United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form.* If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. **Place additional certification comments, entries, and narrative items on continuation sheets if needed (NPS Form 10-900a).**

1. Name of Property

historic name Wiswall Falls Mill Site

other names/site number 27-ST-38

2. Location

street & number East side of Lamprey River south of Wiswall Road ☐ not for publication

city or town Durham ☐ vicinity

state New Hampshire code NH county Strafford code 017 zip code 03857

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby certify that this ___ nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property ___ meets ___ does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

___ national ___ statewide __local

Signature of certifying official/Title Date

State or Federal agency/bureau or Tribal Government

In my opinion, the property ___ meets ___ does not meet the National Register criteria.

Signature of commenting official Date

Title State or Federal agency/bureau or Tribal Government

4. National Park Service Certification

I hereby certify that this property is:

___ entered in the National Register ___ determined eligible for the National Register

___ determined not eligible for the National Register ___ removed from the National Register

___ other (explain:) _____

Signature of the Keeper Date of Action

5. Classification

Ownership of Property
(Check as many boxes as apply.)

- [X] private
- [X] public - Local
- [ ] public - State
- [ ] public - Federal

Category of Property
(Check only **one** box.)

- [ ] building(s)
- [ ] district
- [X] site
- [ ] structure
- [ ] object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
		buildings
		district
		site
		structure
		object
		Total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing)

Number of contributing resources previously listed in the National Register

1 – Wiswall Falls Mill Site

6. Function or Use

Historic Functions
(Enter categories from instructions.)

INDUSTRY / PROCESSING / EXTRACTION
manufacturing facility
waterworks
industrial storage

Current Functions
(Enter categories from instructions.)

RECREATION AND CULTURE
outdoor recreation
INDUSTRY / PROCESSING / EXTRACTION
waterworks

7. Description

Architectural Classification
(Enter categories from instructions.)

N/A

Materials
(Enter categories from instructions.)

foundation: N/A
walls: N/A
roof: N/A
other: N/A

Narrative Description

(Describe the historic and current physical appearance of the property. Explain contributing and noncontributing resources if necessary. Begin with **a summary paragraph** that briefly describes the general characteristics of the property, such as its location, setting, size, and significant features.)

Summary Paragraph

The Wiswall Falls Mill Site (27-ST-38) is a 2.85-acre industrial archaeological site located on the east shore of the Lamprey River in the Town of Durham, Strafford County, New Hampshire. The site comprises the ruins of thirteen (13) buildings and structures including a power canal, sawmill, paper mill, boiler room, crib dam, well, and ancillary worksheds and store rooms. Industrial activities at the site were initiated in 1835 when Moses and Issachar Wiggin constructed a wooden crib dam and sawmill at the natural granite ledge at Wiswall Falls. The complex grew to become the largest industrial operation in Durham. Most of the mill complex was destroyed by fire in 1883, but the surviving dam and sawmill continued to be used on a small scale until 1896 (Stackpole et al. 1994 [1913]). Archaeological investigations have demonstrated that the majority of the site is intact and has remained virtually undisturbed since 1896 despite the construction of a small hydroelectric facility in the location of the mill ruins in 1900. The property was acquired by the Town of Durham in 1965 for incorporation into the public water supply system, and eventually was developed as the John Hatch Memorial Park. A National Register nomination for the historic mill complex was completed in 1988 (Stott 1988), and the site was included as a contributing resource to the state-listed Wiswall Falls Historic District (DUR-W) in 2010 (Preservation Company 2008). The purpose of this update to the original Wiswall Falls Mill Site National Register (NR) documentation is to expand the boundaries of the site to include the remains of an earlier crib dam submerged within the Lamprey River; to provided corrected data concerning the number, size, location, and functions of several structural ruins; to describe the current appearance and condition of the site; and to revise the 1988 nomination to meet current NR standards for content and format (National Park Service [NPS] 1997, 2000).

Narrative Description

SETTING

The Wiswall Falls Mill Site is located in the Town of Durham, approximately 2.75 miles southwest of Durham Center and .57 miles east of the Durham/Lee town line. The site is located within the hamlet of Wiswall Falls (a/k/a Wiggin Falls) within the larger Packer's Falls District, and is bounded to the west by the Lamprey River that descends 1,000 feet (ft) over its 60-mile course from its source in the Saddleback Mountains to the 11,000-acre tidal estuary of Great Bay. The district is within a 23.5-mile reach of the river from Bunker Pond Dam in the town of Epping to the confluence with the Piscassic River in the vicinity of the Durham-Newmarket town line that has been designated as a National Wild and Scenic River. The most distinctive natural feature at the site is a granite ledge fall immediately south of the extant dam structure and fish ladder that extends across the river to its east bank. These types of ledge falls are characteristic of many portions of the Lamprey River and formed the basis for the water-powered industries that thrived in the region from the mid-seventeenth through nineteenth centuries. The site lies at an average elevation of 60 ft above mean sea level, and currently exhibits a park-like landscape with a mixed canopy of oak, maple and pine, marked hiking trails, and public picnic areas. The site is accessed via an unpaved road running south from Wiswall Road, and an unpaved public parking area is provided at the northeast corner of the site. A kiosk recently was erected in the parking area summarizing the history of the Lamprey River and the role of the Wiswall-Wiggin Mill in Durham. The former power canal, originating north of Wiswall Dam and re-entering the river approximately 160 ft south of the extant dam structure, has created a peninsular-type landform that currently is used as a picnic area; in the interests of public safety, the Town of Durham has erected a post-and-rail fence reinforced with chain link along both sides of the power canal.

PERIOD OF USE AND OCCUPATION

Brothers Issachar and Moses H. Wiggin inherited the Wiswall Falls mill privilege from their father, Captain William Wiggin, at the time of his death in 1831. There were apparently no buildings or road in the vicinity of the privilege at that time. In 1835, the brothers constructed a large wooden crib dam on the granite ledge at Wiswall Falls and a sawmill on the east bank of the river. Shortly thereafter, a grist and flour mill was constructed just downstream of the sawmill. The Wiggin Mill fast became the largest industrial operation in Durham (Preservation Company 2008; Scott 1988). In 1853, Thomas H. Wiswall (1817–1906) and Isaac Flagg, Jr., leased the dam, mills, and water rights from Moses Wiggin, who

had taken sole possession after Issachar's death in 1844. A stipulation of the lease was that Moses Wiggin would build a two-story paper mill with two water wheels to be powered by a new power canal. In 1854, the power canal was constructed and Wiggin moved a machine shop from Newmarket to the southern end of the canal to serve as the paper mill. Soon after the completion of the building, Wiswall and a new partner, Howard Moses, leased the mill under the name T.H. Wiswall & Company (Stott 1988).

After Moses Wiggin died with outstanding debts in 1856, the mills, water rights, and paper mill lease were publicly auctioned in May 1857. Wiswall and Howard Moses, however, were able to maintain occupancy of the mills, and bought the property outright in July of 1857. Howard Moses managed the financial portion of the business, but died in 1858 and his share of the company was transferred to his father C.C.P. Moses. The elder Moses served as the firm's junior partner until his death in 1883. After some difficulties precipitated by the financial panic of 1857, Wiswall's business prospered enough to justify an expansion of the mill. In 1868, Wiswall constructed a new dam, erected worker housing, opened a store, and expanded the paper mill structure. While the owners focused their attention on the profitable paper mill, saw and grist milling activities declined. By 1870, the grist mill had largely ceased operation and the saw mill only operated three months of the year (Stott 1988). The paper mill continued to operate successfully until November 1883 when the building caught fire and burned to the ground. Faced with bankruptcy, Wiswall disbanded T.H. Wiswall & Company and put the property up for sale the following month. Some of Wiswall's former employees continued to operate the surviving sawmill until a flood in 1896 breached the dam (Preservation Company 2008; Stott 1988). While the mill site was adapted for hydroelectric generation beginning in 1900, the 1896 breach effectively ended the 60-year history of the site as a water-powered mill complex.

PHYSICAL CHARACTERISTICS

The Wiswall Falls Mill Site occupies a 2.85-acre footprint measuring 470 ft north–south and 260 ft east–west. The site is bounded to the north by Wiswall Road, to the west by the Lamprey River, to the south by a transmission line easement, and to the east by an artificial boundary running north–south from Wiswall Road to the transmission line easement at an average distance of 260 ft east from the eastern shoreline of the Lamprey River. The submerged circa (ca.) 1868 crib dam elements, measuring approximately 15-ft wide and 180-ft long, create a narrow, linear extension of the site across the length of the Lamprey River immediately north of and parallel to the extant dam. The infrastructural elements of the former mill site are still visible across the landscape as stone, concrete, and brick foundation ruins, the excavated power canal, and a possible well. The results of previous archaeological investigations at the site suggest that subsurface evidence of the complex may extend as least as deeply as 3 ft below the current ground surface; the identified infrastructural features and results of the previous archaeological work are discussed in more detail below.

Contributing Features

Structure 1 – Power Canal

The power canal, constructed by Moses Wiggin in 1854, is the most visually conspicuous and intact feature within the Wiswall Falls Mill Site. The power canal begins approximately 60 ft north of the existing dam structure, runs east/southeast then south and parallel to the river, passing 50 ft east of the dam's east abutment before exiting west and south into the river approximately 180 ft downstream of the dam via the ruins of the paper mill tailrace. The power canal is completely filled upstream (north) of the flood gate, and additional fill has been placed in the area north of the dam and flood gate. The northern section of the canal was filled in 1967 after the Town of Durham acquired the property and hired the engineering firm of Camp, Dresser & McKee of Boston and contractor A. Belanger & Sons, Inc. of Cambridge, Massachusetts, to rehabilitate the dam (Board of Selectmen 1966; Lewis 1966; Mackey 1967; Town of Durham and Camp, Dresser & McKee 1967; Venett 1993). A shallow, water-filled depression lined with scattered small boulders on its northern perimeter marks the power canal's northern point of entry from the river. A large pile of cut stone and fieldstone, approximately 20–30-ft wide, is located on the eastern perimeter of the filled canal and likely is structural debris associated with its demolition and infilling.

The walls of the power canal downstream (south) of the gate are much more intact and serve as the focal point of the site. The power canal is lined with dry-laid quarried granite and fieldstone and runs south for a distance of 150 ft. In this section, the canal is approximately 12-ft wide and the walls are between 8–10-ft high. The power canal then makes an approximately 90-degree turn west toward the river. This turn marks the point where the headrace ended as water in the

power canal passed through two turbines beneath the paper mill (Stott 1988); no physical evidence of the turbines has been identified. West of the paper mill foundation, the tailrace turns south, transitioning to a piled stone breakwater before merging with the river. The overall length of the power canal, from point of river entry to point of river exit, is roughly 330 ft. Documentation on file at the Town of Durham Department of Public Works (DPW) indicate that in 1998 a series of structural repairs was made to stabilize the power canal (DPW 1999), but plans or photographs showing the exact locations and nature of the repairs could not be located. A segment of concrete facing was identified on the interior face of the west power canal wall, but it is unclear if that is evidence of the 1998 repair episode.

Structure 2 – Wiggin/Wiswall Sawmill Foundation

A portion of the Wiggin sawmill foundation lies on the east bank of the Lamprey River, downstream and adjacent to Wiswall Dam. The surviving wall segment, measuring approximately 30-ft long, 9.5-ft high, and 2–2.5-ft wide, comprised several courses of irregularly stacked, dry-laid, cut granite blocks chinked with smaller stones. A 10-ft long portion of the wall appears to have been incorporated into the dam's downstream abutment and covered with shotcrete, resulting in a total length of 40 ft wing for the surviving north-south-oriented segment of the sawmill foundation south of the dam wall. A portion of the south wall of the sawmill foundation also survives, measuring 12-ft long from east–west to its juncture with the west wall of the grist/flour mill complex (Structure 10). Stones in the sawmill foundation wall range from 6–36 inches long and have numerous visible 3/4-inch diameter drill marks and holes for lifting tongs.

In order to accommodate the installation of a Denil fish ladder at the eastern side of the existing concrete dam, in 2011 an approximately 22-ft long segment of the sawmill foundation wall was mechanically dismantled, beginning at the junction of the foundation with the dam's concrete wing wall to a point 6–7 ft short of the foundation corner; the results of the archeological monitoring program conducted as part of the sawmill deconstruction are provided below. Following the deconstruction and embankment stabilization, the concrete fish ladder was installed with the corner of the sawmill foundation preserved in place.

Reconstructing the original size and configuration of the ca. 1835 Wiggin sawmill is complicated by the fragmentary nature of the surviving structural data, the construction of Wiswall Dam in 1912, and conclusions and assumptions provided in earlier archaeological and historical documentation of the building. In their description of the surviving sawmill foundation, Maymon and Bolian (1985) comment that "The dimensions, approximately 40 by 15 feet, do not match any of the historically documented structures in the mill complex," a statement that suggests the authors believed that the archaeologically-identified structural elements encompassed the full extent of the former sawmill. The 1857 auction advertisement for the mill complex, however, puts the size of sawmill at 60-x-24-ft, dimensions that would appear to be corroborated by a ca. 1883–1896 archival photograph of the building[i]. Using the photograph and auction advertisements as comparative sources, and assuming that the surviving foundation walls represent only a portion of the former sawmill structure, it is likely that north–south- oriented wall would have extended 10–15-ft north of the upstream face of existing dam wall. No evidence of the north portion of the foundation is visible, however, suggesting that it was likely destroyed during the construction of the dam.

Similarly, Maymon and Bolian (1985) assume that the north–south fieldstone wall paralleling the river represents the outside western wall of the sawmill, an assumption that would narrow the width of the building by half when compared to size description provided in the 1857 auction posting. The ca. 1880 photograph of the sawmill, however, suggests that the surviving wall was more likely internal to the building, bisecting the foundation from north to south and serving as the east wall of a race that would have channeled water through the turbines and south out of the building. This supposition is bolstered by several interrelated observations. First, the ca. 1883–1896 photograph and a second undated photograph show two substantial "window" openings at the south end of foundation wall, openings that do not occur in the existing foundation wall segment despite its roughly equivalent elevation with the existing dam. Second, the surviving south wall of the structure is a closed wall that would not permit the flow of water through the raceway as would be necessary to power the mill. And finally, the archaeological monitoring program conducted in 2011 documented what appeared to be the outer wall of the original race in the form of a linear configuration of large blocks of cut and unworked stone toppled across a naturally-occurring "spine" of bedrock.

[i] The photograph shows the condition of the sawmill sometime after the fire of 1883, but before the 1868 crib dam was washed away in 1896. It would appear that the chimneys from the boiler house survived the fire, and can be seen rising above the roofline of the sawmill.

This configuration of features suggests that the outside foundation wall depicted in the ca. 1880 photograph is not the same wall that survives on the modern landscape, but the external wall of an enclosed raceway that was probably leveled in 1912 with the construction of the concrete dam with only its very lowermost course of stone left in place. The apparent extension of this outer wall beyond the southern terminus of the sawmill's center wall also may have been a deliberate attempt to better channel the outflow from the sawmill to power the grist/flour mill immediately downstream. It also suggests that the superstructure shown in the archival photograph is an expansion of the original mill structure that in its original form would likely have been constructed with an external waterwheel. With the adoption of turbine technology at the site, possibly during the mid 1850s with the excavation of the power canal and expansion and diversification of milling operations, the sawmill appears to have been doubled in size to enclose the raceway within the structure itself. A vertical seam in the center of the sheathing on the north gable end of the mill underscores this notion. If this construction history is correct, the foundation segment remaining on site is a significant survival from the original 1835 sawmill structure, but only a very small portion of the later nineteenth-century building. Furthermore, the placement of the mill straddling the river shoreline would also explain why no race feature associated with the original sawmill and gristmill operations has been conclusively identified to date (Stott 1988: Section 7:2).

The eastern foundation of the sawmill has not been identified. Maymon and Bolian (1985) state that "A wall appears to be present on the eastern side (of the sawmill)… most of it is buried," but no evidence of that wall was encountered during the 2010 identification survey (Heitert and Gillis 2010) or the 2011 archaeological monitoring program (PAL 2011). The archaeological monitoring, however, determined that the soils east of the surviving foundation wall were mostly intact subsoils that sloped steeply toward the river, suggesting that the east wall of the mill had been constructed on the naturally higher river embankment, and that it may have rested directly on the ground surface with the stones subsequently robbed out or displaced during later construction activities.

Structure 3 – Wiswall Paper Mill Foundation

The paper mill at Wiswall Falls was a two-story structure measuring 30–34-ft wide and 80-ft long. The structure that served as the paper mill originally was a machine shop that Moses Wiggin moved from Newmarket to the southern end of the power canal in 1854, and was powered by two water wheels within the new canal. The eastern end of the structure was supported by the dry-laid cut stone foundation located at the southeastern corner of the power canal, while the remaining portion of the structure extended west over the canal and was supported by the canal foundation walls. In 1868, the paper mill was lengthened by 10 ft and an ell measuring 13-x-30 ft was added (Stott 1988).

Three foundation walls at the eastern edge of the mill site appear to have been reworked, indicating modification of the structure. Two different wall types are visible. The majority of the walls are constructed of large blocks of cut diorite, which appear to date to the 1854 construction of the power canal and paper mill and/or the 1868 expansion. The later (reworked) portions of the walls are constructed of fieldstone, mortar, and some brick and appear to date to the ca. 1900 construction of the hydroelectric facility at the location (Bolian and Maymon 1985; Stott 1988). A total of five brick-and-stone machine pads are located within this portion of the site and also appear to be related to the hydroelectric facility; machine pins embedded within the pads range from 0.5–0.7 inches in diameter.

Structure 4 – Boiler Room

The remains of the boiler room structure are located immediately south of the paper mill and hydroelectric plant foundation remains. The steam boiler was used in the paper drying process (Preservation Company 2008; Stott 1988). Construction of the boiler room structure appears to post-date the death of Moses Wiggin in 1856, as the structure is not mentioned in the probate or deed records (Stott 1988). It may have been constructed ca. 1868 when the dam was rebuilt and the paper mill plant expanded.

The surviving structural evidence for the building consists primarily of a large berm of soil containing boiler brick in what would have been the southwest half of the standing structure. Also contained within the berm are a boiler plate and coal and slag that together suggest the berm is demolition debris from the smokestack. The south perimeter of the structure is defined by the remains of an east–west-oriented brick wall measuring approximately 12-ft long, 1-ft wide, and 2.5–3-ft high. The eastern margin of the structure is marked by a mostly buried north–south-oriented stone wall measuring

approximately 30-ft long. Stott (1988) also reported a buried brick wall delineating the northern margin of the structure, but that feature could not be re-identified during the 2011 field survey.

Structure 5 – Office Building Foundation

Structure 5 is the easternmost of two structures located east of the canal and north of the paper mill. The field and cut stone foundation measures approximately 27 ft north–south by 18 ft east–west. It is excavated into the side of a low-elevation landform and contains a fairly shallow cellar hole. The west foundation wall is attached to Structure 6 (see below).

This building consistently has been identified as the remains of a shingle shed structure, an attribution based primarily on the similar size of the surviving foundation remains with the 18-x-28-ft shingle shed described in the 1857 auction advertisement (Bolian and Maymon 1985, 1986; Heitert and Gillis 2010; Kenyon 1986; Preservation Company 2008; Stott 1988). The clapboarded, shuttered, and two-chimneyed building that stands in the location of Structure 5 on the ca. 1880 photograph of the mill complex, however, appears to have functioned less a utilitarian shingle shed than as a business office. Given the complexities of administering such a large and complex mill facility, and the fact that the structure is physically removed from the power canal that would have provided it with the water for its operations, it is more likely that it was built as an office sometime shortly after the excavation of the power canal in 1854, and that the shingle shed more likely stood downstream of the planing and jointing shed along the east side of the power canal (see Structure 13 below).

Structure 6 – Bridge Abutments and Retaining Wall

Structure 6 is located approximately 45 ft east of the power canal; its east wall is partially formed by the foundation wall of Structure 5. The drylaid stone foundation measures approximately 30 ft north–south by 15 ft east–west. In more closely examining the location of surviving structural elements, it appears that rather than serving as a building, Structure 6 is actually the remains of a bridge crossing spanning a substantial east–west sloping hillside adjacent to the office building. The 1880 archival photograph clearly shows this "upper" crossing, complete with a guardrail, at a substantially higher elevation than the "lower" crossing along which a man is driving his wagon north toward Wiswall Road. The construction of this feature may have been undertaken to reclaim a previously unusable area of sloped ground to improve traffic flow throughout the complex.

This interpretation is strengthened by reconsideration of the foundation itself, and in particular the idea that the missing stones along the west side of the building were robbed out sometime after the closure of the paper mill (Bolian and Maymon 1985). Rather than presenting a jagged edge surrounded by rubble as would be expected from a robbed structure, the north and south ends of the west wall present flat, somewhat finished surfaces with no evidence that they were formerly part of any larger wall building campaign. When viewed as a bridge crossing, the north, south, and east walls of Structure 6 are more properly understood as bridge abutments and a retaining walls, with the west side left open perhaps to accommodate storage beneath the bridge planking above.

Structure 7 – Planing and Jointing Shed Foundation

Structure 7 was first identified during the 1985 survey as portions of a drylaid stone wall running north–south at 20 centimeters below the surface (Bolian and Maymon 1985). Ash and charcoal deposits identified in the archaeological tests document the 1883 fire that burned the mill complex.

The location of Structure 7 as archaeologically documented by Maymon and Bolian is problematic. The 1985 report places the surviving foundation "between Structure 6 and the canal… (as) uncovered during shovel testing in (shovel test pit) STP B-5 and possibly B-7" (Maymon and Bolian 1985:15). Mapping of these test pits puts the identified features at the north end of the power canal. The follow-up Phase II testing, however, places the larger excavation units in the "two areas where the wall had been located in Phase I… to expose more of the wall" (Maymon and Bolian 1986:11), at the south end of the power canal much closer to the paper mill. The reason for this shift is unclear, but may be attributable to the faulty relocation of the 1985 test pits during the 1986 survey, a mislocation that can be easily understood given the heavily overgrown and jumbled landscape that characterized the site at that time. Whatever the reason, the resultant data

suggests that between 1985 and 1986 the archaeologists identified two structures, rather than one, immediately east and adjacent to the power canal.

The dry-laid stone wall segment identified during the Phase I testing STP B-5, along with a second segment of wall identified during the Phase II testing in excavation unit S41W2.5 are likely the remains of the east wall of "the single story structure directly behind the man standing beside the horse drawn wagon" (1986:10) in the ca. 1880 archival photograph of the complex. The north–south linear arrangement of the stones and their location relative to the power canal and Structures 5 and 6 correspond well not only with the 1880 photograph, but with the 1857 auction description of the planing and jointing shed as a one-story, 40-x-12-ft structure. Given the architectural similarities between Structure 7 and Structure 5, it is likely that it too was built sometime just after the excavation of the power canal in 1854.

No surface evidence of this structure survives on site.

Structure 8 – Stockhouse Foundation

Structure 8, identified as a stockhouse/warehouse structure, lies at the southeast corner of the site. The building is not mentioned in the 1857 auction advertisement for the complex, so it may be that it was built sometime around 1868 with the construction of the new crib dam and the general infrastructural expansion of the property. The 1880 photograph of the mill complex shows it as two connected two-story structures, including an eastern structure with an east–west oriented roof and a western structure with a north-south oriented roof, each measuring 25-x-30 ft. These dimensions are comparable to those reported for the building in Griffiths' history of Packer's Falls (Griffiths n.d.).

The remaining surface evidence for this structure takes the form of three large, north–south oriented berms that presumably mark the locations of three structural foundation walls. Sections of blasted rock outcrop form part of the southern and western sides. A portion of a stone foundation wall was identified at the southwest corner of the presumed structural footprint and also along its eastern edge. A few cut stones also mark the southwest corner of the former building. The dimensions of the Structure 8 are estimated at approximately 50-ft magnetic east-west by 25-ft magnetic north-south, with a middle wall centrally located between the east and west sections.

Structure 9 – Storage Building Foundation

Structure 9 is the northernmost of all the mill structures. Archaeological probing by Bolian and Maymon (1986) preliminarily identified foundation dimensions of approximately 16-x-18 ft. The authors reported that that only the eastern portion of the foundation was visible aboveground at that time, and that the foundation was likely robbed for stone sometime after the abandonment of the complex. The measurements described by Bolian and Maymon do not clearly correspond to any building in the 1857 advertisement for the complex, but it may be the remains of the small structure shown in the left foreground of a ca. 1880 photograph of the mill taken from the vicinity of Wiswall Road. While the function of the building is not is not obvious from the photograph, its lack of windows and modest size suggest it may have been a storage structure.

No surface evidence of this structure could be re-identified during the 2011 documentation of the site.

Structure 10 – Grist/Flour Mill Foundation

The grist and flour mill was constructed by Moses and Issachar Wiggin shortly after the dam and sawmill were constructed in 1835. The gristmill was 50-x-24-ft and, like the sawmill, was powered by two water turbines. Historic photographs indicate that the gristmill was located on the island, south and slightly east of the sawmill. The photographs suggest that the west foundation wall of the gristmill utilized the stone wall that extends south from the southeast corner of the sawmill foundation.

With the exception of the stone wall that is presumed to have served as the west wall of the mill, no structural or archaeological evidence of the grist/flour mill has been identified to date.

Structure 11 – 1868 Crib Dam Remains

The remains of what is likely the ca. 1868 wooden crib dam are located approximately 10 ft upstream of the extant 1912 concrete dam, extending west across the river impoundment from the projected northern foundation wall of the sawmill. An exploratory dive conducted in 1994 identified two intact sections of the crib dam remains consisting of 1-x-12-ft wooden beams laid on top of 6-x-6-ft wooden beams. Both sets of beams are sunk several feet into the river bottom and point toward the dam at a 45-degree angle (Diver Services 1994).

Structure 12 – Possible Well

A possible well is located on the east side of the footpath between Structures 3 and 8. The feature consists of a circular deposit of cut stone, approximately 3 ft in diameter, situated around a cut and hollowed out wooden implement. While the function of the feature is not known, it may represent a capped well.

Structure 13 – Shingle Shed

Structure 13 originally was identified as Structure 7 on the basis of the 1985 and 1986 survey work at the site. In summary, during the 1985 survey work two foundation elements were identified in test pits B-5 and B-7 immediately east of the power canal and west of Structure 6, and were designated Structure 7 (Bolian and Maymon 1986). As discussed above, however, the units excavated in 1986 to further explore those foundation remains were placed substantially farther south than STPs B-5 and B-7; while the relative distance of the excavation units from the east wall of the power canal was consistent with the 1985 test pits, they were much closer to the paper mill foundation than to Structures 5 and 6. The 1986 archaeology report continues to refer to the expanded foundation remains as Structure 7, but the excavation unit testing at S77W1 and S84W17 instead appears to have identified the west and south walls, respectively, of the 18-x-28-ft shingle shed described in the 1857 auction announcement.

This building, tucked between the planing and joining shed and the paper mill, seems to have been regularly overlooked in the ca. 1880 archival photograph of the complex, instead being interpreted as part of the paper mill building. Careful inspection of the photo, however, shows that the shingle shed roofline is at a slightly different elevation than that of the paper mill, and also shows what appears to be the back edge of the shed just visible above the right gable corner of Structure 7. In addition, the paper mill and the shingle shed appear to be sheathed in entirely different materials. Like the adjacent planing and joining shed, the construction of the shingle likely dates to sometime shortly after the excavation of the power canal in 1854.

No surface evidence of this structure survives on site.

Non-Contributing Features

1912 Wiswall Dam

Wiswall Dam (NH State No. 700) is a concrete gravity type, run-of-the-river structure that traverses the Lamprey River on an east–west axis. The dam was constructed by the Newmarket Electric Company in 1912 during a period when a series of improvements were undertaken to increase the capacity of the hydroelectric facility; a concrete gate within the power canal was erected at the same time. Its impoundment extends approximately 1.3 miles upstream within the Lamprey's natural channel. The structure measures approximately 250 ft in length from the outer ends of the core walls, is 17.8 ft high, and creates about 11 ft of head (fall). The concrete spillway is 110 ft long, 13 ft high, and traverses almost the entire width of the river channel. The western two-thirds of the spillway is built atop a granite ledge and the eastern third of the structure rests on what appears to be a course of split granite blocks. A portion of the former Wiggin-Wiswall sawmill foundation is incorporated into the dam's east abutment and training wall.

The dam is included as a contributing resource to the Wiswall Falls Historic District (Preservation Company 2008), and was the subject of state-level archival photographic and historical documentation (Daly 2011) in compliance with Stipulation II of the Memorandum of Agreement (MOA) for the Wiswall Dam fish ladder installation project.

1912 Concrete Flood Gate

A concrete flood gate contemporaneous with the extant dam is located within the historic power canal (Structure 1) approximately 50-ft due east of the dam's east abutment. This plank-formed, reinforced concrete structure has three 5-ft wide gate apertures and two angled buttresses projecting downstream between the apertures. The original timber gate leaves are missing, and the operating mechanisms and concrete headframe have been removed from the top of the gate, which is now covered with a timber deck. Concrete lines both walls of the raceway for a short distance downstream (south) of the gate.

SUMMARY OF PREVIOUS RESEARCH

The Wiswall Falls Mill Site has been the subject of six (6) cultural resources investigations conducted between 1985 and 2011. The first of these projects comprised an identification survey in advance of the proposed construction of a hydroelectric facility on the east bank of the river just south of the extant dam. The survey resulted in the initial delineation of the site and the inventory of seven (7) structural features including the ca. 1835 sawmill foundation remains (one of the first mills to be erected on the site), the ca. 1854 paper mill foundation, and the large, well-preserved 1854 stone-lined power canal (Bolian and Maymon 1985). A total of 19 STPs was excavated immediately east and south of the power canal that documented deep fill deposits containing a low density of later nineteenth- and twentieth-century cultural material (e.g. bottle caps, wire nails, cigarette butts, brick fragments, clear and brown bottle glass, coal, and large amounts of slag). Test pits B-5 and B-7 uncovered portions of a drylaid stone wal1 running north–south at 20 centimeters below the surface, and was identified as a possible shed (Structure 7), although the exact length and function of the feature was not conclusively determined. Based on the results of the Phase I survey, the authors concluded that

> *Much of this (mill) complex remains. Specific mill structures have not yet been identified, however several are visible above the ground. Houses relating to the period of mill activity are still standing on the north side of Wiswall Road. The relatively undisturbed nature of the entire community makes it an important location for the study of nineteenth century industrial development* (Maymon and Bolian 1985:18).

In keeping with that observation, an evaluation survey was conducted the following year focused on those areas slated for project-related impacts associated with the hydroelectric development (Bolian and Maymon 1986). Testing at Structure 13 (erroneously identified as Structure 7 in the report), a north–south-oriented stone wall located approximately 26 ft east of the east wall of the power canal, was designed to delineate the physical extent of the building, identify builders' trenches, and sample fill from inside the foundation. Using a combination of soil probes spaced at regular intervals and six excavation units, the foundation was determined to measure approximately 41.5-ft long and 14-ft wide based on the identification of the northeast and southwest corners of the structure. A discrete layer of ash, charcoal, and mortar underlain by oxidized soils was identified in all of the excavation units, and provided clear evidence of the fire that destroyed nearly the entire mill complex in 1883. Evidence for builders' trenches was far more equivocal, with the only clearly construction-related trench found running east–west at the southwest corner of the foundation; the feature, however, did not yield any diagnostic materials with which to date the construction of the shed, or any interpretively substantive stratigraphic sequences. Finally, a unit excavated in the center of the foundation uncovered several large stones that appeared to have been deliberately placed in clean fill to act as supports for floor joists, suggesting that the shed, at a minimum, had been built with a crawl space of some kind.

Structure 3, the paper mill foundation, was tested using two units placed inside and outside of the southeastern corner of the building remains. The unit placed outside of the foundation wall identified no evidence of a builder's trench, but the unit placed inside the foundation documented a one foot-thick layer of modern trash (e.g. steel and aluminum cans, late twentieth-century ceramics, bottle and window glass, bricks, automobile parts), followed by six strata containing a mix of later nineteenth-century structural and domestic debris (e.g. ceramic insulators, melted and unmelted bottle and window glass, cut nails, buttons, ceramics), wood planking, mortar, and brick. Excavation was terminated due to water table inundation, but probing within the waterlogged soils at the bottom of the unit yielded a 2–3-inch thick charcoal layer, probable evidence of the 1883 fire. The sequence of deposits and associated cultural material indicates that after the building burned, it was filled with demolition debris from the site and eventually capped with fill related to the use of the site as a hydroelectric facility in the early twentieth century. Following the complete abandonment of the complex in the

1940s and the use of the impoundment as part of the town water supply system, the foundation was used as an occasional illicit dump site until being refurbished as the John Hatch Memorial Park (Bolian and Maymon 1986).

In addition to the subsurface testing, the evaluation work also identified two additional structures at the site including Structure 8, the stockhouse ruins, and Structure 9, an untyped outbuilding that does not correspond to any documented structures within the mill complex. It is important to note that the lack of a professionally rendered site map, detailed plan and profile views, or accompanying photographs makes many of the authors' conclusions difficult to evaluate, and has resulted in no small degree of confusion concerning the location, size and function of many of the archaeologically-identified structural remains.

A third survey conducted by Victoria Kenyon in 1986 also provided important information about the general landscape integrity of the Wiswall Falls Mill Site. Subsurface testing just north of the dam near Wiswall Road identified a relict plowzone and also provided evidence of the precontact occupation of the area in the form of three lithic cores recovered from intact subsoil. This concentration of materials expanded the geographic boundaries of the known precontact use of the area as illustrated by another precontact site (NH40-10), located roughly 75 meters downstream from the dam site. While not directly associated with the historic mill complex, and not recommended as potentially National Register eligible in and of themselves, the recovery of precontact materials from intact subsoil strata suggested a level of landscape integrity upstream of the extant dam with the potential to yield similarly intact historic period deposits related to the Wiggin/Wiswall milling tenure on the property.

The hydroelectric facility project was never implemented, and the site remained unexamined until July 1994 when an exploratory dive survey was conducted immediately upstream of the dam. The summary letter detailing the results of the dive does not explain the reason for the work, but does describe two areas "that pose a significant safety hazard… (to) someone who is jumping or diving," suggesting that it was undertaken to assess the suitability of the impoundment as a swimming hole as part of the planning process to convert the mill site into a public park (Diver Services 1994). The "hazards," described as having very jagged edges, were the remains of the earlier crib dam (Structure 12) located roughly 10 ft north of the extant dam wall.

Between 1996 and 2000, the Lamprey River was designated a National Wild and Scenic River under the management of the NPS. Ordinarily, rivers receiving this designation do not have dams, but an exception was made for Wiswall Dam in consideration of its importance in maintaining a supplemental water supply for the town of Durham and the University of New Hampshire. In order to restore the aquatic habitat of the Lamprey River and the upstream migration of anadromous fish along its length, however, a Denil fish ladder was proposed for the eastern end of the Wiswall Dam (New Hampshire Department of Environmental Services [DES] 2002]). After several years of planning among the NPS, the Town of Durham, the United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS), the Lamprey River Advisory Committee, and several other private and public stakeholders, the details of the fish ladder installation were finalized to include building an emergency spillway on the west side of the dam; repairing and rebuilding the downstream training walls including the east wall that incorporated portions of the historic sawmill foundation (Structure 2); and regrading of the existing ground surface. In advance of the construction work, a total of 27 50-x-50-centimeter (cm) test pits was excavated within the Wiswall Falls Mill Site, the majority of which was located north of the core mill complex (Heitert and Gillis 2010). Subsurface testing revealed heavily mixed and deeply disturbed soils dating to the destruction/demolition of the various milling concerns within the site, and by the subsequent modern dam and hydroelectric facilities construction activities. The belowground disturbance was most often manifested as deep gravel fills underlain by graded C subsoil horizons.

The artifact assemblage comprised slag, coal, miscellaneous historic ceramics and metal fragments, and glass. No precontact cultural materials were recovered during the excavations. The vast majority of the recovered materials included cinder, clinker, coal, and coal ash. Very few datable materials or domestic or personal items were recovered from the site, and none of those that were recovered conveyed any substantive information about the construction and/or use of the mill complex or the day-to-day lives of its managers and employees. None of the cultural material was recovered from intact or historically significant soil contexts and did not form any discrete clusters suggestive of activity areas or a planned landscape. While a layer of cinder and coal was identified in several test pits that is indicative of the 1883 fire that destroyed the mill, the layer generally did not contain other artifacts that would provide additional information about the complex. The stratigraphic association of this burn layer also was somewhat problematic. In some test pits, the layer was found within fill soils, while in others it was found to overlie graded B or C horizon subsoils. The mixed association

of the layer suggests that it was likely disturbed in some areas subsequent to the fire event. The cinder/coal layer likely represents the same matrices previously identified by Bolian and Maymon (1985, 1986) and by Kenyon (1986) within several test pits excavated in other areas of the mill complex.

No evidence of builders' trenches or stratigraphic sequences that could provide additional information about the surviving foundation elements of the ca. 1835 sawmill were identified during subsurface excavations, nor was there any evidence of buried, intact structural remains associated with any of the other mill buildings. Two large pieces of cut granite were identified in one of the test pits – after expanding the test pit, however, it was clear that the stone, while probably part of a historic foundation at one time, was completely displaced from its original context and had merely been incorporated as part of a larger filling episode.

Because the construction of the fish ladder was determined to have an adverse effect on the Wiswall Falls Mill Site through the demolition of portions of the contributing ca. 1835 sawmill foundation (Structure 2), an MOA was signed by the USDA–NRCS, the New Hampshire State Historic Preservation Office (NHSHPO), and several other local and federal signatories that included a stipulation designed to mitigate that effect. The archaeological mitigation measure (Stipulation I) included existing conditions documentation of the site; monitoring of the construction activities associated with the installation of the fish ladder at Structure 2; and the update of the original 1988 National Register documentation for the site. In May 2011, the existing condition of the ca. 1825 Wiggin sawmill foundation was recorded through measured drawings of the surviving wall and high-resolution digital photography. At the time of the survey, unusually high water levels in the Lamprey River precluded the complete documentation of the foundation wall profile; this work was completed as part of the archaeological monitoring program conducted in July 2011 (see below). In addition to documenting the sawmill foundation wall, the entire Wiswall Falls Mill Site was digitally photographed and mapped using a Leica TCR 405 total station with a Carlson Explorer II data collector , the results of which have been included as part of this document.

On-site monitoring of the sawmill foundation deconstruction was undertaken in July 2011. The monitoring program was designed to observe and record any previously unrecorded structural elements or features associated with the foundation, and included detailed field notes, high-resolution digital photography of the dismantling and removal activities, and sketch maps of the deconstruction impact area. In advance of the construction work, the sawmill foundation profile was drawn in its entirety to document those structural elements that were inaccessible during the May recordation effort (see above).

Following clear-cutting around Structure 2, an approximately 22-ft long segment of the foundation wall was mechanically dismantled, beginning at the junction of the foundation with the dam's concrete wing wall to a point 6–7 ft short of the foundation corner. Each stone was individually removed and stockpiled on site, with the soils gradually lowered as each course was removed. After the wall segment was dismantled, the remaining soils behind the foundation were mechanically excavated for a horizontal distance of approximately 25 ft and to a maximum depth of 9 ft below ground surface. The excavation was sloped up and away from the riverbank to permit machine access for the fish ladder construction. The soils closest to the foundation wall were composed of a yellowish brown fill densely packed with cobbles extending to the base of the foundation. It is likely that this fill was brought in to stabilize the foundation in support of its use as a training wall for the dam. As the excavation moved farther east from the foundation location (approximately 16 ft), the fill deposit became shallower and capped by truncated but intact B and C subsoils. No features were identified in the excavated area and no cultural material beyond brick fragments and modern trash were observed in the fill deposits. Several days after the deconstruction of the wall, USDA-NRCS staff pulled a wood axle or drive shaft out of the water downstream of the dam and near the east bank of the river. The axle/drive shaft was surrounded by a metal bearing surface set in an adjustable mount fixed by four bolts in the lobes of the mount to the broken iron frame. The object was not articulated with any larger structural/architectural feature, and is likely a piece of "demolition debris" associated with the razing of the mill complex after the 1883 fire. Where and from what mill the object may have originated is difficult to say given its lack of context. The substantial diameter of the wood shaft, however, indicates that it might have been from somewhere in the primary mechanical drive of one of the mills, somewhere between the wheel and the actual mill machinery (PAL 2011).

Statement of Integrity

The Wiswall Falls Mill Site remains substantively intact and possesses integrity of feeling and association sufficient to convey its significance as a water-powered mill site that made a direct and substantive contribution to the industrial

development of the Town of Durham. The site also maintains sufficient integrity of location, design, and setting to contribute realized and potential archaeological data on the specific physical evolution and joint operations the three functionally and temporally discrete water-powered mills that operated in the complex from 1835–1896, as well as general comparative data on an archaeologically under-represented resource type.

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- [X] A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- [ ] B Property is associated with the lives of persons significant in our past.
- [ ] C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- [X] D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations
(Mark "x" in all the boxes that apply.)

Property is:

- [ ] A Owned by a religious institution or used for religious purposes.
- [ ] B removed from its original location.
- [ ] C a birthplace or grave.
- [ ] D a cemetery.
- [ ] E a reconstructed building, object, or structure.
- [ ] F a commemorative property.
- [ ] G less than 50 years old or achieving significance within the past 50 years.

Areas of Significance
(Enter categories from instructions.)

INDUSTRY

ARCHAEOLOGY/ historic—non-aboriginal

Period of Significance

1835–1896

Significant Dates

1835

1854

1883

1896

Significant Person
(Complete only if Criterion B is marked above.)

Cultural Affiliation

Euro-American

Architect/Builder

N/A

Period of Significance (justification)

The Wiswall Falls Mill Site's period of significance of 1835–1896 reflects the period of operation of several water-powered mills at the falls, and the primacy of those mills to the economic development of Durham during that period. The 13 identified structural remains all were constructed and/or in use during the Wiggin and Wiswall tenures at the site, and retain integrity of location, design, setting, feeling and association sufficient to convey the significance of the property as a water-powered industrial complex. While the site was used for hydroelectric purposes from 1900–1955, that function is not considered to be significant to the industrial history of the Town of Durham in particular, or to the history of

hydroelectric power generation in general. Furthermore, the physical remains associated with hydroelectric generation at the site are too limited and retain too little integrity to sufficiently convey their usage in that capacity.

Criteria Considerations (explanation, if necessary)

N/A

Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance and applicable criteria.)

The Wiswall Falls Mill Site is significant at the local level under National Register Criteria A and D in the areas of Industry and Archaeology/Historic–Non-aboriginal. The site is the most intact surviving remnant of Durham's nineteenth-century manufacturing base, and comprises resources that illustrate the evolution of the complex from a sawmill/gristmill complex typical of many rural communities to a thriving paper mill complex between 1835 and 1896. The Wiswall Mill complex was the town's most successful manufacturing industry as measured in terms of the number of persons employed, the value of product manufactured, and capitalization and, as such, the site illustrates the direct and substantive contribution that the site made to the industrial development of the town. While the paper mill was the most substantial and most profitable building within the milling complex, it is the sawmill that provides perhaps the most compelling historical site narrative for its longevity and continued, albeit limited, productivity in the face of declining economic fortunes.

The site also is significant at the state level under Criterion D in the area of Archaeology/Historic–Non-aboriginal for its realized and potential ability to provide significant data about the organization of a rural, water-powered milling site in operation from the mid to late nineteenth century. Since its destruction by fire in 1883, the complex has experienced very little physical disturbance and comprises the remains of 13 identified structural features. Rural mill sites, without the benefit of fire insurance surveys or other detailed plans, are extremely difficult to interpret in the absence of documentary evidence to provide data about their equipment, construction, and operation. The research potential for the Wiswall Falls Mill Site derives from its integrity of location, design, and setting to provide meaningful information about the function and organization of an understudied industrial property type that was integral to the economic and development of the state, and provides an excellent opportunity to examine in detail one of the major features of Durham's nineteenth-century economy.

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

CRITERION A – INDUSTRY

The Lamprey River has hosted numerous water-powered industrial operations over the past 350 years. The first mills on the Lamprey River were built in 1650 when Newmarket's Great Falls were harnessed for power. Upstream (west) of Wiswall Falls, Wadleigh Falls in Lee was the site of mills from ca. 1670 through the nineteenth century, and downstream from the falls the river also powered industries in Epping and Raymond (Preservation Company 2008; Scott 1988).

In the late seventeenth century, the town of Dover granted Captain Thomas Packer and four other men rights to "the whole stream of Lamprey River for the erecting of sawmills or mills" and Packer himself received 50 acres of land on the south side of what became known as Packer's Falls in present-day Durham. Wiswall Falls, located about 1,300 ft upstream, were also included in the grant (Thompson 1892:165–166).[ii] Saw and grist mills were in operation at Packer's Falls by the 1720s, and the area was extensively developed in the 1770s with as many as six mills including saw, corn, and fulling operations. The area surrounding what is now Wiswall Dam, however, remained largely agrarian in nature until as late as 1805. The impetus for its development came with the 1796 construction of New Hampshire's first turnpike

[ii] Until the early twentieth century, Packer's Falls and Wiswall Falls often were referred to collectively as Packer's Falls.

(Route 4) between Portsmouth and Concord, a road would that expanded the town's population from 1,247 in 1790 to a peak of 1,600 in 1830, and encourage the commercial and industrial development of the town's second mill privilege (Preservation Company 2008; Stott 1988).

The first step toward the development of the mill privilege occurred in 1825 when Captain William Wiggin (1776–1831) of Durham purchased ten acres of pasture surrounding the falls from David Stevens of Lee (Preservation Company 2008). Wiggin's two sons, Issachar (1809–1844) and Moses (1803–1856), inherited the privilege at the time of their father's death in 1831 as well as the family's 100-acre homestead farm on Bennett Road and a 68-acre farm on Packer's Falls Road. At the time of their inheritance, the will and probate makes no mention of any buildings or even a road in the vicinity of the mill privilege (Preservation Company 2008).

In 1835, the brothers constructed a large wooden crib dam on the granite ledge at Wiswall Falls and a sawmill on the east side of the river followed by a grist and flour mill just downstream. The saw and grist mills were each powered by two water turbines, the sawmill turbines alone supplying 50 horsepower to the up-and-down saw and three small circulars. It is likely that Wiswall Road was laid out at that time to connect the mills to Packers Falls Road and provide public access to the complex. The Wiggins Mill fast became the largest industrial operation in Durham. The sawmill produced lumber and ship timbers cut from the brothers growth lots in Durham and Lee as well as timber purchased from local farmers, while the grist mill processed grain from surrounding farms. In addition to their processing activities, the brothers also rented space at the complex to other manufacturers who produced a range of goods including gingham cloth, shoe knives, hoes and pitchforks, wooden measures, nuts and bolts, bobbins, axe handles, carriages and sleighs, chairs, and matches. This diversity of products reflected the growing diversity of the local economy, and increased the overall economic viability of the complex (Stott 1988; Thompson 1892:238).

In 1840, the brothers purchased a second mill privilege opposite the first on the west side of the river. To connect the two parcels, New (Wiswall) Road was built across the Lamprey during the early 1840s. During this same period, several houses were built north of the road along the east bank of the river and occupied by the Wiggin family. Issachar died in 1844 and Moses took sole possession of the mill complex in that same year. By 1850, Moses Wiggin's sawmill, valued at $3,000, was the most heavily capitalized mill in Durham, producing over 600,000 board feet of lumber and ship timber annually. The success of the mill also may be inferred from the fact that in1852 the Wiggin's Mill bridge underwent extensive work in what was likely an effort to upgrade its capacity to handle the increased industrial, commercial, and residential use.

In 1853, Moses leased the dam, mills, and water rights to Thomas H. Wiswall (1817–1906) and Isaac Flagg, Jr. Thomas. Wiswall was born in Exeter, New Hampshire, and came from a prominent papermaking family that owned a successful mill in Newton Lower Falls in Massachusetts by 1790 and that had briefly owned a paper mill at Packer's Falls. Wiswall had worked in his father's paper mill and other mills for more than 13 years, but had never run a business of his own. That changed with his lease of the Wiggin complex whereby Wiswall oversaw the day-to-day operations of the mill. Flagg soon backed out the partnership, and his interest in the business was acquired by Howard Moses.

As part of the $350 per year lease agreement, Wiggin was required to build a two-story paper mill for Wiswall's use to measure 34-x-80 ft with two water wheels to be powered by a new power canal. The paper mill itself, rather than a new construction, was a large machine shop that Wiggin had moved from Newmarket to the southern end of the canal (Stackpole 1994). During the relocation of the mill and the construction of the canal, Wiswall made paper in the existing facilities until 1854 when the site improvements were completed and the mill complex renamed T.H. Wiswall & Company (Biographical Review Publishing Company [Biographical Review] 1897:414; Stott 1988).

Insofar as the historical documentation of the paper mill is concerned, it is important to clarify what appears to be a long-standing misperception about the appearance of the structure. In *The History of the Town of Durham, New Hampshire*, a photograph labeled as "Wiswall's Paper Mill" is provided that purportedly shows the former mill building before its destruction by fire in 1883 (Stackpole et al. 1994 [1913]:308); the image was subsequently reproduced and cited as the Durham paper mill in the Wiswall Falls Historic District State Register-documentation (Preservation Company 2008:47) and the Phase IB archaeological report (Heitert and Gillis 2010: Figure 4-4). However, careful comparison of the photograph with other archival photographs (especially that of the Wiggin sawmill) and the mapped structural ruins on

site suggests that the paper mill in the picture is both too large and in the wrong location relative to the 1868 crib dam to be that of the Wiswall Fall's paper mill. Richard Lord, Durham town historian, succinctly explains the misattribution in his comment that

> *Thomas Wiswall was born into a family of paper makers. There were Wiswall mills in Exeter and at Newton Lower Falls, Massachusetts, and probably several other locations. At this point, I can't help believing that in 1913 when the Stackpole book was compiled, the authors came into possession of a photograph labeled Wiswall Mill, and assumed that it was of the Durham paper mill* (Richard Lord, personal communication, November 10, 2010).

After Moses Wiggin died with outstanding debts in 1856, the mills, water rights, and paper mill lease along with 4-acres of land were auctioned in May 1857. Based on the description of the complex as provided in the auction announcement posted in the *Dover Enquirer*, the complex was composed of five primary structures including a 60-x-24-ft sawmill powered by two water turbines with a log haulway into the millpond; a 50-x-24-ft gristmill, also powered by two water turbines; the 80-x-30-ft paper mill; a 40-x-12-ft "planning [sic] and jointing" shed; and an 18–x–28-ft shingle shed. The advertisement also was careful to point out that the mills were 2.5 miles from Newmarket, one mile west of the line of the Boston & Maine Railroad, "and convenient of access by a good road." Thomas Wiswall and Howard Moses maintained occupancy of the mills immediately following Wiggin's death, and were able to purchase the property outright in July 1857.

The credit records of R. B. Dun & Company record the growing strength of the company, reporting in 1857 that Wiswall and Howard Moses were

> *both men of good standing and character: also men of enterprise. 'W' is about 40, married, has a family. 'Moses' about 26 and married; has a family also; the latter is in feeble health, but good business qualifications, and manages the business affairs of the firm. They own no real estate, and own no property outside that invested in their business. Their credit is good here. They have most of their bills discounted at the Newmarket Bank; they are doing a profitable business.*

Moses' "feeble health" appears to have been no overstatement, as he dies the following year at the age of 27. His duties then passed to his father, C.C.P. Moses, who served as the firm's junior partner until his death in 1883 (Stott 1988).

Despite the glowing reviews following the reorganization of the company, the financial panic of 1857 had a serious impact on the paper mill operations. The bankruptcy of a Boston business partner left Wiswall with mountains of debt, forcing him to "mortgage everything" and run "night and day… working off… Embarrassment" (Stott 1988). The tireless effort allowed Wiswall to quickly pay off his debts, and from 1859 until the mill burned in 1883 his credit reports consistently noted him as "one of the best of manufacturers. Honorable and Honest" (R.B. Dun & Company, February 28, 1859), and "A first rate businessman, scrupulous, honest, and punctual. Doing a capital business and no man's credit and standing are better than his" (R.B. Dun & Company, December 7, 1860).

Wiswall's increasing financial fortunes, however, were an anomaly in Durham by 1860. In that year, Durham's economic ranking had fallen to ninth place among all of the towns of Strafford County, a slow but steady decline from its fifth place position in 1830 (United States Census Department 1870). Much of this decline was attributable to the opening of the Boston & Maine Railroad in 1841. While the rail line provided excellent transportation access for Wiswall's paper mill, it bypassed the village center by a considerable distance and discouraged overall industrial investment in the town. The lack of commercial and industrial work forced many people to look elsewhere for employment and, as a consequence, the town lost population in every census year from 1830–1930. The 1860 Federal industrial census highlights the steeply declining industrial fortunes of Durham. Wiswall's mill, doing business at that time as "Pawtuckaway Mill," comprised the majority proportion of industry in the town of Durham, and a significant proportion of the wallpaper manufacturing in the state. On the local level, Wiswall's mill capitalization of $25,000 in 1860 represented 60 percent of the town's total, dwarfing the values of the one other sawmill and gristmill in town. Seven men and one woman were employed producing 2500 pounds of wallpaper per 24 hours, with an annual value of $30,000, about 50 percent of the total reported value of the town's manufactured products. The second mill, located in West Claremont, was the smaller of the two. W.W. Page and

John N. Coffin briefly ran a bookpaper and newsprint mill in Durham at Packer's Falls as of 1878, but this was a marginal and short-lived operation, likely reflecting the overall diminishment of industry in the town (Stott 1988).

In 1868, T.H. Wiswall & Company was sufficiently busy to justify an expansion of the mill complex. Wiswall constructed a new dam, lengthened the paper mill by 10 ft and an added an ell measuring 13-x-30 ft. Two turbines powered the mill machinery that consisted of five washers, two beaters, and a 48-inch cylinder machine. In 1870, census records reported that the mill employed seven men and one woman, and manufactured 309 tons of wallpaper valued at $30,000 (United States Census Department 1870). The new dam provided 9.5 ft head of water that powered six turbines in the three mills. By the 1870s, however, the available water power proved insufficient to operate multiple mills, so Wiswall converted the entire site over to paper manufacture, with a specialized emphasis on wallpaper. The grist mill operations were largely abandoned during this period, and the saw mill only operated three months of the year during periods of high water (Stott 1988). Throughout the 1870s and 1880s, several episodes of bridge repair and reinforcement are reported in the town reports, suggesting that the increased foot and wagon traffic encouraged by the success of the mill was substantial enough to put a continuing strain on the aging structure. At the same time that Wiswall expanded the plant facilities, "houses were erected for the workmen, and a store was kept by Austin Doeg" (Stackpole 1973:308–309).

Wiswall's business partner of 26 years, Charles Moses, passed away in 1883 and only several months later in November the mill complex was destroyed by fire. The *Dover Enquirer* reported that

> *the fire caught from a match among the dry stock and quickly communicated to all parts of the buildings… Mr. Wiswall at the time of writing places his loss at $25,000 with an insurance of $14,000. This is a great calamity to this town, as the firm lost its junior partner, Mr. C.C.P. Moses, only a few weeks ago, and Mr. Wiswall at this time of life will not feel like commencing business anew, as he must, if he attempts to rebuild. Eight men and five women were employed about the mills, besides much outside help.*

Facing bankruptcy, advancing age, and the loss of Moses, Wiswall did in fact disband the company and put the property up for sale the following month. At that time, the property consisted of the burned mill, six tenements, a private residence, and thirty acres of land. Thomas Wiswall was unable to find a buyer for the mill site and associated residential properties, so the surviving dam and sawmill were used by some of Wiswall's former employees on a small scale until both were damaged in a freshet in the spring of 1896. The 1892 Hurd map of the area, however, depicts the sawmill structure while the 1893 USGS map does not, suggesting that the sawmill may have been completely abandoned and/or demolished well before 1896.

In 1899, James Burnham bought the mill site and water power privileges from the then-retired Wiswall. Burnham organized the Newmarket Light, Heat, and Power Company by 1900 and built a small power station at the foot of the canal where the paper mill formerly stood. In 1912, the Newmarket Electric Company acquired the power plant and built a new concrete dam and head gate. Two years later, the aged bridge was rebuilt by the town, possibly in response to rising water levels. In 1930, the power plant ceased operation, and by 1941 the plant building was gone. Over the next several years the mill site property passed through state and private ownership until it was acquired by the town in 1965 for use in Durham's public water supply system. Since that time, the original mill site on the east bank of the river has been developed as the John Hatch Memorial Park, a cooperative effort among the Town, the Lamprey River Advisory Committee, and the National Park Service, and is a popular recreational spot for town residents.

The water-powered mill complex that operated at Wiswall Falls was one of the most important local-level economic engines to drive the Town of Durham's industrial development between 1835 and 1896, and its rise and decline provides a broadly comparable reflection of the rise and decline of the town itself. On a regional level, Wiggin's construction of a saw and grist/flour mill at the falls in 1835 illustrates the optimistic industrial spirit that characterized the second quarter of the nineteenth century, while at a local level it functioned to expand transportation routes and the residential center of the town beyond the nucleated settlement at Packer's Falls. With the expansion of the complex from 1854–1868 and the establishment of a thriving paper mill, the T.H. Wiswall & Company/Pawtuckaway Mill provided Durham with a prominent industrial profile, but perhaps more importantly allowed the town to weather its generally declining financial fortunes precipitated by the unfavorable siting of the Boston & Maine Railroad. The steady employment of an average of

15 individuals over the course of 30 years was not an insignificant contribution to the economic stability of Durham at a time when many families were leaving the town to look for work in other towns or states. Similarly, the substantial capitalization of the mills as documented in the industrial censuses of 1850–1880 illustrates the revenue value of the complex to the town in the face of an ever-declining tax base.

Wiswall's construction of worker housing and a local store at the falls by 1868 also formed the nucleus of what would become a small-scale factory village, one in which the day-to-day industrial, commercial, and residential operations of the complex were both overseen and underwritten by a single business interest. While far smaller than the working-class factory towns that sprang up around the massive complexes of Boott Mills in Lowell, Massachusetts, and Amoskeag in Manchester, New Hampshire, and almost certainly lacking in the behavioral restrictions and paternalistic ideologies of "moral improvement" that underlay the management of those towns, the dominant economic position that the mills held in Durham no doubt invested Wiswall with a certain amount of economic and social control. The Wiswall Falls Mill Site provided the capital to build and implement this influence, and its surviving physical footprint is an example of the importance of local mill complexes, whatever their size, to the physical, social, and economic character of a town (Larkin 1988:54–58).

CRITERION D – ARCHAEOLOGY, HISTORIC/NON-ABORIGINAL

Despite a brief overlying period of use as a small-scale hydroelectric facility, the Wiswall Falls Mill site remains substantively intact and possesses the realized and potential ability to contribute important information about the form and function of a nineteenth-century water-powered mill complex. Rural mill sites, without the benefit of fire insurance surveys or other detailed plans, are extremely difficult to interpret in the absence of documentary evidence that might provide data about the equipment, construction, and operation of the mills. Despite the fact that tens of thousands of these mills were reported in the federal census by the mid nineteenth century (Hunter 1979), very few survive on the modern landscape as either standing structures or interpretable ruins. The significance of the Wiswall Falls Mill Site, therefore, lies in its integrity of location, design, and setting that has the potential to provide data on the physical evolution and joint operations of three functionally and temporally discrete water-powered mills in operation for most of the nineteenth century (Stott 1988).

As detailed above, the Wiswall Falls Mill Site has been the subject of six (6) archaeological/research projects over the course of 26 years. That work has been instrumental in delineating the broad structural outlines of the 1835–1883 milling operations, but because much of it was conducted under Section 106 at specific project impact locations, the subsurface investigations have been targeted along a fairly narrow corridor east of the power canal between the 1912 flood gate and the paper mill foundation. Those results nonetheless have been critical in characterizing the nature and extent of fill deposits in that portion of the site, and have identified foundation remains associated with two structures (planing and jointing and shingle sheds) that are otherwise not clearly visible on the ground surface (Maymon and Bolian 1985, 1986). The 2011 monitoring work also appears to have identified the raceway associated with Wiggin's ca. 1835 sawmill, and provided data clarifying the construction and configuration of that building (PAL 2011 – see Section 7).

The piecemeal testing approach, however, has resulted in some misinterpretations of the site, including the possible conflation of Structures 7 and 13, the misidentification of the office building for the shingle shed, the misidentification of the bridge crossing for a building foundation, and the omission of Structure 11 as a contributing feature. These issues are attributable to the lack of a systematic, site-wide testing methodology and, perhaps, to an over-reliance on the 1857 auction posting and the 1880 photograph of the complex as corroborative, rather than comparative, primary source materials. More comprehensive subsurface survey has the potential to better delineate the dimensions of the former known mill structures and identify any previously undocumented buildings that might shed light on the functional evolution of the complex. For example, although much of the power supply for the paper mill is visible in Structure 1, very little is known about the supply of the saw and grist power system. While the original raceway for the sawmill was provisionally identified during the 2011 monitoring, how it would have articulated with Structure 10 is unclear, as is the actual size and shape of the grist/flour mill. Additional research has the potential not only to provide data with which to answer those questions, but to provide information about previously undocumented resources associated with Wiggin's initial development of the site, especially that portion west of the power canal that is not shown in the ca. 1880 photograph upon which so much earlier research has been dependent. A comparative analysis of the surviving structural remains also could

yield information on changing stone cutting and masonry techniques and quarrying practices during the nineteenth century (Preservation Company 2008; Stott 1988).

Finally, the Wiswall Falls Mill Site also has the potential to provide data about the operation of a smaller, water-powered mill site in southern New Hampshire for comparative use with other similar sites in the area. Closely comparable to the Wiswall Falls Mill Site is the former complex at Packer's Falls that, to date, has not been documented by historic or archaeological survey. This complex, similarly important to the industrial history of Durham, comprises a series of stone foundations along the river below the bridge. The original mills at Packer's Falls date from the late 1600s, were expanded in the 1770s, and later owned by the Newmarket Manufacturing Company which operated a machine shop there as of 1871. A close comparison of the structural and functional organization of the Wiswall Falls complex with the Packer's Falls complex may provide specific insights into the former's eventual economic dominance over the latter, as well as more general insights into the variables that precipitated the rise and fall of small-scale, water-powered mill complexes over time.

Developmental history/additional historic context information (if appropriate)

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____preliminary determination of individual listing (36 CFR 67 has been requested)
__X__previously listed in the National Register
____previously determined eligible by the National Register
____designated a National Historic Landmark
____recorded by Historic American Buildings Survey #_____
____recorded by Historic American Engineering Record # _____
____recorded by Historic American Landscape Survey # _____

Primary location of additional data:

__X__State Historic Preservation Office
____Other State agency
____Federal agency
____Local government
____University
____Other
Name of repository: New Hampshire Division of Historical Resources

Historic Resources Survey Number (if assigned): _____

10. Geographical Data

Acreage of Property _____
(Do not include previously listed resource acreage.)

UTM References
(Place additional UTM references on a continuation sheet.)

	Zone	Easting	Northing		Zone	Easting	Northing
1	19	1172204.5888	221103.3955	3	19	1172350.1834	220627.3257
2	19	1172505.5238	221160.8546	4	19	1172587.3120	220776.2495

Verbal Boundary Description (Describe the boundaries of the property.)

The boundary of the nominated property is provided on the accompanying site map (see attached).

Boundary Justification (Explain why the boundaries were selected.)

The major portion of the nominated property is the 2.5-acre parcel owned by the Town of Durham on the east side of the Lamprey River as depicted on the Assessors Map 17/Block 7, and containing Structures 1–7, 10, and 12–13. A 50-ft wide parcel extending north–south from Wiswall Road to the transmission line easement expands the east boundary of the site into privately-owned Block 8 to incorporate Structures 8 and 9, and an approximately 15-ft wide and 180-ft long parcel stretching across the Lamprey River, also in Block 7, expands the boundary to the west to incorporate the remains of Structure 11.

11. Form Prepared By

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