only mentioned as the dam at Great Falls over which the Exeter River falls; its association with the Exeter Manufacturing Company, which built the dam in 1914, was not mentioned. In fact, in the original 1979-1980 nomination, the industrial buildings of the company were not included; but they were the subject of the boundary expansion, however, in 1986.

The dam and its outlet structures, which date to 1914 with some modifications, are recommended as contributing resources to the existing Exeter Waterfront Commercial Historic District, because the structures meet Criterion A for their role in the Exeter Manufacturing Company's continuing prominence in the town and in the state in the early to mid-20<sup>th</sup> century. The 44-year old fish passage structure and concrete weir are well outside of the district's official period of significance, which is 1700-1949 and are not recommended as contributing resources to the district. The dam and its outlet structures are not recommended individually eligible for the National Register as the structures are a typical example of an early 20<sup>th</sup> century concrete gravity dam and are not distinguished in its engineering design, materials, or operation. As properties less than 50 years of age, the fish passage and concrete weir need to display exceptional significance to be considered individually eligible for the National Register. The fish passage and concrete weir are not recommended individually eligible for the National Register, as their design is very typical for the period and do not represent any innovations in engineering design, materials, or operation.

**45. Period of Significance:**

The period of significance for the Exeter Waterfront Commercial District is 1700-1949. The 1914 dam and outlet structures fall within this period of significance, but the fish ladder and concrete weir do not.

**46. Statement of Integrity:**

Although the dam and its outlet structures and the fish passage and concrete weir have received some alterations, their integrity is relatively intact as they all still convey their original purpose and general appearance.

**47. Boundary Discussion:**

The Great Dam is within the existing National Register-listed Exeter Waterfront Commercial Historic District and the local district, the Downtown Historic District. The boundaries of both districts are shown on the project area form figure. No further boundary discussion is needed.

**48. Bibliography and/or References:**

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Carman, Rebecca W. *Reflections: Exeter Mill* (Boston: Arbor Development Company, Inc., 1988).

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Exeter Historical Society

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Levergood, Grace, P.E., Dam Safety Engineer, Department of Environmental Services, Inspection Report, Dam #082.01, 2000

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Tardiff, Olive

*The Exeter-Squamscott: River of Many Uses* (Rye, NH: CGC, 1986).

"A factory and its people, Part I," *Exeter News-Letter*, June 4, 1980.

"A factory and its people, Part II," *Exeter News-Letter*, July 9, 1980.

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Weston and Sampson, *Town of Exeter, NH, Water Supply Alternatives Study – Final Report*, January 2010

Wright-Pierce, and Woodlot Alternatives Inc., *Exeter River Study, Phase I Final Report*, March 2007

[http://simscience.org/cracks/advanced/grav\\_hist1.html](http://simscience.org/cracks/advanced/grav_hist1.html), accessed February 17, 2012

**Maps**

1802 Phineas Merrill, "A Plan of the Compact Part of the Town of Exeter." Exeter Historical Society archives.

1845 Joseph Dow, "Plan of Exeter Village, New Hampshire." Exeter Historical Society Archives.

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- 1874 "Map of Exeter, New Hampshire." (Philadelphia: Sanford & Everts). Exeter Historical Society archives.
- 1876 Rockingham County Land Plan 0060. <http://nhdeeds.com/rockingham/RoHome.html>, accessed February 2012.
- 1884 "Exeter, New Hampshire," birds-eye view (Brockton, MA: Norris & Wellge). Exeter Historical Society archives.
- 1886 "Exeter Water Works," Exeter Historical Society archives.
- 1892 "Exeter," Atlas of the State of New Hampshire (Boston: D.H. Hurd & Co.). Exeter Historical Society archives.
- 1896 "Exeter, New Hampshire," birds-eye view (Boston: A.W. Moore Co., Lith.). Exeter Historical Society archives.
- Sanborn Fire and Insurance Company, "Exeter, NH." 1885, 1892, 1898, 1904, 1913, 1924, 1943 (updated from 1924). <http://sanborn.umi.com>, accessed January 2012.

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**Surveyor's Evaluation:**

NR listed: individual \_\_\_\_\_  
within district   X  

Integrity: yes   X    
no \_\_\_\_\_

NR eligible: individual \_\_\_\_\_  
within district   X    
not eligible \_\_\_\_\_  
more info needed \_\_\_\_\_

NR Criteria: A   X    
B \_\_\_\_\_  
C \_\_\_\_\_  
D \_\_\_\_\_  
E \_\_\_\_\_

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Date photos taken: 2011



Photo # 2 Description: Ca. 1968 Fish Passage structure at west bank of Exeter River  
Roll and Frame # OR Digital file name: EXE0043\_02 Direction: NW



Photo # 3 Description: Fish passage (left) and penstock baffle wall (right) and low-level gate (center)  
Roll and Frame # OR Digital file name: EXE0043\_03 Direction: NW

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Date photos taken: 2011



Photo # 4 Description: Low-level gate (center) and penstock baffle wall (right)  
Roll and Frame # OR Digital file name: EXE0043\_04 Direction: NW



Photo # 5 Description: Low-level gate (center) and penstock baffle wall  
Roll and Frame # OR Digital file name: EXE0043\_05 Direction: NW

**INDIVIDUAL INVENTORY FORM**

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Date photos taken: 2011



Photo # 6 Description: View of Founders' Park and library on east bank of Exeter River, near penstock  
Roll and Frame # OR Digital file name: EXE0043\_06 Direction: N

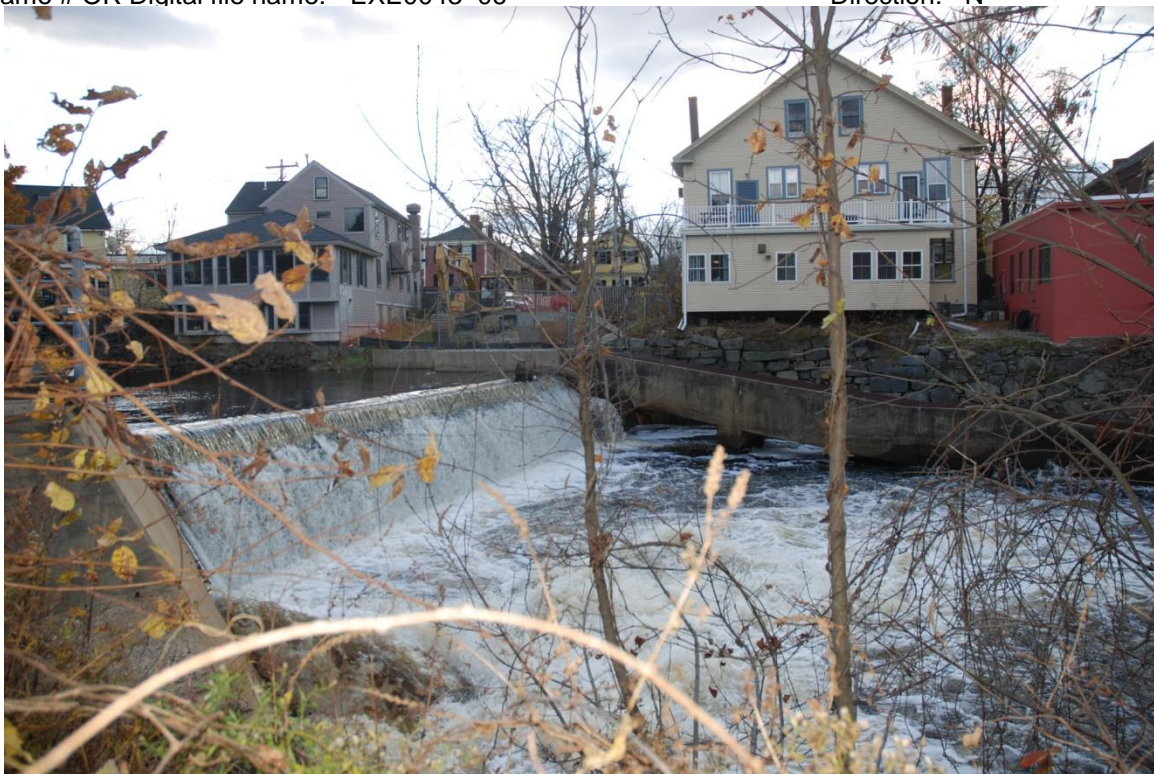


Photo # 7 Description: View of dam and fish passage from east bank of Exeter River  
Roll and Frame # OR Digital file name: EXE0043\_07 Direction: W

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY # EXE0043**

Date photos taken: 2011



Photo # 8 Description: View of concrete weir at upstream end of spillway

Roll and Frame # OR Digital file name: EXE0043\_08

Direction: NW



**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY # EXE0043**

PHOTO LOG:

1. EXE0043\_01 View of dam from East Bank of Exeter River, facing W
2. EXE0043\_02 View of ca. 1968 fish passage structure at west bank of Exeter River, facing NW
3. EXE0043\_03 View of fish passage (left) and penstock baffle wall (right) and low-level gate (center), facing NW
4. EXE0043\_04 View of low-level gate (center) and penstock baffle wall (right), facing NW
5. EXE0043\_05 View of low-level gate (center and penstock baffle wall, facing NW
6. EXE0043\_06 View of Founders' Park and library on east bank of Exeter River, near penstock, facing N
7. EXE0043\_07 View of dam and fish passage from east bank of Exeter River, facing W
8. EXE0043\_08 View of concrete weir at upstream end of spillway, facing NW

I, the undersigned, confirm that the photos in this inventory form have not been digitally manipulated and that they conform to the standards set forth in the NHDHR Photo Policy. These photos were printed at the following commercial printer OR were printed using the following printer, ink, and paper: HP Photosmart 8050 Printer, HP Vivera 98 Ink, Hewlett Packard Premium Plus Photo Paper. The negatives or digital files are housed at/with:

   VHB   .

SIGNED:

**2009 and 2011 Drawdown Photos**

The following images were taken in 2009 and 2011 by Brian Goetz of Weston & Sampson during drawdown episodes. These images are included, as they more clearly show the structures. The photographs' resolutions do not conform to the NHDHR digital photo size requirements, so were not included in the current photos section.



View of dam from High Street Bridge, facing N. Dam is shown in center, with penstock baffle (wood) wall and low-level gate on right hand side of photograph.

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY # EXE0043**



View of dam, fish passage (top center), portion of penstock baffle wall (far right), and low-level gate (center). Facing W.



View of dam (on left), low-level gate, and penstock baffle wall, facing NE from Founders' Park

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY # EXE0043**



View of ledge outcrops in area just upstream of dam (dam is on far right), facing W



Detailed view of penstock baffle wall, facing SE



View of ledge outcrops just upstream of dam, facing S towards High Street bridge



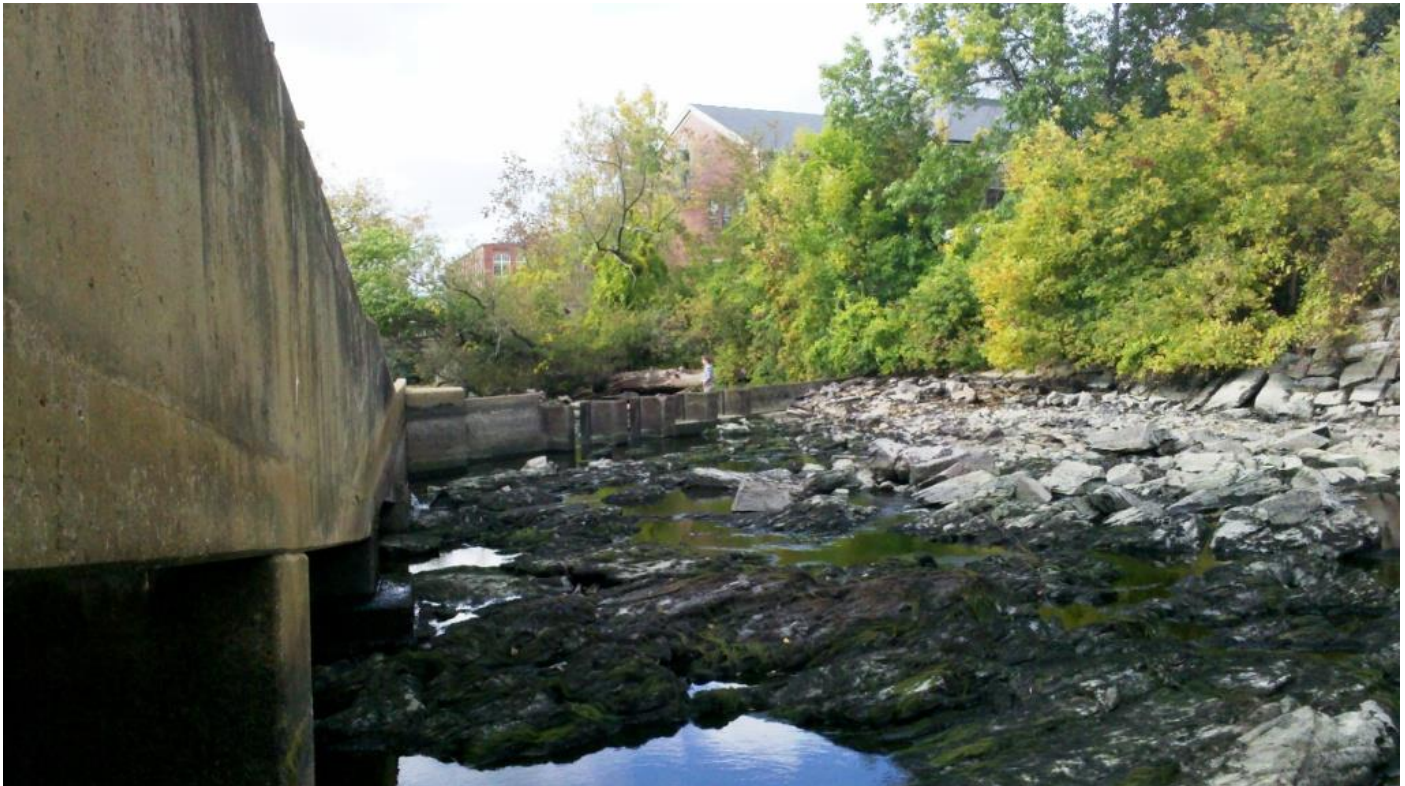
View of fish passage on left and concrete weir in center, facing N



View of dam parabolic side (downstream) and fish passage, facing W



View of low-level gate (left), dam (center), and fish passage (right), facing S



View downstream of fish passage (on left), concrete weir (center) and outcrops on east bank of Exeter River, facing NE



View of ledge outcrops under east of String Bridge (downstream of the dam), facing W

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**NHDHR INVENTORY # EXE0043**



Photograph of Great Falls area facing north, ca. 1857. String Bridge and Kimball's Island on right; Great Falls and Great Dam site just out of frame on right. Carol Walker Aten refers to this as the earliest known photograph of Exeter, an ambrotype copy of a daguerreotype (Aten 1896, 9). Exeter Historical Society, MSS10 Box3\_1996.26.2 Dennis Waters collection.

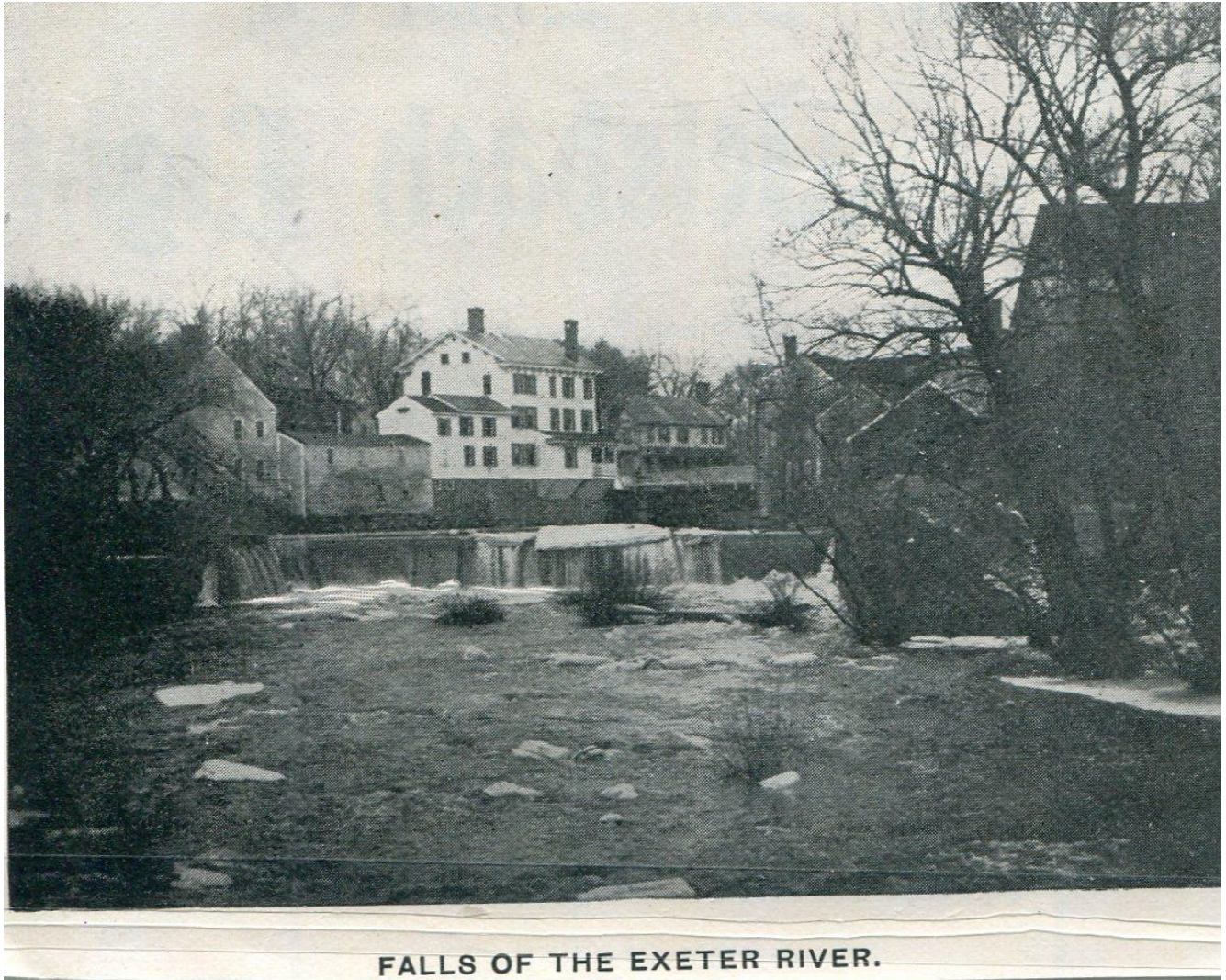




Photograph of Great Dam site facing southeast, 1896. Great Bridge in background. Exeter Historical Society, photographer Lizzie G. Rollins, presented by Dana W. Baker June 1928.

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY # EXE0043**



Photograph of Great Dam facing southeast, likely pre-1915 (Ioka Theater on Water Street not visible, constructed 1915). Great Bridge in background. Exeter Historical Society, MSS12 file.

**INDIVIDUAL INVENTORY FORM**

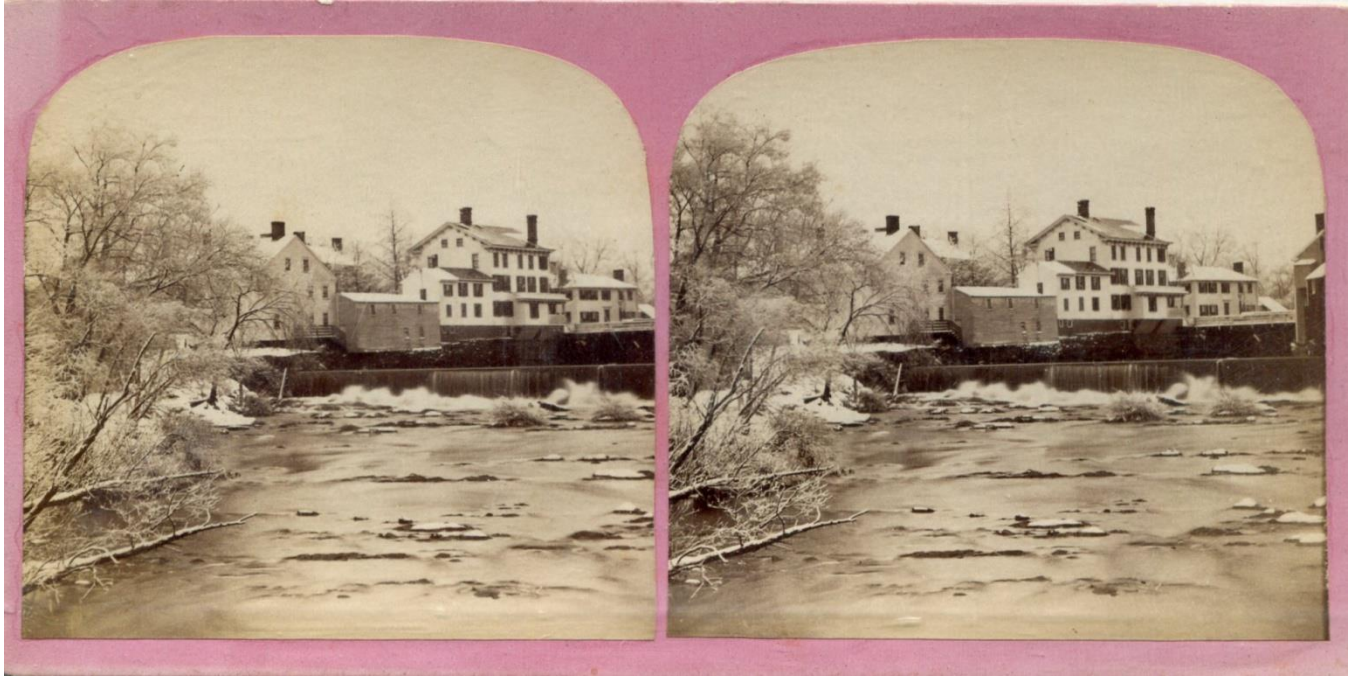
**NHDHR INVENTORY # EXE0043**



Photograph of Great Dam facing southeast, post-1915 (Ioka Theater visible on extreme right, constructed 1915). Great Bridge in background. Exeter Historical Society, MSS12\_1990.35.2.

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY # EXE0043**



Photograph of Great Dam facing east, photographer William N. Hobbs, no date. Exeter Historical Society, Water Street\_MSS12\_81.11.8a.

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY # EXE0043**



Photograph of Great Dam facing east, post-1915 (Ioka Theater just visible on extreme right, constructed 1915). Great Bridge in background. Exeter Historical Society, MSS12\_1995.109.5.

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY # EXE0043**



Photograph of String Bridge and Kimball's Island facing southeast, Great Dam visible in background through bridge, post-1915 (Ioka Theater just visible on extreme right, constructed 1915). Exeter Historical Society, MSS12\_1998.89.24.

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY # EXE0043**



Photograph of Great Dam facing northwest, taken from Great Bridge, J.S. Mitchell photographer, no date. String Bridge and Kimball's Island in background. Exeter Historical Society, MSS12.

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY # EXE0043**



Photograph of Great Dam facing southeast, 1938. Great Bridge in background, Ioka Theater on right. Exeter Historical Society, MSS12\_85.48.4.

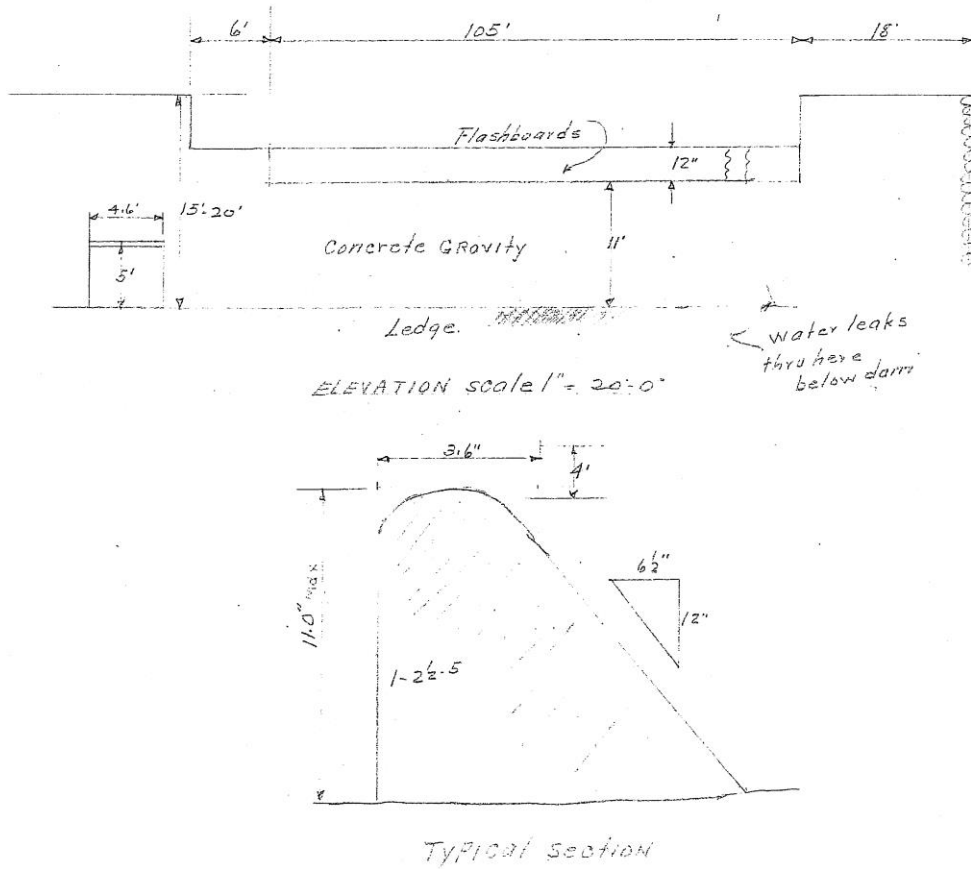


INDIVIDUAL INVENTORY FORM

NHDHR INVENTORY # EXE0043

ORV E2 8252  
PROJECT MICROFILMED FILE 82.01  
NFW HAMPSHIRE WATER RESOURCES BOARD CONCORD, N. H. SUBJECT EXETER RIVER MAR 12 1985 E. TER. ACC. OCEAN EXETER RIVER EXETER MFG. CO.  
COMPUTER G.S.V. CHECKER R.L.K. CONT. FROM ACC. CONT. ON ACC. SUMMARY ON ACC. DATE 10/11/89

82.01



Typical section and elevation of Great Dam, Dam Inspection Sheet, 1939 (from NHDES Dam File, #082.01.

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY # EXE0043**



Aerial photograph of Great Falls area and downtown Exeter, 1950s, Ben Swiezynski photographer. View is facing west. Great Dam is in the center of the photograph, between String Bridge and Great Bridge. High Street extends out of frame on the bottom of the photograph. Exeter Manufacturing Company mill is on the right along the river. Exeter Historical Society, Water Street\_MSS12\_1996.77.275.

**INDIVIDUAL INVENTORY FORM**

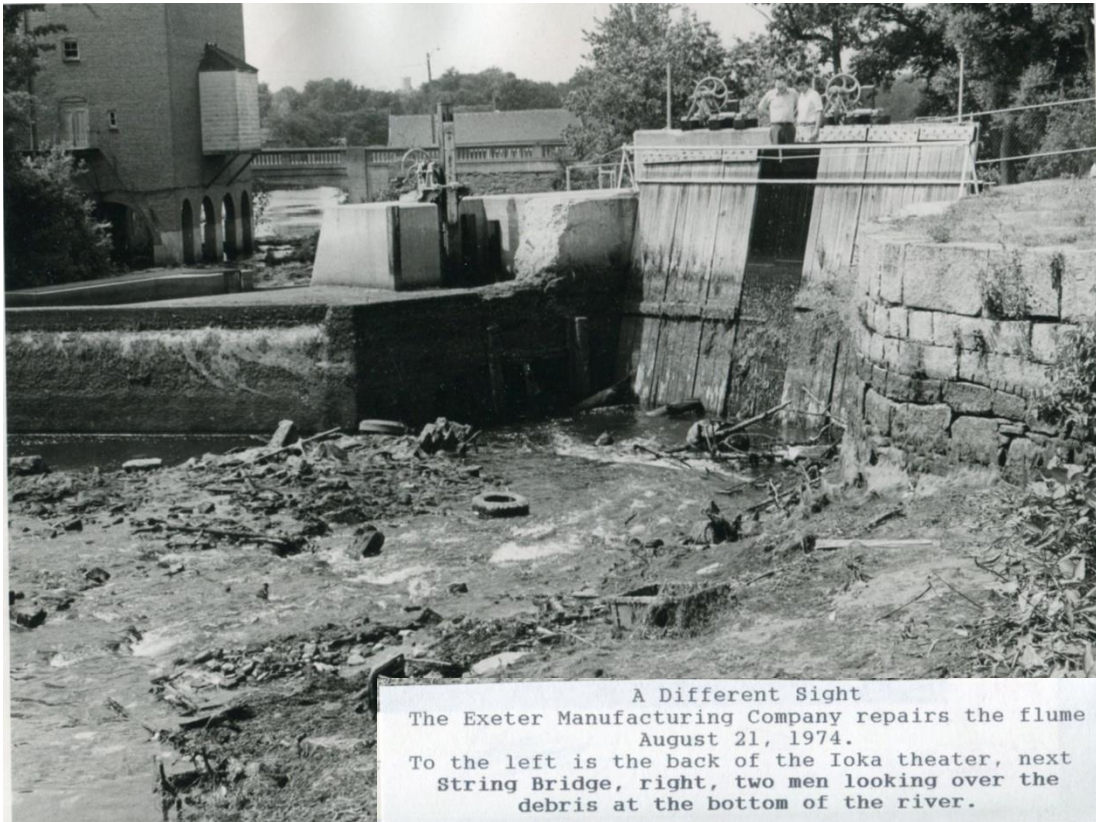
**NHDHR INVENTORY # EXE0043**



Photograph of Great Dam facing east, 1972, Pleasant Street in background. Exeter Historical Society, MSS12\_1998.91.99.

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY # EXE0043**



Photograph of Great Dam facing northwest, 1974, with Exeter Historical Society caption. Exeter Historical Society, MSS12\_1996.77.177.

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY # EXE0043**



Photograph of Great Dam facing east, 1984, Pleasant Street in background. Exeter Historical Society, MSS12\_86.63.2.

**INDIVIDUAL INVENTORY FORM**

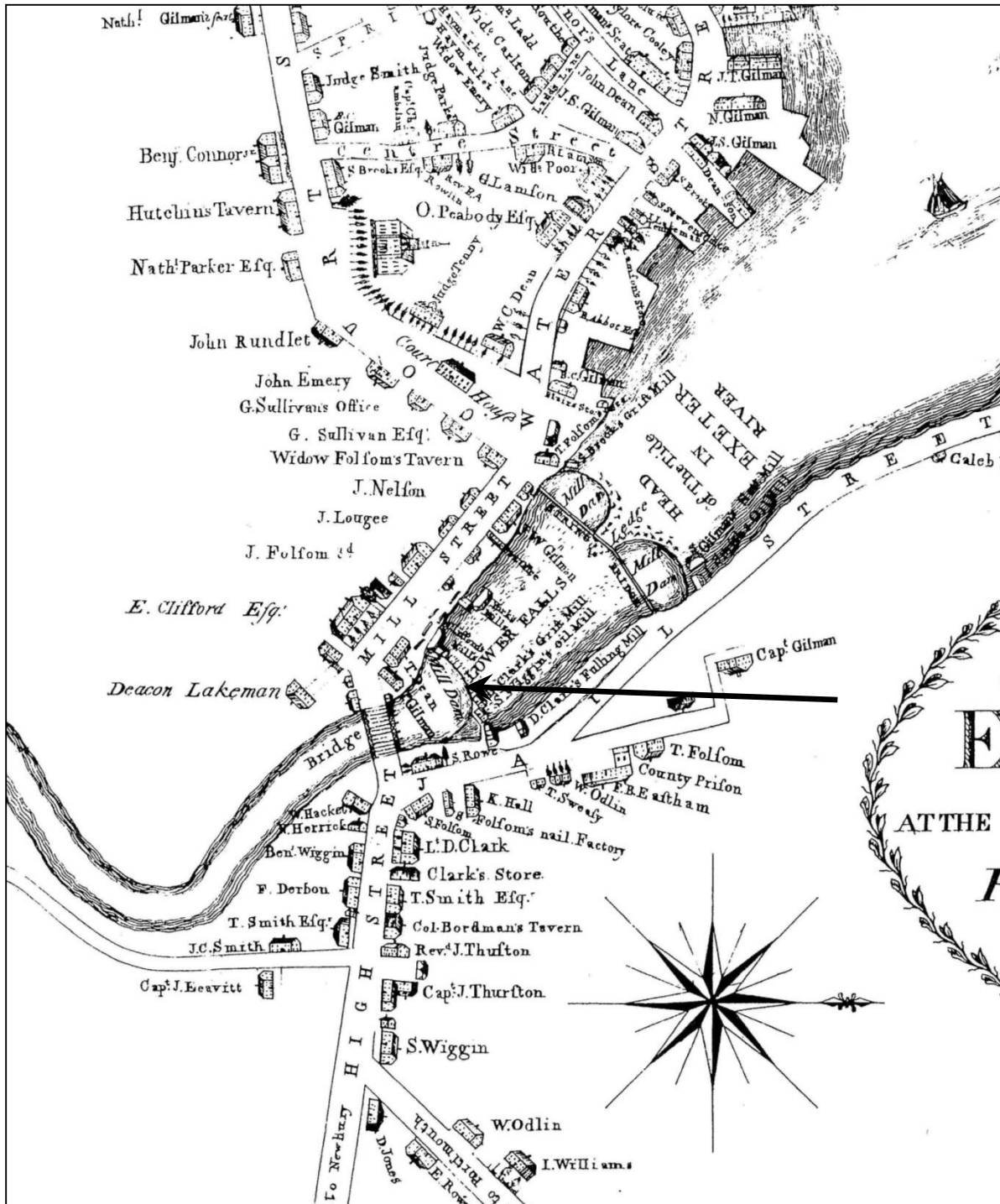
**NHDHR INVENTORY # EXE0043**



Photograph of 1893 Exeter Manufacturing Company Mill fire, 1893. Exeter Historical Society, MSS72.

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Phineas Merrill, "A Plan of the Compact Part of the Town of Exeter," 1802. Exeter Historical Society archives. Location of Great Dam indicated by arrow.

INDIVIDUAL INVENTORY FORM

NHDHR INVENTORY # EXE0043



Joseph Dow, "Plan of Exeter Village, New Hampshire," 1845. Exeter Historical Society Archives.  
Location of Great Dam indicated by arrow.

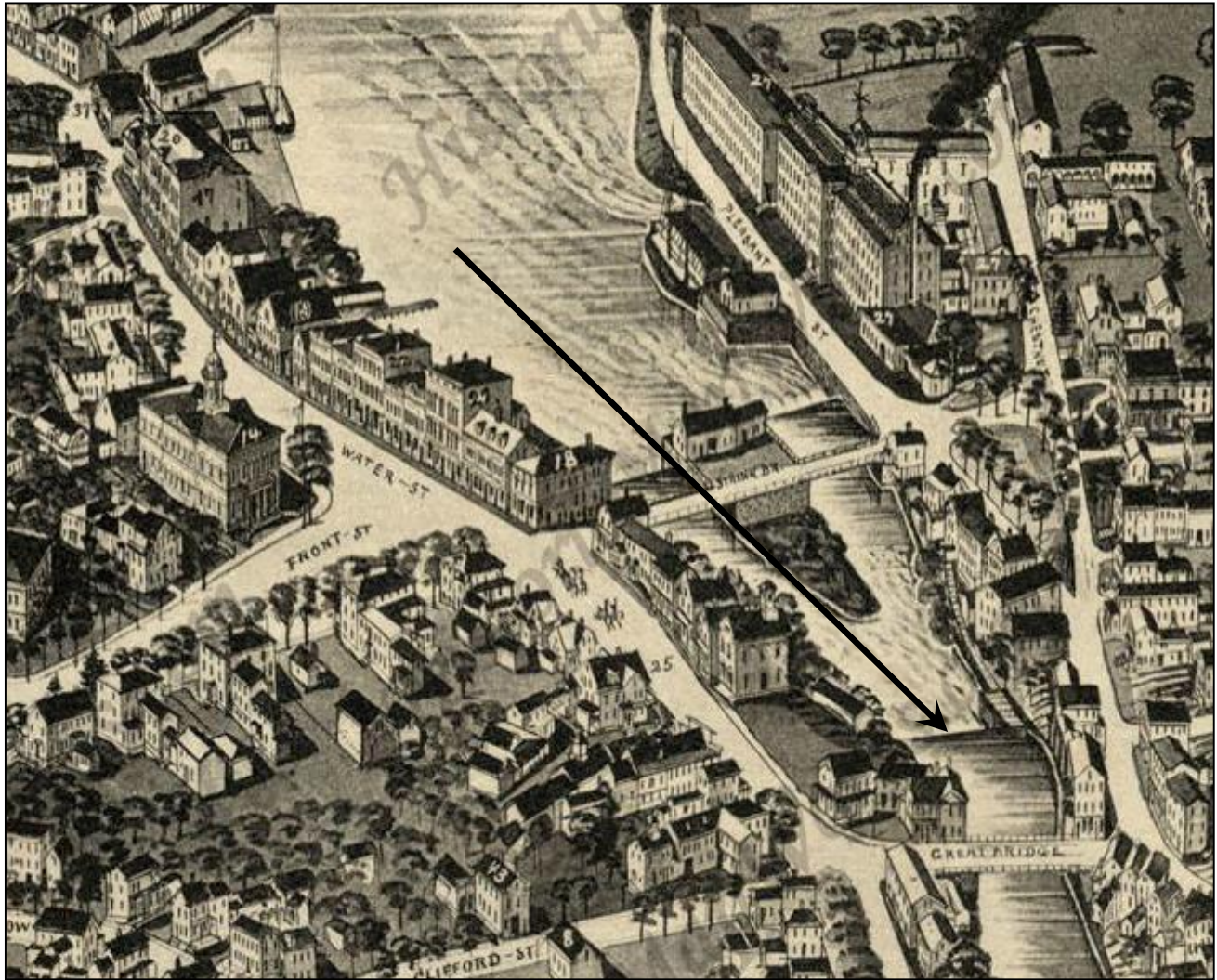






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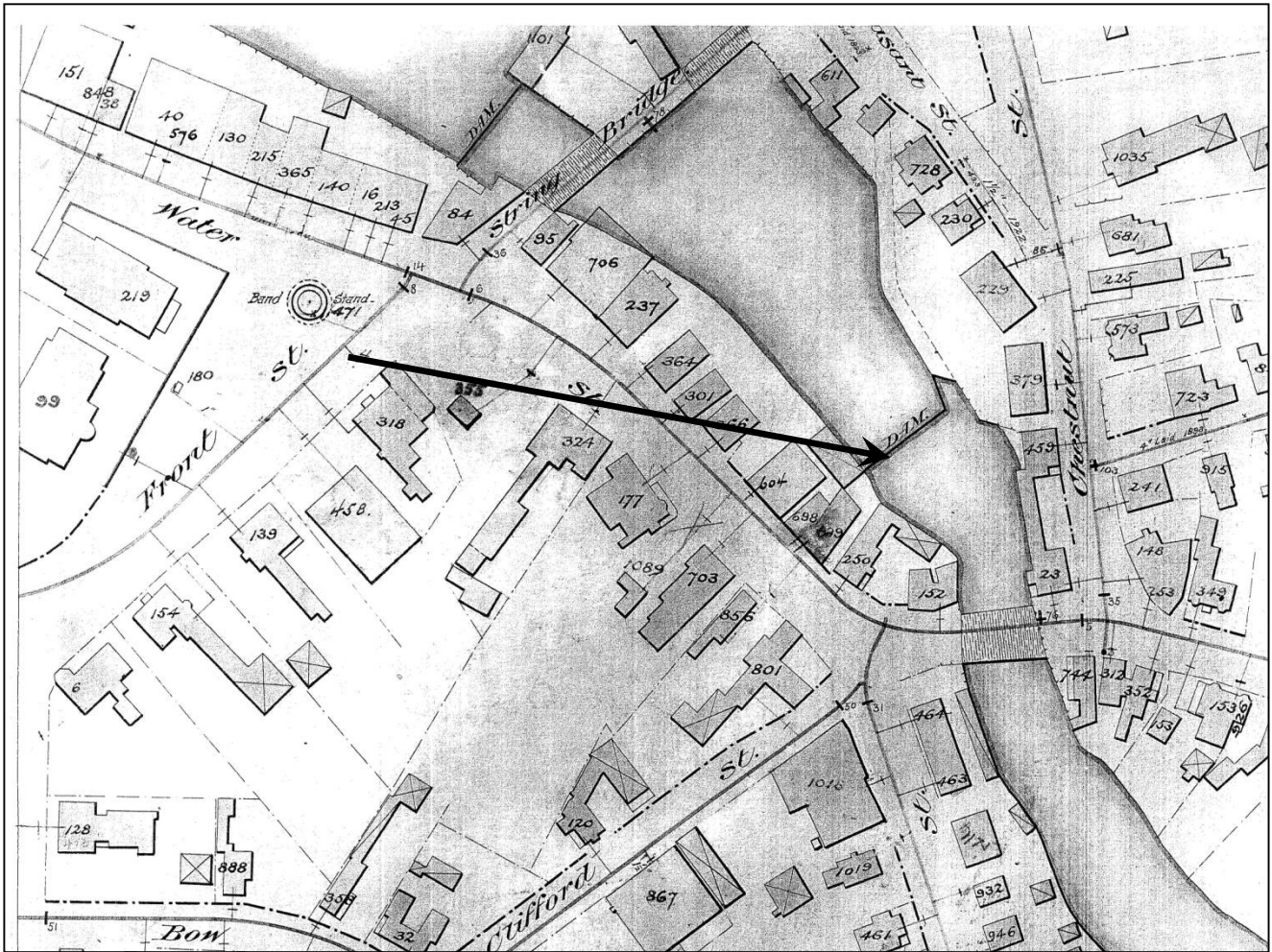
**NHDHR INVENTORY # EXE0043**



Norris & Wellge, "Exeter, New Hampshire," birds-eye view, 1884. Exeter Historical Society archives. Location of Great Dam indicated by arrow.

**INDIVIDUAL INVENTORY FORM**

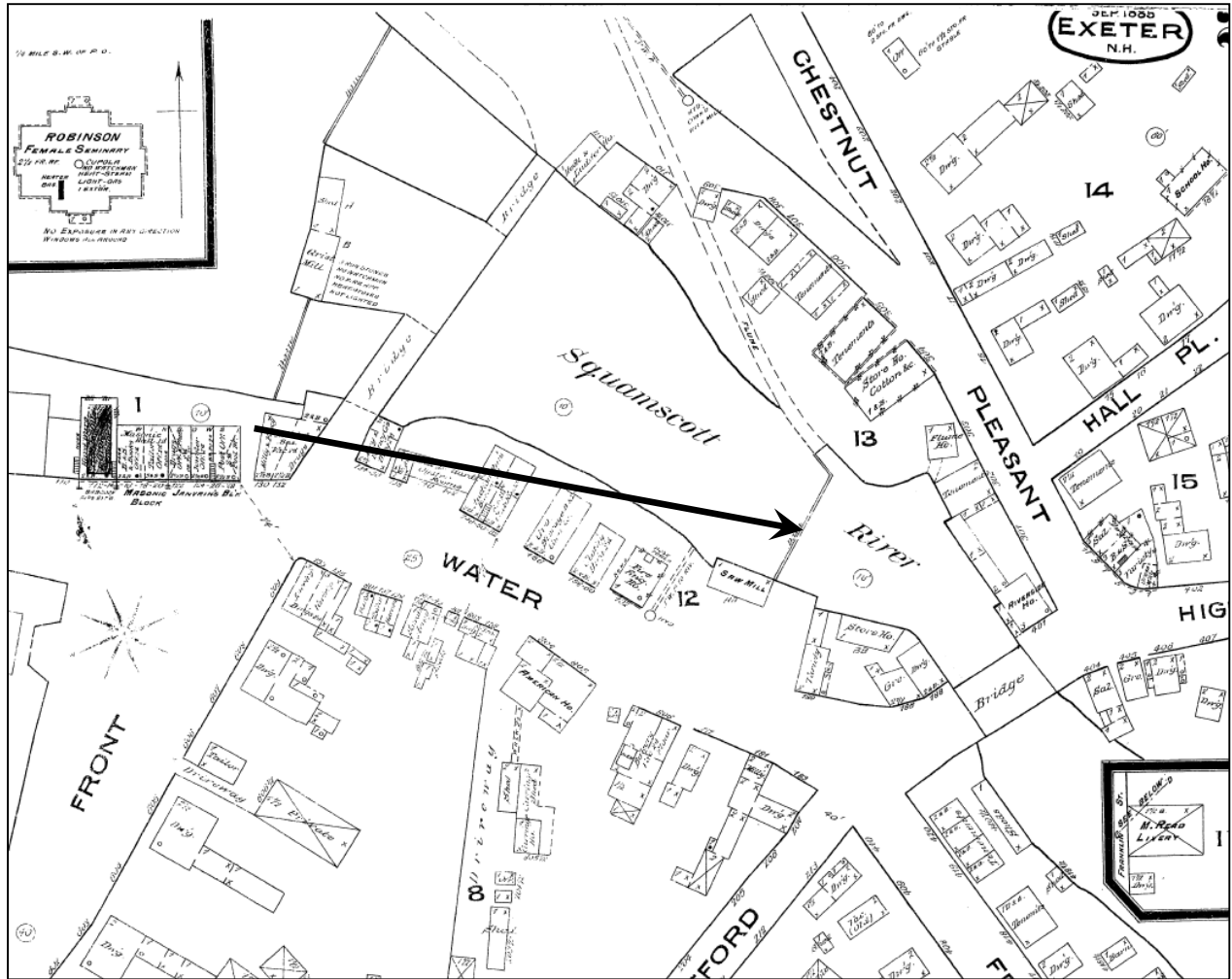
**NHDHR INVENTORY # EXE0043**



“Exeter Water Works,” 1886. Exeter Historical Society archives. Location of Great Dam indicated by arrow.

INDIVIDUAL INVENTORY FORM

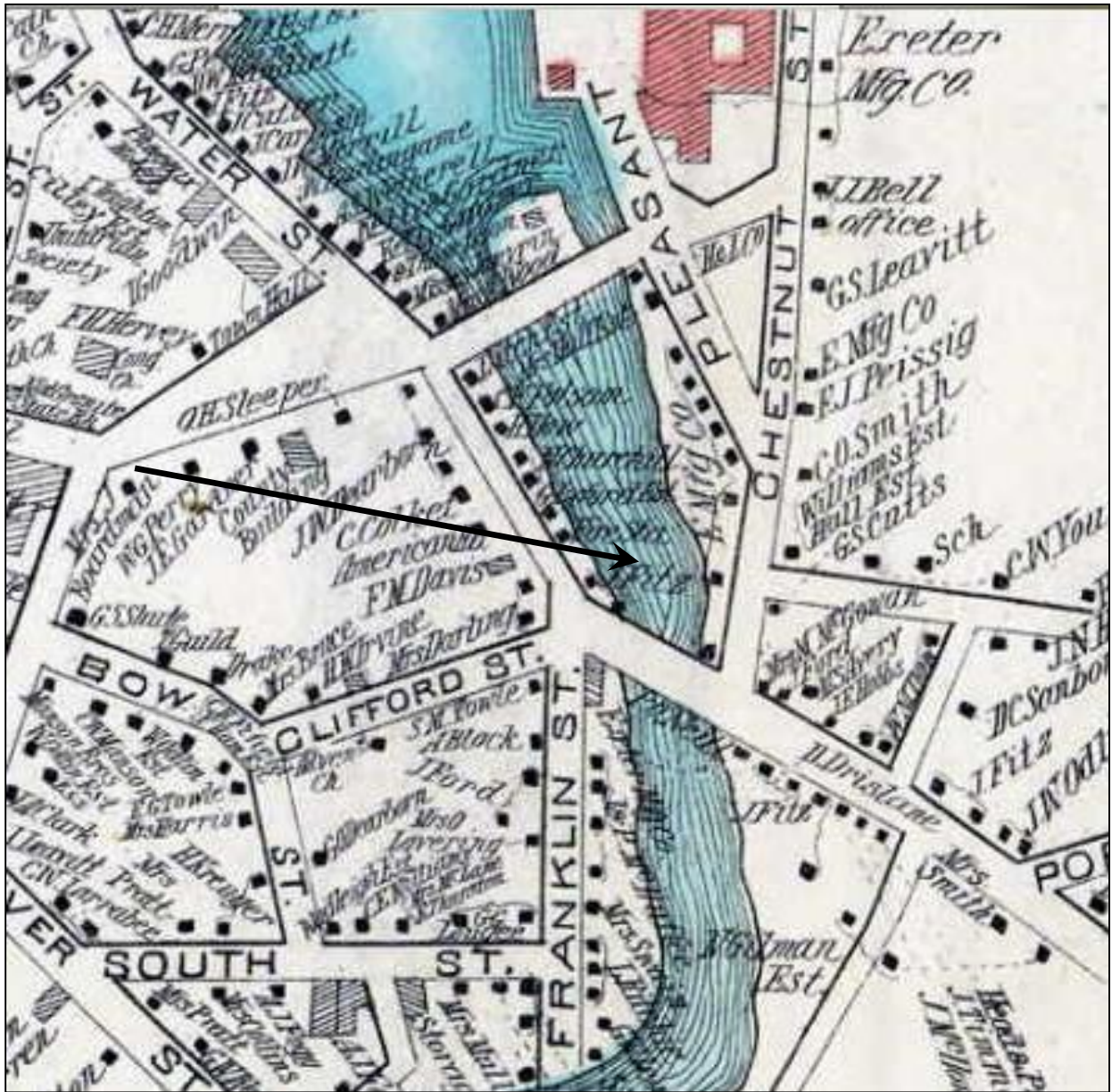
NHDHR INVENTORY # EXE0043



Sanborn Fire and Insurance Company, Sheet 2, "Exeter, NH," 1885. <http://sanborn.umi.com>, accessed January 2012. Location of Great Dam indicated by arrow.

INDIVIDUAL INVENTORY FORM

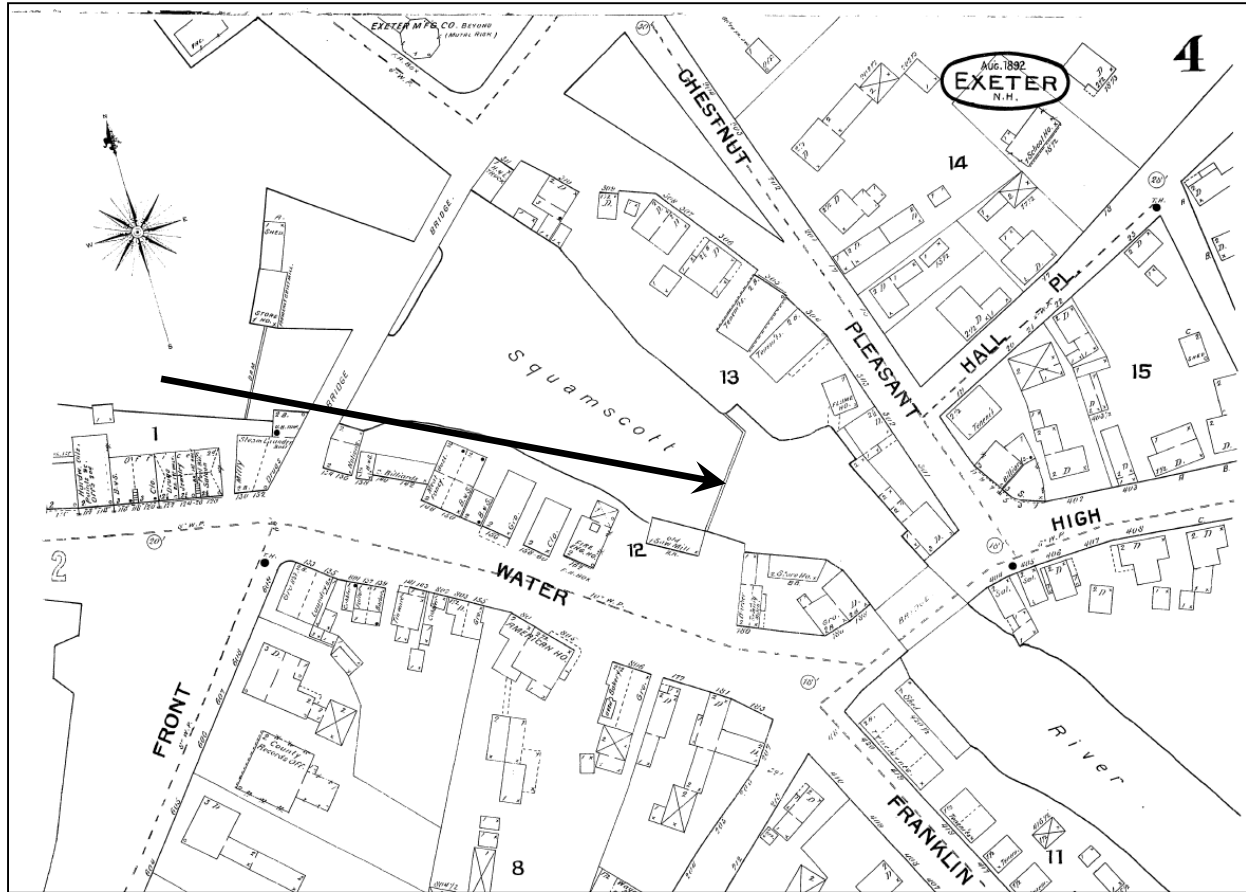
NHDHR INVENTORY # EXE0043



D.H. Hurd & Co., "Exeter," Atlas of the State of New Hampshire, 1892. Exeter Historical Society archives.  
Great Dam not shown; area of dam indicated by arrow.

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY # EXE0043**



Sanborn Fire and Insurance Company, Sheet 4, "Exeter, NH," 1892. <http://sanborn.umi.com>, accessed January 2012. Location of Great Dam indicated by arrow.

**INDIVIDUAL INVENTORY FORM**

**NHDHR INVENTORY # EXE0043**

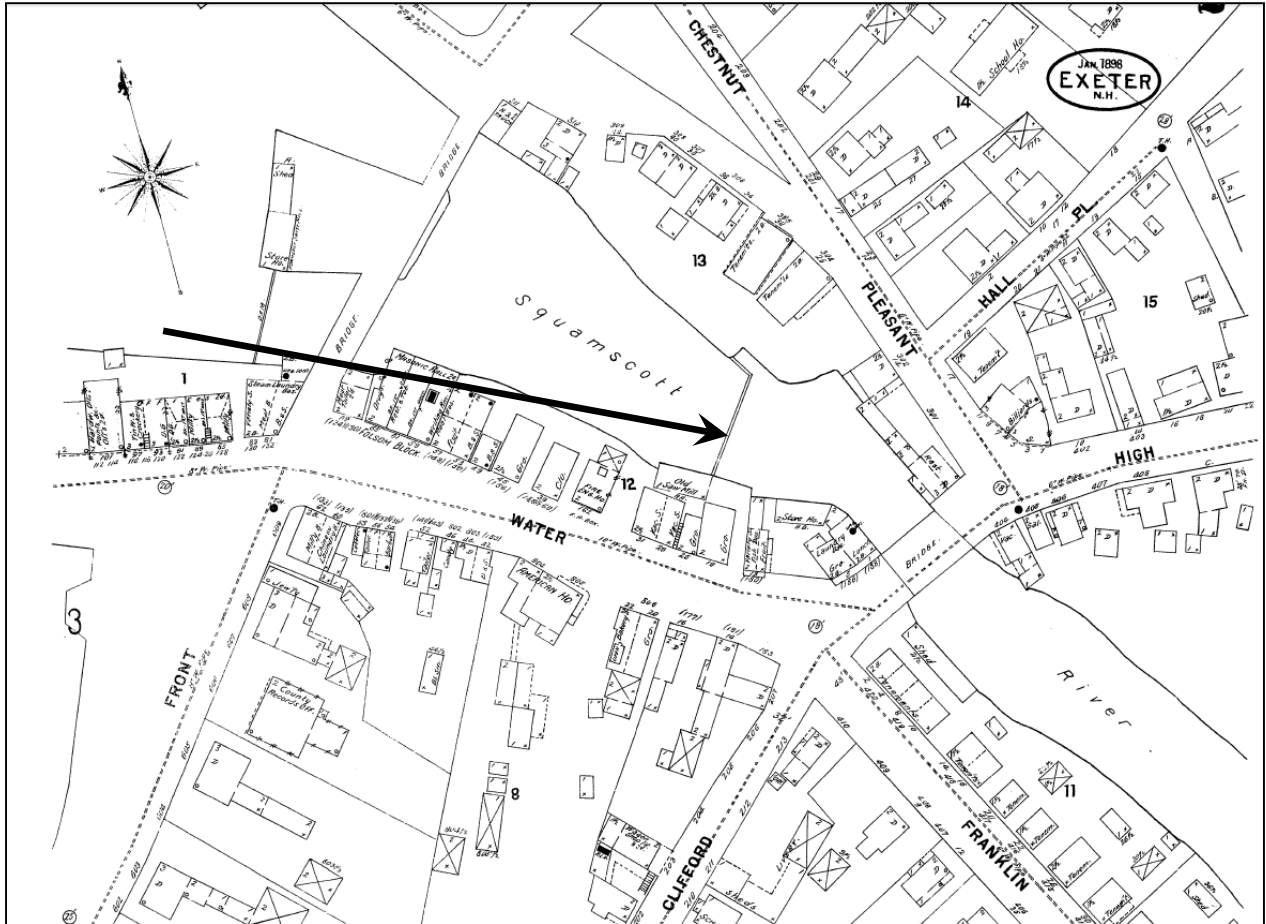


A.W. Moore Co., Lith., "Exeter, New Hampshire," birds-eye view, 1896. Exeter Historical Society archives.  
Location of Great Dam indicated by arrow.



**INDIVIDUAL INVENTORY FORM**

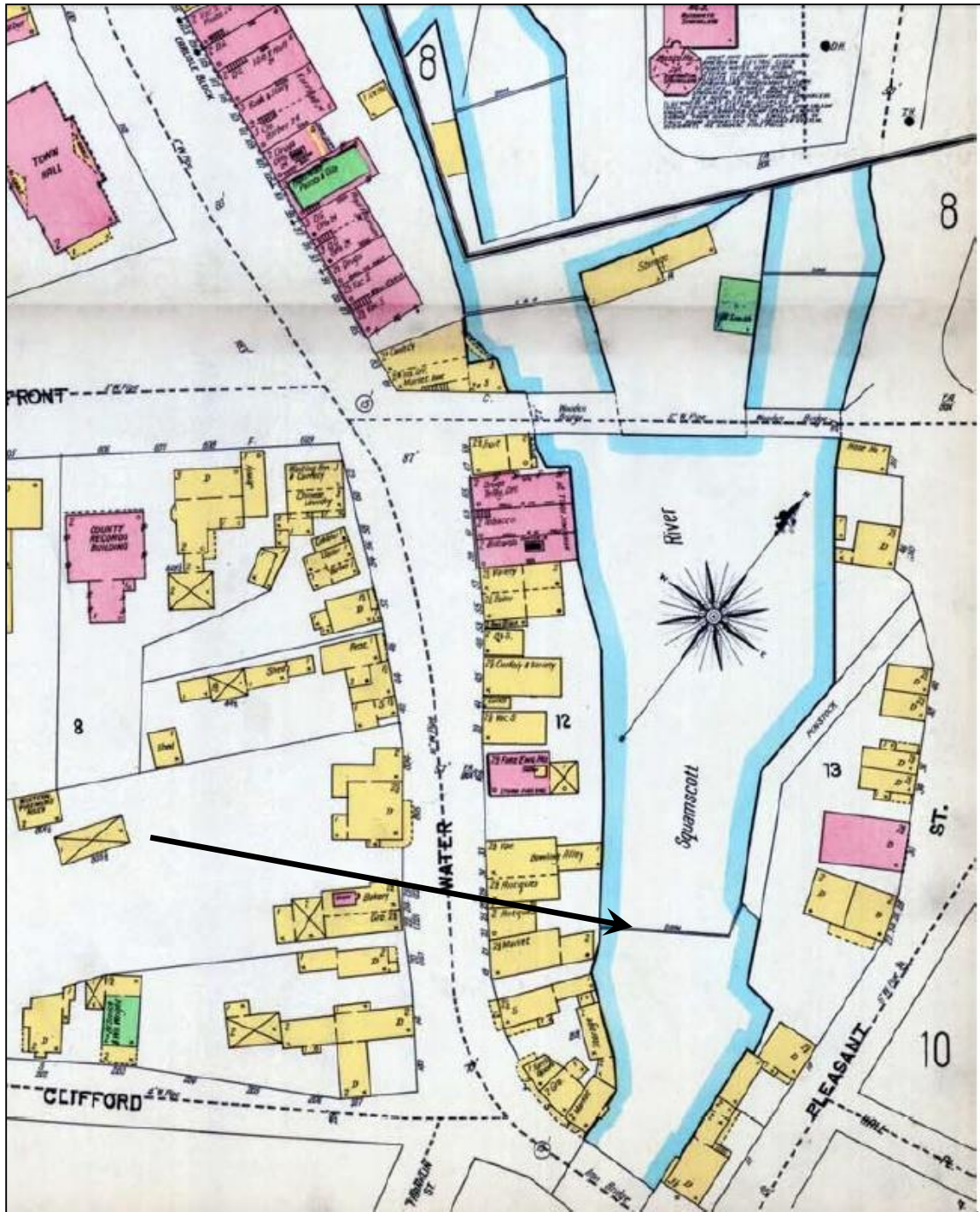
**NHDHR INVENTORY # EXE0043**



Sanborn Fire and Insurance Company, Sheet 2, "Exeter, NH," 1898. <http://sanborn.umi.com>, accessed January 2012. Location of Great Dam indicated by arrow.

**INDIVIDUAL INVENTORY FORM**

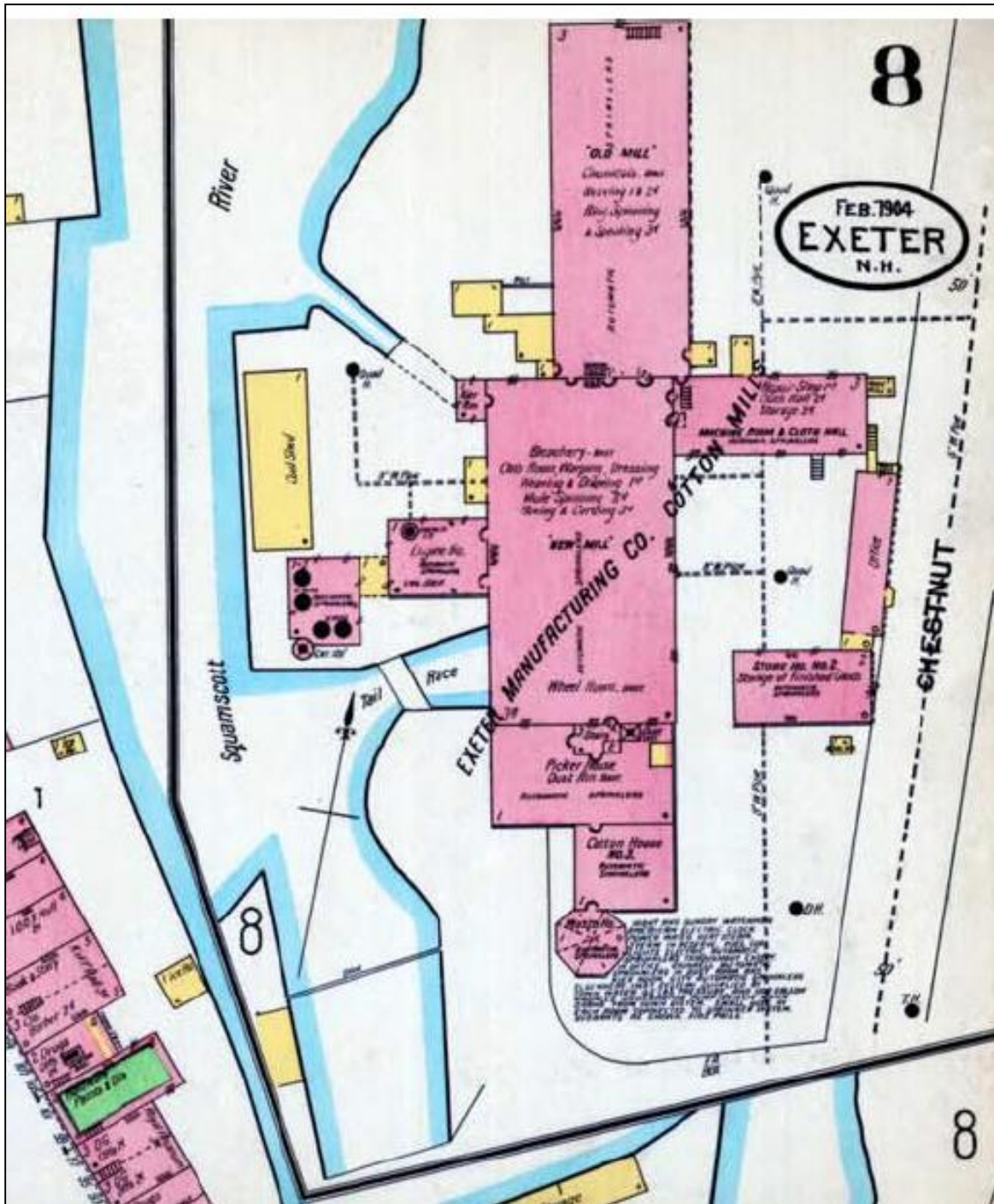
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Sanborn Fire and Insurance Company, Sheet 8, "Exeter, NH," 1904. <http://sanborn.umi.com>, accessed January 2012. Location of Great Dam indicated by arrow.

INDIVIDUAL INVENTORY FORM

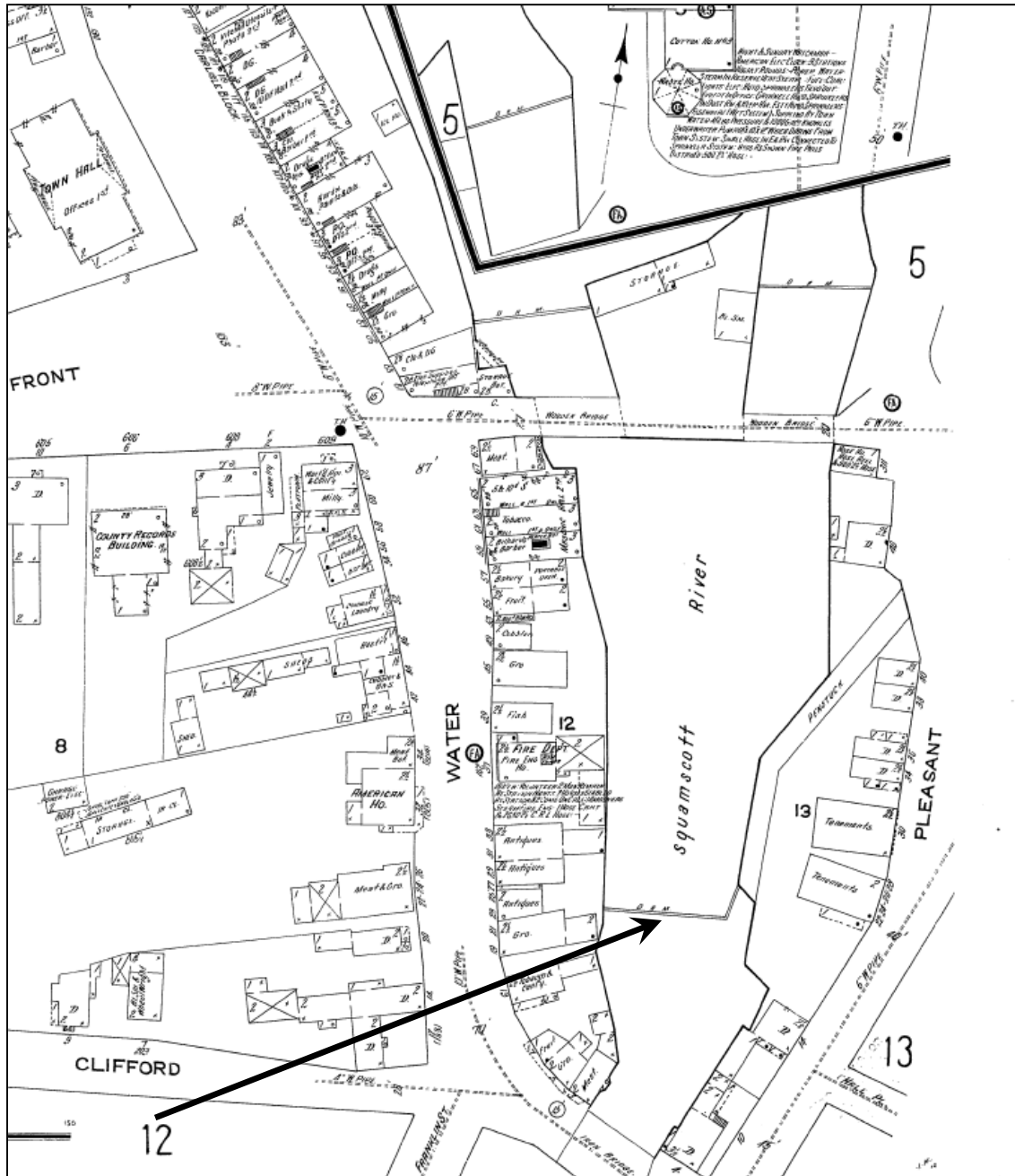
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Sanborn Fire and Insurance Company, Sheet 8, "Exeter, NH," 1904. <http://sanborn.umi.com>, accessed January 2012.

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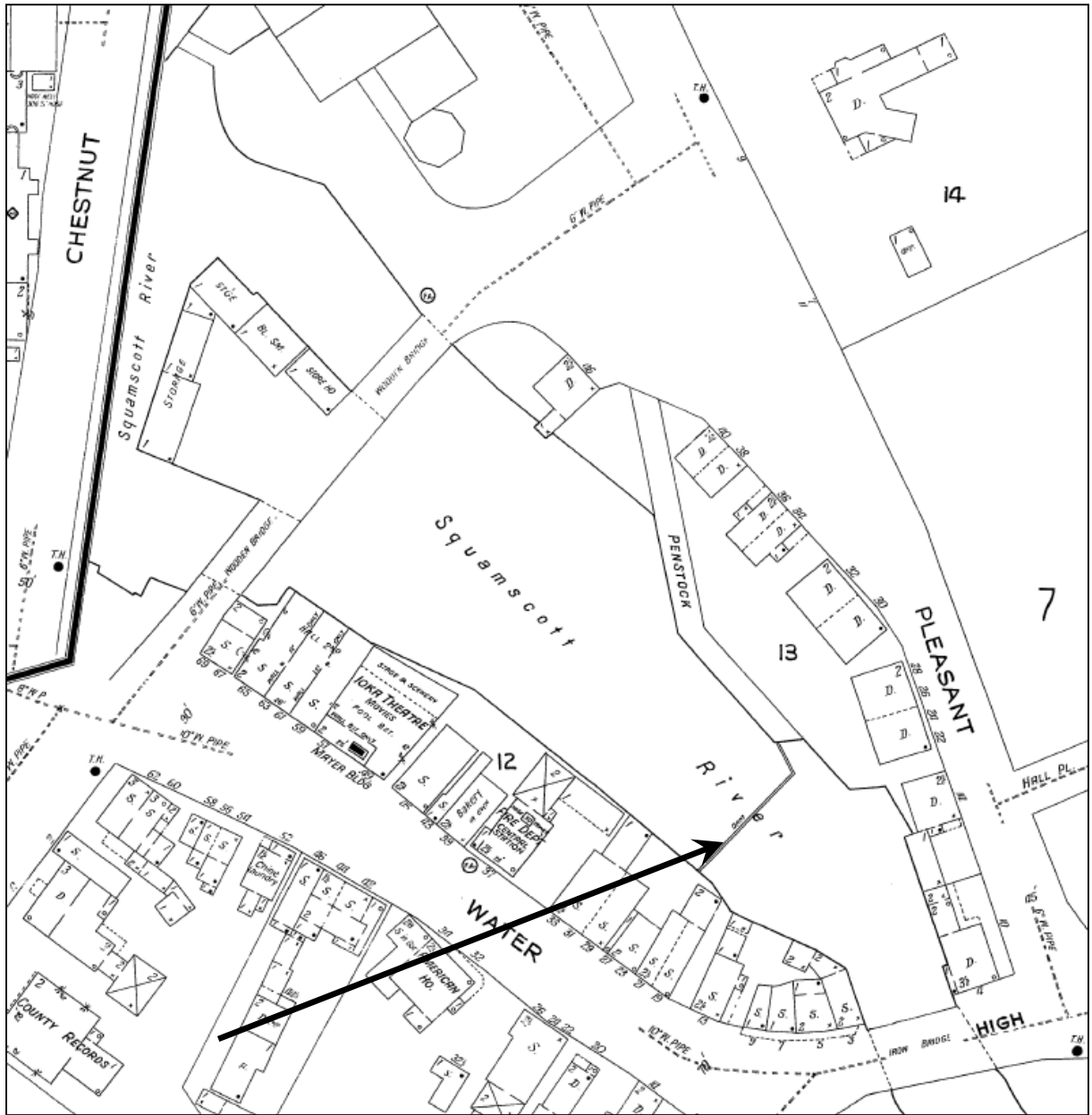


Sanborn Fire and Insurance Company, Sheet 5, "Exeter, NH," 1913. <http://sanborn.umi.com>, accessed January 2012. Location of Great Dam indicated by arrow.



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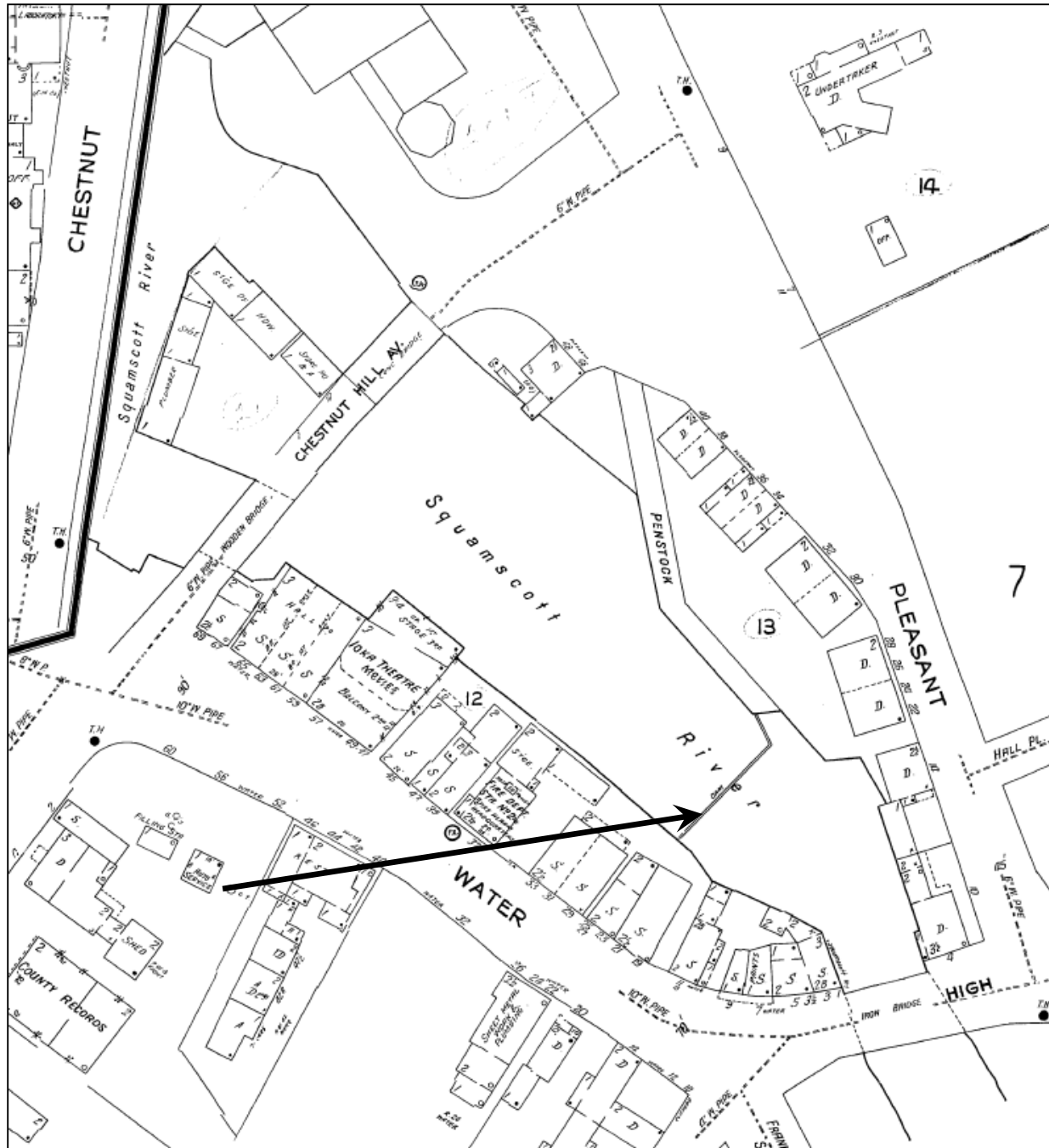


Sanborn Fire and Insurance Company, Sheet 3, "Exeter, NH," 1924. <http://sanborn.umi.com>, accessed January 2012. Location of Great Dam indicated by arrow.



INDIVIDUAL INVENTORY FORM

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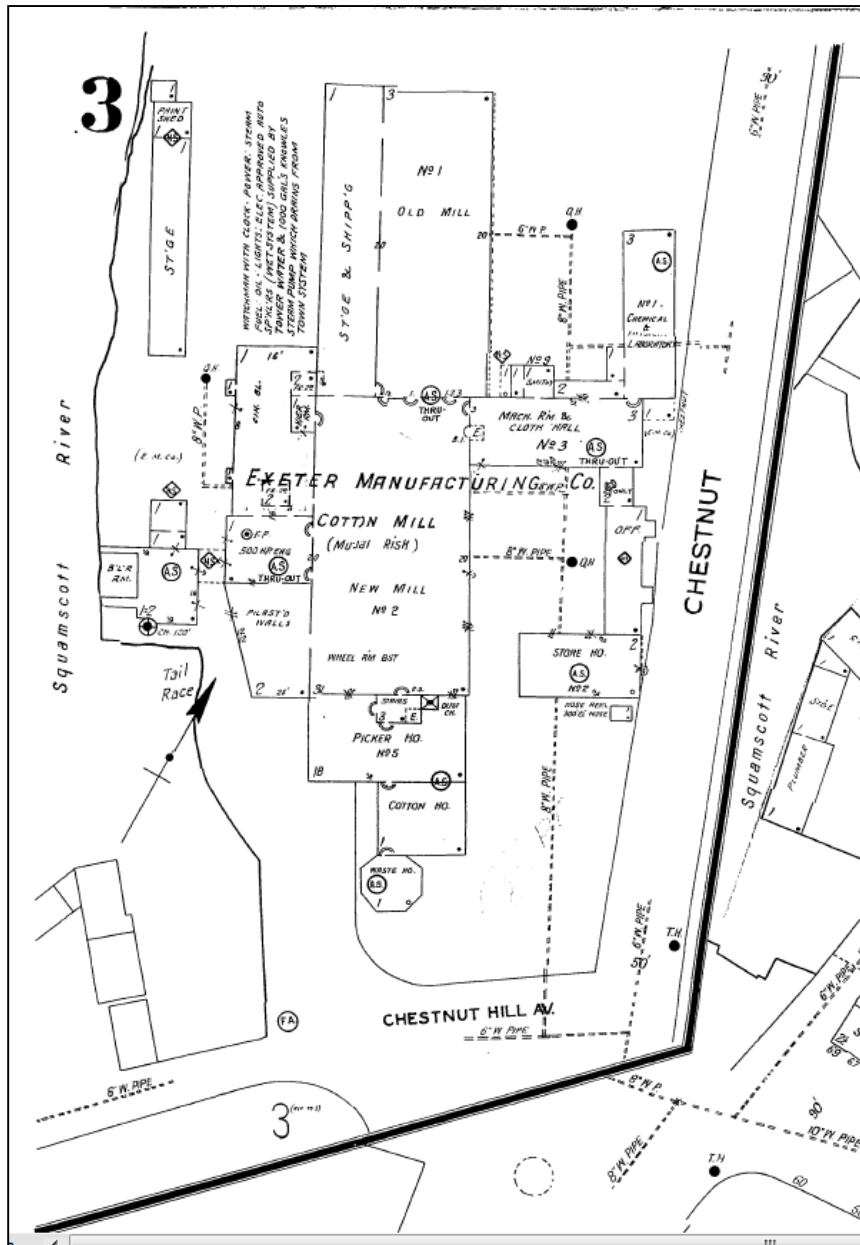


Sanborn Fire and Insurance Company, Sheet 3, "Exeter, NH," 1943 (updated from 1924).  
<http://sanborn.umi.com>, accessed January 2012. Location of Great Dam indicated by arrow.



INDIVIDUAL INVENTORY FORM

NHDHR INVENTORY # EXE0043



Sanborn Fire and Insurance Company, Sheet 3, "Exeter, NH," 1943 (updated from 1924). <http://sanborn.umi.com>, accessed January 2012.