A partial portfolio of

I.W. Jones Engineers

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Demopolis, AL

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I recently purchased a copy of Milton and the New Hampshire Farm Museum by Sarah Ricker. I was looking for historical information on Spaulding Fibre Company (AKA: J Spaulding & Sons Company) in Milton and North Rochester, NH. I only found two references. One was on page 63 under a photograph depicting rapid water in the flume. The other could have been easily missed. It was a photograph of a group of men under a sign “I.W. Jones.Eng” shown here as Figure 1. It was on the second page of the book opposite the title page. If I had not visited the Spaulding mills in North Rochester and Milton in May of 2009 its mysterious caption would not have
provided another link in my historical knowledge of the Spaulding Fibre Company.

Figure 2 Photograph of plaque on J Spaulding & Sons’ mill wheel masonry

On my visit to Spaulding’s North Rochester mill I met Tom Cusano of SAI (Spaulding Avenue Industrial Complex). SAI at that time was leasing space to others in the former Spaulding Fibre North Rochester plant for storage and was trying to resurrect the mill wheel to drive an electrical generator. Tom showed a plaque on the mill wheel masonry to me which I photographed and is shown here as Figure 2. Clearly I.W. Jones Eng’r was the firm that designed the dam, mill run, mill wheel, mill race, and possibly the mill building in 1899-1900 at the North Rochester Spaulding mill. They were proud enough of their work to place a bronze plaque on the finished masonry of the mill wheel structure that is still there 110 years later.
Some Answers

My curiosity got me to google I.W. Jones. As a result I found a portfolio of a half a dozen projects done by the firm and about a half a dozen individuals that at sometime had claimed I.W.Jones as an employer in a resume or alumni publication. From these searches I found the principal of the firm’s first name was Ira and was able to find some family information from census records.

Ira W. Jones was born in Milton, NH on June 10, 1854. His father’s name was George H. (1826 – after 1910) Jones and his mother was Lucy Jane Varney (1827 – 1897). Ira had an older sister Addie V. (1848 - ?), an older brother Charles A (1852 - ?), and a younger sister Nettie J. (1863 - ?). In the 1870 US Census Ira and his brother Charles are shown as working on their father George’s farm in Milton, NH. However, in the 1880 census while Charles is still shown as working on the farm, Ira’s occupation at 25 years of age was shown as “sets water wheels.” In the next available census 1900, Ira is now living in Lebanon, ME which is across the Salmon Falls River from Milton, NH. He had married Lucia C Wentworth in 1887 and had two children Nettie age 13 and Mary age 8 at the time of the 1900 census. Ira’s occupation was listed as hydraulic engineer in 1900.

Ira W. Jones’ formal education began in the public schools in South Milton, NH. He graduated from Milton High School and went to Boston, MA and studied drafting at Starr King Drawing School. After completing at Starr King, Ira Jones spent 3 additional years in Boston making patterns and models. He then spent four years learning the millwright trade before spending a year and a half with a Worcester, MA machinery manufacturer as a machinist and draftsman. For the next 13½ years from about 1887 to 1900 I.W. Jones worked selling equipment from machinery manufacturers in Dayton, Ohio and Worcester, MA. Around 1900 I.W. Jones founded an engineering and consulting firm that employed 10 to 15 engineers. The offices of I.W. Jones Engineers were on Main Street in Milton, NH. The firm specialized in dams, water wheels and turbines, mill buildings and hydroelectric plants and undertook contracts all over New England, the southern states and Canada.
The first project for which I have proof is the dam and turbine installed for J Spaulding & Sons at North Rochester, NH. Proof of the 1899 - 1900 project is shown in Figure 2. Also Ruth Howland wrote a historical article about it.\textsuperscript{4} I suspect that I.W. Jones may have earlier helped Jonas Spaulding’s first venture in leatherboard manufacture in Milton, NH. That project involved the refit of the old Tuttle shingle mill to make leatherboard. The farm of George H Jones, Ira Jones’ father, is close by the Tuttle shingle mill. That conversion project was initiated in 1890 and completed in 1893. It seems likely that during this time that the Spauldings became acquainted with Ira Jones of Milton, NH.

The best documented project of I.W. Jones Engineers was the design and construction of the Milton Leatherboard Company mill in Milton, NH. Documentation of that project can be found when googled on the web in articles published in Concrete-Cement Age\textsuperscript{5} and Engineering & Contracting\textsuperscript{8}. Photographs and plans from those articles are reproduced here in Figures 3, 4, 5 and 6. I.W. Jones had clearly obtained knowledge of leatherboard factory design working on the 1899 – 1900 Spaulding project at North Rochester.
and possibly the Spaulding refit of the Tuttle shingle mill to make leatherboard in the 1890 – 1893 project at Milton, NH. That experience along with the newer technology of reinforced concrete was put into the Milton Leatherboard Company mill project in 1911 – 1912.

A feature of the project to build Milton Leatherboard Company mill in Milton, NH was the use of reinforced concrete to form the Hollander beater tubs. The plans for these beater tubs are shown in Figure 5 and Figure 6 and a picture is shown in Figure 7. This use of reinforced concrete in beater tubs seems to be very ground breaker for the time and so it was documented in two magazine articles. In my early experience in the paper industry I came in contact with several materials used to form Hollander beater tubs. Materials used were wood, cast iron, interior ceramic tile lined cast iron, and ceramic tile formed concrete. I observed wood and cast iron in use in beater tubs during the summers of 1964 and 1965 when I was employed by Spaulding Fibre at their Wheeler Street plant in Tonawanda, NY. The tile lined cast iron tub was in use at the College of Forestry at Syracuse University when I was a student there from 1964 to 1968. When I started work at Union Camp in
Franklin, VA in 1968 they used concrete filled ceramic formed beater tubs on No. 1, No. 2, and No. 3 paper machines to beat back (repulp) machine broke from those machines. It was the memory of the Union Camp beater tubs that removed the initial sense of oddity I felt about reinforced concrete being used for making beater tubs.

Figure 5 Plan and Section Views of the Concrete Hollander Beater Tubs Constructed for the Milton Leatherboard Company7 8
Figure 6 Section Detail of the Concrete Hollander Beater Tub Rail Constructed for the Milton Leatherboard Company\textsuperscript{9,10}

Figure 7 Photograph of Reinforced Concrete Beater Tubs\textsuperscript{11}
Other projects that I have identified with Google searches are listed in Table 1. They clearly support the statement in Strafford County History [3] that I W Jones Engineers had projects all over New England. Table 1 shows projects in Maine, New Hampshire, Vermont, and Massachusetts. My Google searches have not identified specific I W Jones projects in Canada. One projected designed by IW Jones at Lockhart in South Carolina is listed in the table. It is quite likely others in Canada and the Southern United States exist as Table 1 makes clear that I W Jones designs were frequently executed by Aberthaw Construction Company of Boston, MA. This relationship seems particularly strong when reinforced concrete construction was used. In the early 20th Century Aberthaw Construction Company was noted for the efficient and systematic methods of erecting reinforced concrete structures. They did many paper mill and textile mill projects in New England at the turn of the century and subsequently many textile mills in the South as mill operators turned investment there seeking additional sources of hydro power and cheap labor. I W Jones and Aberthaw could have both served their New England clients when they expanded their operations into the South.

In 1911 and 1912 when Aberthaw was building the Tonawanda, NY fibre mill for J. Spaulding & Sons Company, they were also building 576’ x 102 plan 10 stories high storage warehouse for the Larkin Company in Buffalo, NY. It was known as the Larkin Co. R.R. Terminal Warehouse. The Larkin Warehouse survives after extensive renovations in 2002 by City View Properties’ Larkin at Exchange now is a 10 story office building offering office space to tenants who want an urban campus setting.
Figure 8 Lockhart Power Company Power House at Lockhart, SC as it Appeared circa 2010

Figure 9: Lockhart Power Company Power House Entrance Showing Construction Date of 1920
<table>
<thead>
<tr>
<th>Date</th>
<th>Client</th>
<th>Location</th>
<th>Construction Contractor</th>
<th>Scope of Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>1899 - 1900</td>
<td>J Spaulding &amp; Sons Co (AKA Spaulding Fibre)</td>
<td>North Rochester, NH</td>
<td>Unknown</td>
<td>Dam, Run, Race, Mill Wheel/Turbine, Mill Building for Leatherboard</td>
</tr>
<tr>
<td>1906</td>
<td>Passumpsic Fiber Leather Co.</td>
<td>Passumpsic, VT</td>
<td>Stephen and Theodore Chase (Owners)</td>
<td>Reinforced concrete Leatherboard Mill, and flumes¹³</td>
</tr>
<tr>
<td>1907</td>
<td>Androscoggin Pulp Co.</td>
<td>South Windham, ME</td>
<td>Aberthaw Construction Company, Boston, MA</td>
<td>Pulp Factory¹⁴</td>
</tr>
<tr>
<td>1910 - 1920</td>
<td>Lockhart Mills</td>
<td>Lockhart Shoals, SC</td>
<td>Unknown</td>
<td>Hydroelectric Power Plant</td>
</tr>
<tr>
<td>1911 - 1912</td>
<td>Milton Leatherboard Company</td>
<td>Milton, NH</td>
<td>Aberthaw Construction Company, Boston, MA</td>
<td>Reinforced Concrete Dam, Run, Race, Mill Wheel/Turbine, Mill Building for Leatherboard</td>
</tr>
<tr>
<td>Date</td>
<td>Client</td>
<td>Location</td>
<td>Contractor or Details</td>
<td>Scope of Project</td>
</tr>
<tr>
<td>-------</td>
<td>-------------------------</td>
<td>---------------------------</td>
<td>----------------------------------------------------------------</td>
<td>-------------------------------------------------------</td>
</tr>
<tr>
<td>1912</td>
<td>Cabot Mfg Co</td>
<td>Topsham, ME</td>
<td>Aberthaw Construction Company, Boston, MA</td>
<td>Reinforced Concrete Paper Mill, Dam, forebays, and flumes</td>
</tr>
<tr>
<td>1916</td>
<td>Groton Leatherboard Co.</td>
<td>Gorton, MA</td>
<td>Unknown</td>
<td>Dam, Run, Race, Mill Wheel/Turbine, Mill Building for Leatherboard</td>
</tr>
<tr>
<td>1916</td>
<td>Swanton, VT</td>
<td>Highgate Fall on Missisquoi River</td>
<td>Unknown</td>
<td>Dam and Hydroelectric Power Station for Swanton, VT</td>
</tr>
<tr>
<td>1918</td>
<td>Lockwood Co.</td>
<td>Waterville, ME</td>
<td>Plans announced</td>
<td>One Story Hydroelectric Power Plant</td>
</tr>
<tr>
<td>1929</td>
<td>South Tamworth Industries</td>
<td>Tamworth, NH</td>
<td>Unknown</td>
<td>Ambursen Dam for Saw Mill</td>
</tr>
<tr>
<td>Name</td>
<td>Title / Position</td>
<td>Years of Known Association</td>
<td>Education</td>
<td>Source</td>
</tr>
<tr>
<td>---------------------------</td>
<td>------------------------</td>
<td>----------------------------</td>
<td>----------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Ira W. Jones</td>
<td>Principal</td>
<td>1900 - retirement</td>
<td>As described in text</td>
<td>Various</td>
</tr>
<tr>
<td>Stephen Everett. Preble</td>
<td>Inspector</td>
<td>1904-1920</td>
<td></td>
<td>19  20</td>
</tr>
<tr>
<td>Patrick. Edward. McCarthy</td>
<td>Field Engineer</td>
<td>1903-1904</td>
<td>University of Maine 1902 Civil Engineer</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>Hydraulic Engineer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Edward Augustus Wright</td>
<td>Structural Draftsman</td>
<td>1913</td>
<td>International Correspondence Schools</td>
<td>22</td>
</tr>
<tr>
<td>Alexander Hugh Reid</td>
<td>Draftsman</td>
<td>1912</td>
<td>Worcester Polytechnic Institute Mechanical Engineer 1911</td>
<td>23</td>
</tr>
<tr>
<td>Stephen H. Smith</td>
<td>Chief Engineer</td>
<td>1923-1924</td>
<td>Cornell University 1913 Civil Engineer</td>
<td>24  25</td>
</tr>
<tr>
<td>Robert Clare Gammon</td>
<td>Consulting Engineer</td>
<td>1904 - 1908</td>
<td>Tufts College 1904 BS</td>
<td>26</td>
</tr>
<tr>
<td>Seth Augustine Moulton</td>
<td>Chief Engineer</td>
<td>1900 - 1909</td>
<td>Brown University</td>
<td>27</td>
</tr>
<tr>
<td>Name</td>
<td>Title / Position</td>
<td>Years of Known Association</td>
<td>Education</td>
<td>Source</td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------------------------------</td>
<td>----------------------------</td>
<td>------------------------------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>George Leonard Freeman</td>
<td>Draftsman</td>
<td>1903 - 1904</td>
<td>University of Maine</td>
<td>28</td>
</tr>
<tr>
<td>Walter Irving Barrows</td>
<td>Reinforced Concrete Design Engineer</td>
<td>1909-1920</td>
<td>Worcester Polytechnic Institute Civil Engineer 1909</td>
<td>29 30</td>
</tr>
<tr>
<td>Bryant Harland Moore</td>
<td>Design Engineer</td>
<td>1927</td>
<td></td>
<td>31</td>
</tr>
</tbody>
</table>
Although Aberthaw built the initial J Spaulding & Sons Company (AKA Spaulding Fibre Company) mill in Tonawanda, NY, I have not been able to determine if IW Jones Engineers designed the structure. Clearly Table 1 shows that IW Jones Engineers was involved building four leatherboard mills: North Rochester, NH in 1900, Passumpsic VT in 1906, Milton, NH in 1911, and Groton, MA in 1916. There are similarities in building appearance between Milton Leatherboard Company Mill pictured in figure 3 and the initial mill building façade in Tonawanda shown in Figure 10, that lead me to wonder if IW Jones had

Figure 10  Tonawanda factory of J. Spaulding & Sons Company  
Circa 1915

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designed the initial Tonawanda mill. However, the similarity may just be that both buildings are designed in the then prevalent “daylight factory” style that developed around the use of reinforced concrete for factory construction. In the daylight factory style the skeletal structure of vertical supports and horizontal floor slabs made of reinforced concrete are exposed to view on the exterior. The exterior boxes made by vertical columns and slab floors were repeatedly filled with brick spandrels and steel sash windows that admitted ample light and allowed ventilation. It would be interesting to know if Spauldings used IW Jones Engineers to design their Tonawanda mill in 1911 & 1912 or if IW Jones was busy with the Milton Leatherboard project. It is possible that Jones and Spauldings could have fallen out over Jones building mills for competitors in the Leatherboard business. I know that by the 1920s Spauldings were using George F Hardy Engineer, 309 Broadway, New York, NY to design expansions of the Tonawanda Mill. Also, it would be interesting to know if either IW Jones Engineers or Aberthaw Construction Company were involved in the building of J
Spaulding and Sons No.2 leatherboard mill in Milton, NH. At the time it was built, Spauldings’ No. 2 Mill in Milton was touted as being the tallest reinforced concrete structure in NH.

IW Jones Engineers were clearly involved in building leatherboard mills on mill streams. Pictures of Jones’ design for the Passumpsic Fiber Leather Company are shown in figures 11 and 12. These images were published in the October 1906 Cement Age [27]. A unique feature of the Passumpsic Fiber Leather Company project was that the owners of the firm acted as the construction management for the reinforced concrete construction.

In 1916 IW Jones also designed the Groton Leatherboard Company mill at Groton, MA. This mill is downstream from the first Spaulding Leatherboard mill at Townsend Harbor, MA on the Squannacook River. The Groton Leatherboard Company mill was added to the National Register of Historic Places on April 18, 2002. The mill building has been converted into an assisted living facility [35].

Also in 1916 IW Jones Engineers designed and built a Dam and Power Plant at Highgate Fall on Missisquoi River for the village of Swanton, VT. Construction of the project was completed in 1918. The dam and hydroelectric plant at this site is still actively producing power for the villages of Swanton and Highgate to this time.

In 1918 the Lockwood Company, a cotton mill, on the Kennebec River at Waterville, Maine engaged I W Jones Engineers of Milton, New Hampshire to design a hydroelectric power plant adjacent to their mills there. There is an active hydroelectric plant at the site as pictured in Figures 13 and 14. Although the Lockwood Company cotton mill at Waterville closed in 1955, the power station has continued to generate and sell electricity to the region. Recently the plant has come under pressure from environmental groups when applying for relicensing of the facility by the Federal Energy Regulatory Commission.
Environmentalists see the plant as preventing salmon, herring and shad from taking their migratory spawning run further up the Kennebec River. Until recently migratory fish had been blocked by the Edwards Dam further downstream on the Kennebec River. With the removal of the Edwards Dam, the environmentalists see the Lockwood Dam as the next domino to fall in order to restore these rivers to a more natural state for the benefit of migratory fish, kayakers, and canoeists. When I compare Figure 13 the power plant at Waterville, Maine and Figure 8 the power plant at Lockhart, South Carolina, I see a great deal of similarity in design that confirms I. W. Jones Engineers designed both plants. An article in the August 1919 *Successful Methods* shows techniques used for building the project while noting I W Jones Company of Milton, NH were the design engineers and Sanders Engineering Co. of Portland, ME were the general contractors for the construction. \(^{36}\)
Figure 13 Lockwood Hydroelectric Power Plant at Waterville, Maine on the Kennebec River

Figure 14 Aerial View of Lockwood Dam and Hydroelectric Power Plant at Waterville, Maine on the Kennebec River
In 1929 IW Jones Engineers built an Ambursen (buttress) Dam for South Tamworth Industries on the Bearcamp River. It replaced an earlier plank dam located 20 feet upstream from the new dam and was 231 feet long, 16 feet high and had a spillway 125 feet long. Initial design of the dam was made by MIT Professor W.A. Liddell for college friend Albert Farwell Bemis (1870-1936) of the Bemis Bag Company fortune. Bemis, a Bostonian, had begun summering in Tamworth in 1911. When local businesses, Mason’s Sawmill and Bartlett Rake Factory, in the area at South Tamworth were failing in 1922 and 1924, A. Farwell Bemis bought them. Bemis used Mason’s mill to further his interest in the Arts and Crafts movement and to test his theories in prefabricated housing construction. South Tamworth Industries, originally called Bemis Industries, attempted operate on the Arts and Crafts ideals of cooperative labor, importance of labor, and use of local natural materials and traditional techniques. South Tamworth Industries made prefabricated housing units, children’s furniture, and wooden (German style)
toys. In 1929 a disaster befell South Tamworth Industries when the old timber dam burst. Bemis took the opportunity to replace the dam and the original Mason’s Sawmill. The new dam engineered by IW Jones to specifications from WA Liddell included reinforced concrete abutments on each end and eleven reinforced concrete buttresses on 12 foot centers. The face of the dam in buttressed area was made of 10” by 10” timber planking. South Tamworth Industries operated the Bearcamp River Dam from 1929 until 1943. In 1943 a fire originating in the dry kilns eventually engulfed and destroyed the industrial buildings on the site. A. F Bemis had died in 1936 and as a result South Tamworth Industries was never rebuilt. Although conversion of the dam to hydroelectricity production was considered on several occasions in subsequent years by subsequent owners, those schemes never came to fruition. Through the years the dam fell into disrepair with timber planks and buttress failing and wood debris piling up on the buttresses. In 2003 the dam was removed to improve public safety and improve the range of the run of landlocked salmon from Lake Ossipee in the Bearcamp River.

Figure 16 South Tamworth Industries Dam on Bearcamp River before Removal in 2003
I W Jones Engineers Professional Staff

I have not been able to definitely identify the seven individuals in Figure 1. But as I did my on line search for IW Jones Engineers, eleven (11) individuals associated with the firm were identified as listed in Table 2. At the top of the list is Ira W. Jones, the principle of the firm. At the suspected time when the picture in Figure 1 was taken (circa 1905) Ira Jones would have been 50 years old. Assuming Ira is in Figure 1 the gentleman in the center with bowler hat, mustache, glasses and tie would most likely be him. I also considered the fellow at the right of the Figure 1 picture with the slouch hat, glasses mustache, coat and tie, and cigar as potentially being Ira Jones. However I believe that man to be Seth Augustine Moulton. A third individual I may have identified in Figure 1 is Patrick Edward McCarthy. I believe he is the fellow with black shirt, white suspenders, and no tie. I have not managed to hazard an identification of the other four fellows in the Figure 1 picture. Allowing ±5 years around 1905 and examining Table 2 the following individuals are candidates for being in the Figure 1 picture: Stephen E. Preble, Robert Clark Gammon, George Leonard Freeman, and Walter Irving Barrows.

Seth Augustine Moulton joined I. W Jones Engineers in 1900 about the time the firm was started and at the time of the commissioning of the new J Spaulding & Sons factory at North Rochester, NH. In the US census of 1900 a record shows that he was boarding with Simon and Frances Wentworth in Rochester, NH. Seth’s occupation was shown as draftsman in the census record. Coincidently Huntley and Rolland Spaulding were also shown as boarding with the Wentworths too. Seth Moulton was born in Lowell, MA on October 13, 1875. His father was Charles Edson Moulton (1841-1905) a native of Framingham, MA and knowledgeable of mining. Charles Edson died in Mexico while consulting there in 1905. His mother was Clara Alice Russ (1847 – 1930) of Lowell, MA. She died at the Madison Home, a home for civil war veteran widows, in Madison, Lake County, Ohio on October 3, 1930 at the age of 83. Seth Moulton was educated in
the public schools of Worcester, MA and at Brown University at Providence, RI. He graduated from Brown with a degree in engineering and the fine arts. He started his working career at

Figure 17 Photo Portrait and Signature of Seth A Moulton

I W Jones Engineers in 1900 as a draftsman. In 1903 he married Elfrida Mabel Peacock (1881 – 1961) of Riverside, ME. They had two children Lorna Augustine (1904 – 1942) and Olena Ria (1906 – 1998). Seth left I W Jones where he had been lastly titled chief engineer to become a partner in Sawyer and Moulton, consulting engineers, of Portland, ME in 1909. In 1914 he became the principal of the Moulton Engineering Corporation of Portland, ME and New York, NY. On November 1, 1927 the
Moulton’s younger daughter Olena Ria married Burton Melvin Cross Jr. (1902 – 1998) in Brunswick, Cumberland County, ME. Burton would serve as Maine’s 61st governor from 1953 – 1955. In the 1930 US Census Seth, Elfrida, and their eldest daughter Lorna were living at the Lil Mar Apartments in Los Angeles, CA. Lorna Moulton died on April 8, 1942 in Los Angeles, CA at the age of 38. Seth A. Moulton died in Augusta, Kennebec County, Maine on June 20th 1945 at age 69. His wife Elfrida lived to be 88 passing on December 3rd 1969 also at Augusta, ME.

Stephen Everett Preble was employed by I W Jones Engineers from 1904 until 1920. He was born in Portsmouth, NH on January 27, 1885 the son of Stephen Augustus Preble (1845 – 1912) and Lucy J Mudge (1850 – after 1920). He married Jessie Atherton Calkins on September 5, 1904. They had four children: Eglantine, Vida, Stephen, and Barbara. In 1920 the family moved to the Buffalo, NY area eventually settling in Orchard Park. Stephen had gone to Buffalo to be vice-president and general manager of the Industrial Planning Corporation, 80 West Genesee Street, Buffalo, N. Y. Around 1940 Stephen became the Village Engineer for the Village of Orchard Park. He died at Orchard Park, NY in July 1973. His wife Jessie survived him living in Orchard Park until she died in June of 1976 at age of 90.

Walter Irving Barrows was born on March 25, 1887. He was the son of William E and Eleanor W. Barrows. They lived in Worcester, MA. Walter graduated from Worcester High School. He went to college at Worcester Polytechnic and in 1909 was conferred a degree in Civil Engineering. After college graduation in 1909 he joined I W Jones Engineers in Milton, N H. Walter Barrows married Lucy Marjorie Hill on July 1, 1910 in Fair Haven, NY. W I Barrows stated in his 1911 notes to the Worcester Polytechnic Alumni Association that he had recently married Marjorie Hill and that he was working on “plans and estimates for a Hydro-electric power-plant at Lockhart Shoals, SC.” Barrows stayed with I W Jones Engineers through 1920. This resulted in his three children Ruth, Robert, and Marjory all being born in New Hampshire. Staying at I W Jones through
1920 also allowed Walter to see his initial work effort come to fruition as shown in figures 8 and 9. In 1920 Walter Barrows moved his family to Dayton, Ohio where he worked for the Management Engineering and Development Company\textsuperscript{40}. Walter Barrows died January 24, 1971 at the Kettering Medical Center, Kettering, Ohio.

Figure 18 Patrick Edward McCarthy (1878 – 1934)\textsuperscript{41}

Patrick Edward McCarthy worked only briefly for I W Jones in 1903 and 1904 as published in Paper magazine\textsuperscript{42}. He had been born in Lewiston, Androscoggin, Maine on December 12, 1878 to Irish immigrant parents John McCarthy and his wife Catherine Agnes Kelleher. He grew up in Lewiston attending public schools and matriculated at the University of Maine. He graduated from the University of Maine in 1902 with a BS degree in Civil Engineering. He worked for I W Jones in the capacity of field and hydraulic engineer before leaving to join International Paper as a construction engineer in 1904. He married Melvina Leona Latham on April 25, 1905 in Jay, Androscoggin, Maine. Melvina was the daughter of George W. and Martha Ada Latham of Jay. Melvina and Patrick had four children John, Marion, Melvina and Frances. P. E. McCarthy was promoted to resident
George Leonard Freeman was born in Gray, Cumberland County, Maine on September 6th 1880. He was the son of George Henry Freeman (1840 – 1915), a farmer, and Georgia Knapp (1849 – 1943). In 1897 G. L Freeman was attending school at the University of Maine where he became a member of the Psi chapter of Kappa Sigma Fraternity. At the time of the census of 1900 he was boarding at the Hotel of Herbert M Gates in Lincoln, Penobscot County, Maine while working as a draftsman in the area. In 1903 he graduated from the University of Maine with a BS in Civil Engineering. He started working for IW Jones that year. On February 4th 1904 he married Annie Blanche Kimball of Milton, NH in that place. Annie was the daughter of Ralph Mansur Kimball (1859 – 1922), a leatherboard worker, and Carrie Emma Wiley (1866 – 1946). George and Annie had four children Emily, Alice Kimball, Barbara, and George Leonard Jr. In 1910 the census showed the family living in Portland, Cumberland, Maine and George’s occupation was listed as Civil Engineer. In 1914 He was then working as Chief Engineer for Sawyer and Moulton in Portland Maine. Annie Blanche Kimball Freeman died July 14th 1925 in New York, New York. George L Freeman married again. He married Ethelyn Eugenie Cole in Portland, Maine. Ethelyn had been born on September 17th 1883 at Sebago Lake to Henry A Cole (1860 – before 1893) and Mary O Lane (1858 – 1930). They lived in Mount Vernon, Westchester County, New York through the 1930 Census. Ethelyn died in Portland, Cumberland County, Maine on the 2nd of September 1960 at the age of 76. George died five years later on July 12th 1965 at the age of 84 also in Portland. George L. Freeman 1903 was recognized by the University through election to its Engineers’ Hall of Fame.
Robert Clarke Gammon was born in Lynn, Essex County, Massachusetts, in October 1880 to George A. and Elvira R Gammon. Robert graduated Tufts College in 1904 with a BS in Engineering. He worked for IW Jones for a few years around 1904 to 1908. He married Florence J (maiden last name unknown) in 1907. Census records in 1910 show Robert and Florence lodging with Widow Emma A Hay in Lynn, Essex County, Massachusetts. The Gammons are found apartment living in Detroit, Wayne County, Michigan in 1920 and 1930 Census records. In none of the census records are Robert and Florence shown as having children.

Other associates of IW Jones Engineers listed in Table 2 were not researched since their activities with the firm occurred after the estimated date of the Figure 1 photo of 1905 ±5 years. Following up on IW Jones his engineering firm was active into the 1930s as shown by the project at South Tamworth Industries at about that time. Ira Jones was 76 years old in 1930. Some time after 1930 Ira Jones retired. A Portsmouth Journal front page article on April 2\textsuperscript{nd} 1938 titled “Rochester Section Is Shaken By Earthquake” had the following passage “Ira W Jones, a retired civil engineer at Milton expressed the opinion that “a meteor had fallen and exploded.”” Ira would have been about 84 years old at the time. IW Jones died on April 17\textsuperscript{th} 1946 at the age of 91 as reported in the Rochester Courier of April 25\textsuperscript{th}, 1946 on page1. His wife of 59 years Lucia C Wentworth dies 3 years later on September 3\textsuperscript{rd} 1949 at the age of 82.

The Engineers of IW Jones firm impacted projects all over the United States both when they were with IW Jones and in subsequent endeavors after their association ended.
Figure 19 South Tamworth Industries Dam on Bearcamp River during Removal in 2003

References

2 James M. Snyder; May 2009
3 History of Strafford County New Hampshire and Representative Citizens; John Scales, Editor Dover Daily Democrat; Published by Richmond - Arnold Publishing Co.; F. J. Richmond Pres. & C. R. Arnold Sec. and Treas.; Chicago, IL; 1914; pp877-878.
5 “Reinforced Concrete in Factory Construction – Some Details of Mill and Dam Work in Reinforced Concrete at Milton, NH”; Concrete-Cement Age; July 1913, p5.
6 “Reinforced Concrete in Factory Construction – Some Details of Mill and Dam Work in Reinforced Concrete at Milton, NH”; Concrete-Cement Age; July 1913, p3.
7 “Reinforced Concrete in Factory Construction – Some Details of Mill and Dam Work in Reinforced Concrete at Milton, NH”; Concrete-Cement Age; July 1913, pp4-5.
9 Reinforced Concrete in Factory Construction – Some Details of Mill and Dam Work in Reinforced Concrete at Milton, NH”; Concrete-Cement Age; July 1913, p5.
10 I W Jones, Engineer, Milton, NH; “Reinforced Concrete Beating Engine Tubs, Milton Leatherboard Co. Mills;” Engineering & Contracting; Vol. XXXIX: No. 13; March 26, 1913; p 359.
11 Reinforced Concrete in Factory Construction – Some Details of Mill and Dam Work in Reinforced Concrete at Milton, NH”; Concrete-Cement Age; July 1913, pp 4
12 From Lockhart Power Company Web Page
13 “Concrete in Factory Construction;” E. A. Trego; Cement Age; Vol. III, No. 5; October 1906; pp 302 - 303.
14 “Reinforced Concrete Structures for Manufacturing Purposes;” Leonard C. Watson; Engineering Magazine; Vol. XXXIII, No.3; June 1907; p401.
15 “Construction Methods on a Reinforced Concrete Paper Mill and Dam,” Cement and Engineering News; William Seafert, Editor and Publisher; Chicago, IL; January 1912 p24.
16 “Problems Cities are Studying with Experts;” Municipal Journal; November 2, 1916; Vol. XLI, no. 18; p553.
17 Electrical Review; June 1 1918; Vol. 72; no. 22, p933.
18 Determination of Eligibility for South Tamworth Industries Historic Area; January 13, 2003; p 6 of 66.
19 Cement and Engineering News ;Vol. 24; January—December, 1912; p24
20 Power; Vol. 52, no, 2; August 31, 1921; p354
21 Paper; February 26, 1913; p 176.
22 American Institute of Mining Engineers; Monthly Bulletin No. 121, January 1917; p xxxvi.
23 The Journal of the Worcester Polytechnic Institute, Positions Of Graduates, 1911. Vol. XIV. JULY, mi. No. 5; p397.
24 The Cornell University Civil Engineer; June 1923; p129.
25 The Cornell University Civil Engineer; June 1924; p145
26 Tuft College Department of Engineering; 1907-1908; p 83.
27 History of Maine; The American Historical Society; New York; 1919; p278.
28 Annual Report of the University of Maine for the Year 1903; Augusta; Kennebec Journal Print; 1904; p 97.