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JOHN RIPLEY FREEMAN, 1855-1932.

Papers, 1827-1952.

Manuscript collection - MC 51

128 records cartons, 4 manuscript boxes,
1 flat document box, 3 oversized flat items, 1 volume,
5 rolls microfilm
Accession numbers: 79-110, 82-60, 83-61, 85-7

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BIOGRAPHY:

Note: The biographical memoir reproduced below was prepared by Walter E. Spear for the American Society of Civil Engineers. It was published in the Society's Transactions (vol. 98, pages 1471-1476, memoir 284) in 1933.

John Ripley Freeman, Past-President and Hon. M. Am. Soc. C. E.

Died October 6, 1932

John Ripley Freeman was born on July 27, 1855, in West Bridgton, Me., where his early life was spent on his father's farm and where he began his education at the country schools. Later, he attended the public schools of Portland, Me., and Lawrence, Mass. He entered the Massachusetts Institute of Technology, in Boston, Mass., in 1872, and became a student in the Department of Civil Engineering, graduating in June, 1876, with the degree of Bachelor of Science.

After graduation, Mr. Freeman went to work for the Essex Company, a water power company at Lawrence, Mass., on the Merrimack River, which had previously employed him during his vacations at the Institute. He soon became Principal Assistant Engineer to the late Hiram F. Mills, Hon. M. Am. Soc. C. E., the Chief Engineer of the Essex Company, one of the foremost hydraulic and sanitary engineers of his time and a member of that eminent New England school of hydraulicians represented by Charles S. Storrow, Hon. M. Am. Soc. C. E., Uriah Boyden, James B. Francis, Past-President and Hon. M. Am. Soc. C. E., and Joseph P. Davis, M. Am. Soc. C. E. Mr. Mills at that time was engaged on extensive hydraulic experiments, the results of which have only in part been made public, and he was also carrying on a large consulting practice devoted mostly to problems of water power, foundations, and factory construction. In all this work Mr. Freeman was an active assistant and there he laid the foundations for his remarkable career.

After ten years of this apprenticeship at Lawrence, Mr. Freeman resigned his position there in 1886 to become Engineer and Special Inspector for the Associated Factory Mutual Fire Insurance Companies, of Boston, Mass. He reorganized the corps of inspectors employed by those companies, conducted experiments looking to the improvement and standardization of fire prevention apparatus, and conducted scientific researches into the causes of fires. During this period he presented to the Society his papers entitled "Experiments Relating to the Hydraulics of Fire Streams" and "The Nozzle as an Accurate Water Meter." For the first of these papers he received the Norman (Gold) Medal of the Society in 1890, and for the second the Norman Medal of 1891. While in Boston Mr. Freeman arranged to give one-half his time to a consulting practice in water power, municipal water supply, and factory construction. There, he also began his long career in the public service, to which he gave so much of his life. He was a member of the Water Board of Winchester, Mass., where he made his home, and in 1895 and 1896 he was Engineer Member of the Metropolitan Water Board of Massachusetts, which was then engaged in preparing plans for the development of a large additional water supply from the Nashua River for the Boston Metropolitan District.

In 1896, Mr. Freeman left Boston to become President and Treasurer of the Massachusetts Mutual Fire Insurance Company and its Associated Companies,¹ at Providence, R. I., a position

¹In 1896 John Ripley Freeman became President and Treasurer of the Associated Factory Mutual Fire Insurance Companies. For a list of the companies in the association, see The Factory Mutuals (Providence, R.I.: Manufacturers Mutual Fire Insurance Company, 1935), pp. 106-129 and pp. 350-352.

which he held at the time of his death. Although best known to the profession as a Consulting Engineer in many fields, he gave fully of his time after he went to Providence to the insurance business, and he developed those natural talents as an executive and business man which gave him pre-eminence in the factory insurance field. His success was marked by a constant improvement in fire prevention methods and a steady reduction in insurance costs. His companies, which wrote about \$65,000,000 of insurance in 1896, had about \$300,000,000 on their books in 1932.

Mr. Freeman approached the problems of building construction and of safe-guarding life and preventing fire losses as an engineer and an insurance executive. He wrote extensively on fire protection matters and in 1905 issued a publication "The Safeguarding of Life in Theatres," which represented a comprehensive study of theatre fires, their causes, and means of prevention. In 1915, he presented to the International Engineering Congress at San Francisco, Calif., a paper on "The Fire Protection of Cities."

For many years Mr. Freeman was alive to the importance of adequate design and good construction in preventing the loss of life and property from earthquakes. He was a member of the Seismological Society of America and collected at Providence an unusual library on seismology. He devoted much effort to stimulating engineers, geologists, and seismologists to the importance of obtaining adequate information on the magnitude and character of earth movements in the vicinity of major seismic disturbances. He visited many earthquake regions in all parts of the world to study at first hand the causes of failure in buildings and other structures, and in 1932 published a book entitled "Earthquake Damage and Earthquake Insurance," which may be considered a textbook on the subject of earthquake-resisting design.

In an age of specialization, Mr. Freeman did not confine his work to those branches of engineering within which the civil engineer to-day is supposed to practice. He was at one time, for example, a civilian member of an Army Board on disappearing gun carriages. He was, however, preeminently a hydraulic engineer and his field was primarily in water power, river control, water supply, and allied problems of a sanitary and hydraulic character. Except for short periods on his larger undertakings he never employed a large organization in his consulting practice, preferring to give each task a large measure of his personal attention. Mr. Freeman believed that a change of work afforded a complete rest. Engineering was his recreation, and he practiced it with an enthusiasm and thoroughness that made him early a prominent figure in the engineering world.

Mr. Freeman never lost his interest in the hydraulic and construction problems associated with the development of water power with which his early work in New England was identified. He wrote extensively on water power subjects and made many investigations and reports on water power projects in the United States, Canada, and Mexico. He organized in 1905 a staff of engineers for the preliminary surveys and investigations for the Feather River Development of the Great Western Power Company, in California, and subsequently advised on the Big Bend and Caribou Developments. In 1907 and 1908, he was Senior Consulting Engineer to the New York State Water Power Supply Commission, which was charged among other duties with that of conserving the water resources of the State. Among other storage projects which he studied was a reservoir on the Sacandaga River above Conklingville, N.Y., in the Adirondack Region, which has since been constructed. He was called in from time to time to advise upon the construction of the Massena Power Development on the St. Lawrence River, for the St. Lawrence River Power Company and its successor at Massena, the Aluminum Company of America; and afterward gave advice on ice difficulties and on back-water and other operating problems. He also advised the Aluminum Company of America on its power developments on several Southern rivers and on

the design and construction of new aluminum smelting works at Niagara Falls, N. Y. He made investigations on water power development for the Canadian Government in Alberta, Manitoba, and British Columbia; designed high masonry dams for the Mexican Northern Power Company, and for the Pacific Gas and Electric Company at Lake Spaulding, California; designed and supervised the construction of a high masonry dam on the Missouri River, at Holter, Montana; and prepared plans for many power projects which have not been executed, notably for the development of the Great Falls of the Potomac River, for a large hydro-electric project in the Lachine Rapids, on the St. Lawrence River, near Montreal, Que., Canada, and for a subterranean development for the Ontario Power Company, at Niagara Falls.

Not the least of Mr. Freeman's contributions in the broad field of Hydraulic Engineering were those on problems of river control and navigation. Among his writings on these matters was a paper on "Flood Control of the River Po in Italy" which was presented at the meeting of the Society on June 6, 1928, and for which he received the J. James R. Croes Medal on January 21, 1931. In 1903, he was made Chief Engineer of the Charles River conversion of the lower estuary of the Charles River into a fresh-water lake, which has since been constructed. In 1904, he reported to the Massachusetts Metropolitan Park Commission on the improvement of the Mystic River and the drainage of the Fresh Pond marsh. In 1905, 1908, and 1915, Mr. Freeman was appointed by the President of the United States a member of Engineering Boards to report on a sea-level versus a lock canal and on problems of dam and lock foundations, and earth slides which blocked the Isthmus of Panama several times. From 1917 to 1920, he acted as Consulting Engineer to the Chinese Government on the improvement of the Grand Canal and the prevention of disastrous floods on the Yellow River and the Hwai River, organized a staff of engineers to investigate these problems, and went to China himself in 1919. Between 1924 and 1926, Mr. Freeman was a member of the Engineering Board of Review of the Sanitary District of Chicago and prepared a program for the regulation of the Great Lakes. His report on these matters included exhaustive studies of winter evaporation from the Great Lakes and of minor earth movements or tilting affecting the problem of lake levels.

Mr. Freeman was greatly interested in the application of the hydraulic research laboratory to the study of the river and harbor problems. He made himself familiar with such laboratories in Europe, and presented to the Society a paper on "The Need of a National Hydraulic Laboratory for the Solution of River Problems." In order to stimulate the interest of American engineers in the laboratory approach to hydraulic problems he had translated and published in 1929 a series of monographs by leading European hydraulicians, entitled "Hydraulic Laboratory Practice." As a further means of educating American engineers to the importance of the hydraulic laboratory and to provide trained men to operate such laboratories when they were built, Mr. Freeman in 1923 gave \$25,000 each to the American Society of Civil Engineers, the American Society of Mechanical Engineers, and the Boston Society of Civil Engineers, with which to provide for traveling scholarships in hydraulics open to young engineers and junior professors. The first scholarship was awarded by the Society in 1927 and since then, one or two men have studied each year in Europe. Mr. Freeman also conceived the idea of a National Hydraulic Laboratory in Washington, D.C., and was active in furthering the passage of the necessary legislation at Washington and in advising on its construction.

In the water supply field, Mr. Freeman has a long record of distinguished service, and his many published water supply reports have made him perhaps best known to engineers in that field. In 1899, he was engaged by the Comptroller of The City of New York to investigate new sources of water supply for that city, and after eight months of intensive work he submitted an exhaustive report on all its possible water supply sources. In this report he presented valuable experiments on the flow over the crests of model dams, a recomputation of the yield of the Croton System, and an

estimate of the future water consumption of New York City, which has been well confirmed by subsequent events.

In 1903, he was a member of the Commission on Additional Water Supply of New York City, the so-called Burr-Hering-Freeman Commission, which investigated the yield and quality of all available sources of supply for the city and made a report which became the basis of the subsequent work of the Board of Water Supply. Mr. Freeman, with his insurance training, recognized the importance of ample water pressures in large cities and was largely responsible for the adoption of the Commission's recommendation for delivering the new supply in the City at a considerably higher level than the existing distributing reservoirs at Croton, a recommendation that was followed in the construction of the Catskill Works. In 1905, he was appointed Consulting Engineer to the Board of Water Supply of New York City, the body created in that year to construct the Catskill System. He was active in the organization of the Engineering Corps of the Board of Water Supply and in the planning and construction of the Catskill Works. He continued as a Consultant to that Board until his death.

In 1906, Mr. Freeman was one of a commission of three engineers engaged to report on the Los Angeles Aqueduct, a project to bring the waters of Owens River 240 miles to the City of Los Angeles, Calif. In that work he recommended a location for the Owens River Aqueduct which made possible the development of power not previously considered feasible.

He was engaged in 1909 in the capacity of Consulting Engineer on the problem of new sources for water supply for the City of Baltimore, Md.; from 1901 to 1912, he was Consulting Engineer to the City of San Francisco, Calif., and planned the Hetch-Hetchy System, in which he made the development of electric power an important feature. Among other cities which had sought his advice on water supply matters were Nashua, N. H., Denver, Colo., Seattle, Wash., San Diego, Calif., and the City of Mexico, Mexico.

In addition to his country-wide public service, as a Consulting Hydraulic Engineer, Mr. Freeman was active during the World War as a member of the National Advisory Committee on Aeronautics, and reported at that time on the Hog Island Shipyard. He was also a member of the Visiting Committee of the Bureau of Standards, Washington, D. C. In Providence, which became his home after 1896, he identified himself with many local activities. In 1911, he made a study of city planning for the east side of Providence, including new highways, parkways, and parks.

He also carried on as a private venture a large real estate development of higher character in the vicinity of his home. He served for ten years as a Director of the Rhode Island Hospital Trust Company and of the National Bank of Commerce, in Providence; in 1904, he was a member of the Rhode Island Metropolitan Park Commission; and, during the war, served as President of the Providence Gas Company.

Mr. Freeman was keenly interested in technical education and spoke and wrote on such educational matters. For forty years he was a member of the Corporation of the Massachusetts Institute of Technology, Boston and Cambridge, Mass. He was once offered the Presidency of the Massachusetts Institute of Technology and twice was offered the chair of Civil Engineering at Harvard University, but had to decline in each case, feeling that he was better suited to professional work.

On April 21, 1931, Mr. Freeman was given a testimonial dinner, sponsored by the Providence Engineering Society, at which engineers, scientists, educators, industrialists, and other friends paid him a remarkable tribute for his many varied accomplishments. He was an Honorary

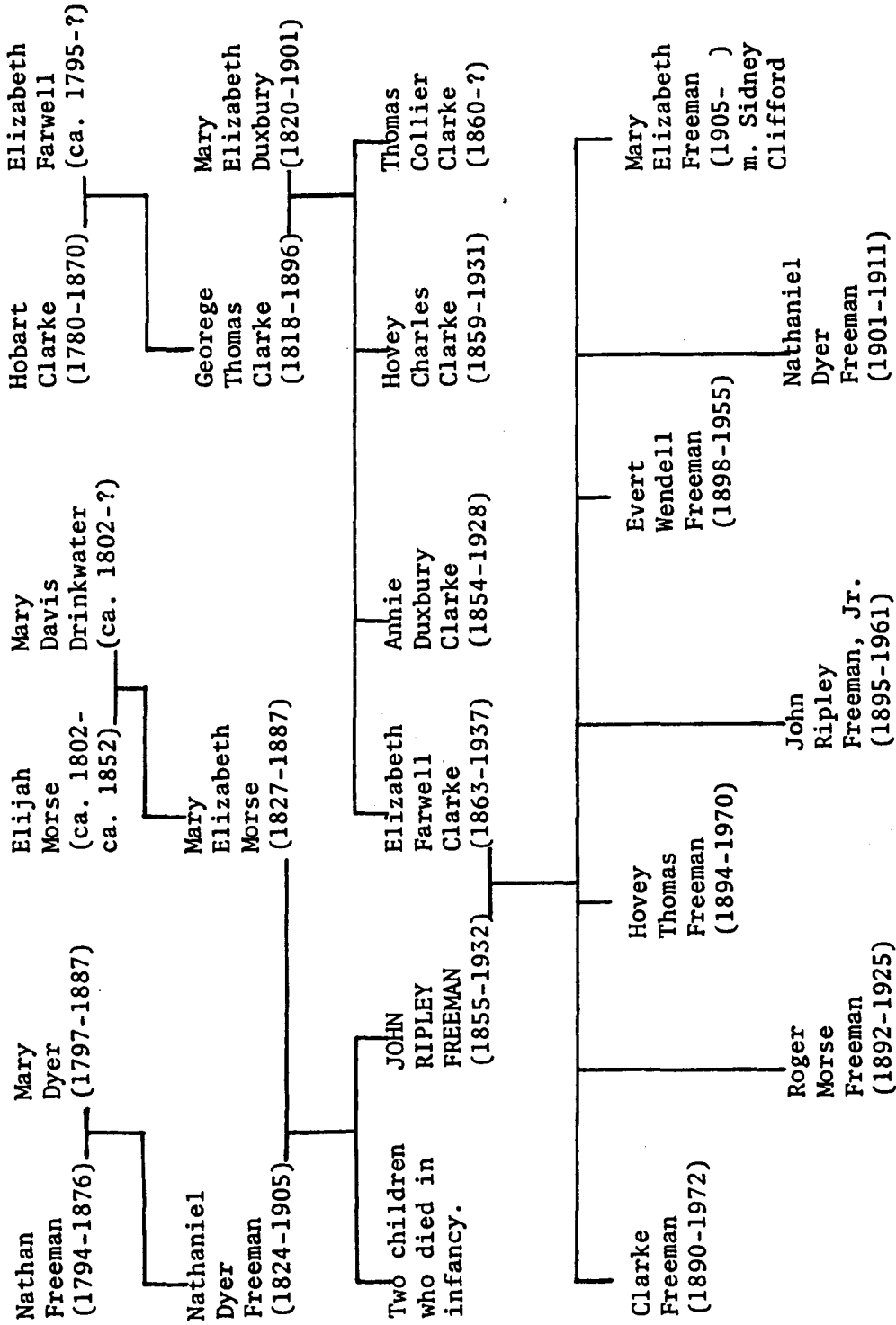
Member of the American Society of Mechanical Engineers, the Boston Society of Civil Engineers, the Providence Engineering Society, the New England Water Works Association, the Badische Technische Hochschule, Karlsruhe, Germany, and Mitglied des Wissenschaftlichen Beirats des Forschungsinstituts, in Munich and Walchensee, Bavaria, and a Past-President of the first two of these societies. He held honorary degrees from Brown University, Tufts College, the University of Pennsylvania, Yale University, and the Sachsische Technische Hochschule, Dresden, Germany....

In 1888, Mr. Freeman was married to Elizabeth Farwell Clark who, with one daughter and four sons, survives him.²

Mr. Freeman was elected a Junior of the American Society of Civil Engineers on June 7, 1882; a Member on April 3, 1889; and an Honorary Member on September 29, 1930. He served as Director from 1896 to 1898; as Vice President in 1902 and 1903; and as President in 1922.

²J. R. Freeman had six sons and one daughter. See genealogy on next page.

GENEALOGY:



SCOPE AND CONTENT NOTE:

The John Ripley Freeman Papers (150 linear feet) span the period 1827-1952. The bulk of the material falls between 1876 and 1932, the years Freeman (JRF) worked as a consulting engineer and insurance executive. Approximately half the collection is correspondence. The remainder includes photographs, draft and published reports, maps, diaries, computations and data, clippings, and reprints. The Papers have been arranged in five series:

I. Personal, Biographical, and Family Papers	Boxes 1-5
II. Correspondence	Boxes 5-27
III. Alphabetical Subject Files	Boxes 28-53
IV. Hydraulic Project Records	Boxes 54-119
V. Reprints and Book	Box 120

The materials in these series suggest a number of subject strengths, including hydraulic systems and structures; the daily activity of a consulting engineer at the turn of the century; the Massachusetts Institute of Technology, particularly the choice of site and construction of its Cambridge campus; the German-American intellectual exchange and its influences on engineering in the United States between 1910 and 1932; hydraulic research and hydraulic laboratories; fire prevention and earthquake engineering; and investment practices around the turn of the century, especially mining speculation.

The primary strength of the collection is in **hydraulics**. The collection contains over 80 linear feet of project files that record JRF's work on dam construction, the planning of aqueducts, reservoirs, irrigation systems, and hydroelectric plants, and the analysis of water supply systems. Freeman's expertise was sought in widely differing aspects of hydraulics, from understanding the geology of dam foundations to estimating the cost of alternative construction proposals. His work on dam design accounts for much of his hydraulic project records. Records on dam design include, for example, material on the San Pablo Dam, an earthen dam in the East Bay region of San Francisco (box 71); the Calaveras Dam in the central valley of California (boxes 60-61); the Hauser and Holter Dams in Montana (boxes 97-99); and the Wyman Dam on the Kennebec River in Maine (box 89).

Freeman frequently called on William Otis Crosby, an M.I.T. classmate, to help him with the geological analysis of a project site.³ Crosby was often consulted on dam projects, including the **Keokuk Dam** in Iowa. This dam on the Mississippi River was one of the largest Freeman designed. The materials in boxes 80-89, particularly the audit and progress reports, display the thoroughness of Freeman's approach to cost estimation and construction supervision. Other Keokuk materials include over 1000 photographs showing various stages in the construction of the spillways, turbines, and other portions of the dam.

The records on the **Hetch Hetchy** plan for the City of San Francisco (boxes 67-71) reveal the politics behind competing proposals for an additional water supply. In 1912, Freeman

³JRF discussed his work with W. O. Crosby in a memoir written in 1926 upon Crosby's death. The memoir is in box 42 with other material concerning the Class of 1876.

recommended the damming of the Tuolumne River in Yosemite National Park, 172 miles east of the city. Since the reservoir would cover public land, the proposal had to be approved by the U.S. Congress. Despite the protests of John Muir and other naturalists, the plan was eventually accepted by Congress, and approved by the City over other systems. Construction of Freeman's system was finally completed in the fall of 1934, two years after his death. His plan included several sites for hydroelectric power development, and the aqueduct from Yosemite to the San Francisco Bay did not require pumping stations.

Freeman conducted **similar investigations of water supply resources** for Los Angeles and San Diego, California (boxes 54-57); Denver, Colorado (boxes 73-74); Hartford, Connecticut (box 74); Portland and Waterville, Maine (box 90); Baltimore, Maryland (box 90); Boston and Springfield, Massachusetts (boxes 93-95); Helena, Montana (box 97); Newark, New Jersey (boxes 100-101); New York City (boxes 101-106); Asheville, North Carolina (box 109); Vancouver, British Columbia, (box 115); and Mexico City (boxes 117-118).

As a part of his work for the Boston Metropolitan Water Board, between 1895 and 1991 (boxes 93-94), he appraised mill property in the Boylston-Clinton area of central Massachusetts. These mills were endangered by a reservoir proposed for additional water supply to Boston, now known as the **Wachusett Reservoir**.

Later in his career Freeman was commissioned by the Chicago Sanitary District to study variations in water level of the **Great Lakes** (boxes 76-80). In 1926 he completed a 900 page report that dealt not only with the question of diverting Lake Michigan water into the Mississippi River system, but also with navigable channels, rainfall patterns, evaporation rates, geological uplift, and ice obstruction in each of the Great Lakes and their connecting rivers.

In a similar manner, when he was asked to study the 1916 **Catawba Dam** failure (box 109) and flood in North Carolina, he went beyond his employer's original request. In this case he encouraged companies with investments in that region, such as the Southern Power Company, the Southern Railroad Company, and the Aluminum Company of America, to cooperate with the U.S. Geological Survey in gathering data important for safe design of dams and bridges throughout southern Appalachia.

The Great Lakes study, though commissioned by the Chicago Sanitary District, did not directly address sanitary conditions. Several of JRF's hydraulic projects did, however, involve sanitary engineering questions. Boston-based projects involving studies of **sanitation** included work with the Charles River Dam Committee, the Metropolitan Park Commission, and the Metropolitan Sewerage Commission (boxes 91-92). The records on two of his projects in the Pacific Northwest, the Cedar River watershed study for the Seattle Waterworks (box 112) and the construction of the Coquitlan Dam in British Columbia (boxes 113-115), also include sanitation materials.⁴

The Freeman Papers document JRF's approach to his work as a **consulting** engineer, both in the hydraulic project records of series IV and in the autobiography and diaries of series I. The autobiography covers only the first half of his life, 1855-96. Family letters in series I also reveal

⁴Freeman was involved in many aspects of public works, from water power generation to improvement and maintenance of water quality. His principal expertise was the design of hydraulic structures. For a survey of public works engineering, see History of Public Works in the United States, 1776-1976 (Chicago: American Public Works Association, 1976).

the travel, study, and consultation that characterized Freeman's career. The following paragraph, taken from a letter JRF wrote to his son Roger in November 1913, gives an example of the pace which he maintained to stay abreast of projects located across the continent:

"My itinerary ran as follows: First, a day with the Board of Water Supply in New York City; an evening in Washington with certain city officials of San Francisco at a Hetch Hetchy conference; thence down to Knoxville, Tenn., and back into the heart of the mountains and in the midst of the land of feuds, where I spent two or three days studying some dam sites for the Aluminum Company, where we are planning for two dams much higher than anything built anywhere in the world, namely 200 feet drop; thence to Chicago and submitted my cross-examination on the lake levels case as affected by the study for the erosion of the ledge by the current coming over the dam; thence for a day's visit with your Uncle Hovey, while waiting for my Canadian friends to arrive with their private car; thence a two-day ride thru Minnesota, Dakota, and Canada, out to within one day's ride from the Pacific Coast, studying plans and blueprints on the way with the Chief Engineer and with the Assistant to the President of the C.P.R. [Canadian Pacific Railroad], relative to a dam for their great irrigation project, in which they are going to have more land served by the ditches of this one project than the total area of the State of Rhode Island. The dam is on a clay base and there are some grave questions to be studied and they wanted somebody from the outside to take the responsibility before they shut the by-pass." (5/13)⁵

Because of JRF's continuing interest in the **Massachusetts Institute of Technology** after his graduation in 1876, his papers contain a variety of materials on the Institute. In series III, boxes 41-43 contain subject files on M.I.T. Also, series II contains considerable correspondence between Freeman and Institute administrators and faculty members, particularly for the years 1890-1907. Soon after his graduation JRF became Secretary of his Class within the M.I.T. Alumni Association.

In 1893, JRF was appointed to the M.I.T. Corporation, the official governing body of the Institute. Freeman served on the Corporation for forty years, an active member until his death in 1932. He was involved with the **proposals to merge M.I.T. and Harvard University** in 1897 and 1904. He supported an alliance between the two schools only if the independence of M.I.T.'s administration could be preserved. The proposed cooperation was abandoned in 1905 because of legal complications and a lack of alumni support. A substantial amount of material on these proposals exists in the correspondence files. A partial list of folders in series II containing letters and circulars on the 1904-05 proposal and a related alumni group, the Technology Fund Committee, includes 19/42, 19/55, 19/56, 20/17, 20/45, 20/49, and 21/13.

Series III also contains correspondence, 1907-32, about M.I.T., labeled "M.I.T. Corporation" by JRF (boxes 41-43). These letters pertain to Corporation matters, departmental **Visiting Committees**, and Freeman's more general interests in faculty appointments, hydraulic research, seismology, visiting lecturers, and German engineering and scholarship. JRF served on several of the Corporation's Visiting Committees, whose task it was to review a Department's curricula and research. Correspondence in these files relate to some, but not all, of the following committees (dates refer to the years of JRF's service):

⁵Throughout the finding aid, particular folders are cited by box and folder number. For example, 5/13 means box 5, folder 13.

1891-1901, Visiting Committee to the Department of Architecture
1894-1923, 1926-32, Visiting Committee to the Department of Civil Engineering
1902-11, Visiting Committee to the Department of Biology
1923-27, 1931-32, Visiting Committee to the Department of Mechanical Engineering

According to the 1931 biographical sketch⁶ written for JRF's testimonial dinner (2/2 and 2/3), when President Henry S. Pritchett left M.I.T. in 1907 he asked Freeman to be a candidate for the **M.I.T. Presidency**. No record of this request was found, however, in either the correspondence files of series II or the M.I.T. subject files of series III.

The Institute occupied land in Boston's Back Bay from 1865 until 1916, when new buildings across the Charles River in Cambridge were completed. In the decade before this move, Freeman assisted in choosing a new location for the Institute and planning its buildings. The site on the Charles was familiar to JRF because he served in 1903 along with President Pritchett on the Charles River Dam Committee, surveying the areas in Boston and Cambridge surrounding the Charles River basin. In 1911, JRF volunteered his services to President Richard C. Maclaurin to study the landfill at the proposed Cambridge site and the space requirements of the various Institute departments. He produced a report on the new campus, including architectural plans for the "New Tech," (boxes 41-42). These plans were eventually superseded, but Freeman's work on foundation borings was instrumental in the planning of the **Cambridge campus**.

During the last twenty years of his life, Freeman maintained a strong interest in European, especially **German, engineering**. He sponsored visiting lecturers from Germany and the translation of German monographs on civil and mechanical engineering, and he kept abreast of European laboratory techniques. The book Der Wasserbaulaboratorien Europas, a review of German hydraulic research compiled by German scientists and engineers at Freeman's request, was translated as Hydraulic Laboratory Practice under his editorial direction (box 39). Other examples of Freeman's interest in European scholarship can be found throughout the subject files, including the file on Italian hydraulics in box 33, the work on the translation of Armin Schoklitsch's book in box 42, and the files of correspondence with Karl Terzaghi, an Austrian expert in soil mechanics in box 52.

A direct contribution of Freeman to the German-American intellectual exchange was his donation of \$25,000 to the American Society of Civil Engineers, the American Society of Mechanical Engineers, and the Boston Society of Civil Engineers, to provide scholarships for young engineers to study at German universities. The first of the "**Freeman Scholars**" were chosen in 1927, and three were sent overseas each following year. JRF personally kept in touch with each student (boxes 36-37).

Freeman visited many German hydraulic laboratories on his journeys through Europe (see materials on "European Tours" in box 35). In the 1920's he tried to convince various American universities and the United States government to build a laboratory on the scale of those in Germany. Freeman helped Senator Joseph E. Ransdell of Louisiana draft a bill to establish a **National Hydraulic Laboratory**. The bill passed in May of 1930. Freeman's information gathering and political lobbying on behalf of the National Hydraulic Laboratory are recorded in a lengthy correspondence file dating from 1922 to 1932 (boxes 43-46). The plans proved too costly to be used by the Bureau, but they illustrate Freeman's points on methodology. Ideas for this

⁶Contained in a booklet printed for a testimonial dinner given in 1931 in JRF's honor.

laboratory also came from JRF's early contacts with New England hydraulic engineers, such as Hiram F. Mills and James B. Francis.⁷

In 1917, JRF was appointed to the newly formed **National Research Council**, whose purpose was to secure scientific information for the Council of National Defense. Boxes 47-48 contain correspondence, minutes, and reports collected during his service with N.R.C. This material represents the extent of JRF's involvement in World War I and includes correspondence with members of Congress on defense.

During the 1920's, Freeman was on the Board of Visitors for the **National Bureau of Standards** (box 31). When its director, Samuel W. Stratton, left the Bureau to become President of M.I.T., JRF was instrumental in finding his replacement, George K. Burgess.

JRF was appointed to serve on the **National Advisory Committee on Aeronautics** in 1918 by President Woodrow Wilson, but there are no materials on the Committee in the collection. JRF resigned from this post after a year of service.

Freeman was a member of the Boston Society of Civil Engineers (President, 1893-94); the American Society of Civil Engineers (President, 1921-22); and the American Society of Mechanical Engineers (President, 1904-05). Only a few folders in the collection pertain directly to these societies (box 28). Other materials relating to the **professional societies** can be found under "Freeman Fund" and "United Engineering Society" (box 52).

As an inspector and later President, of the Associated Factory Mutual Fire Insurance Companies, Freeman applied his engineering experience to insurance matters. Though he spent roughly half his work days on insurance matters, the Freeman Papers do not contain as much material on **fire prevention** as they do on hydraulics. The records of his work for the Factory Mutuals (boxes 28-31) include notebooks of data and computations for experiments he conducted in Lowell, Massachusetts, and Nashua, New Hampshire, soon after joining the companies' Inspection Department in 1886. His experiments on the hydraulics of fire-fighting equipment were designed to produce data on the most efficient methods of fire protection for factories, mills, and large office buildings. Freeman recorded some reminiscences of this work in an autobiographical sketch that describes his work with the Factory Mutuals between 1886 and 1912 (1/5).

⁷For more detailed information on Freeman's relationship to the American and European hydraulic traditions, see Hunter Rouse, Hydraulics in the United States, 1776-1976 (Iowa City: University of Iowa, 1976.)

In 1904, Freeman came to Chicago to inspect ruins of the Iroquois Theatre, where a disastrous fire had killed over 500 people. During the course of his investigation, he conducted a survey of theater buildings. Later he wrote a report that recommended standards for the **fire-proofing of theaters**, and in December 1905, he published a book entitled On the Safeguarding of Life in Theatres (120/18). Materials on the Iroquois Theatre include many photographs and clippings along with the survey and report in boxes 32-33.

Late in his career, Freeman began to study **seismology**. He was particularly interested in the work of Japanese engineers such as Kyoji Suyehiro (see correspondence with Suyehiro in box 51). Between 1923 and 1932, JRF analyzed methods of construction that best resist earthquake motion. He wrote a book, Earthquake Damage and Earthquake Insurance, that covered topics ranging from construction techniques for buildings in earthquake zones to rate structures for companies insuring risks in regions such as southern California. Like his promotion of hydraulic research Freeman called for increased observation and analysis to expand on his work in earthquake engineering. Materials on his study of earthquakes and on his book are in box 34.

Freeman's career was punctuated with frequent **investment ventures**, often involving mines and nearby milling operations. William O. Crosby, his geologist classmate, was involved in investigating some of these mines. See, for example, Crosby's report on the Centennial Mining Company in box 33. Reports, correspondence, and reprints on these investments can be found throughout series III under the names of the companies involved. Freeman also speculated in land development. Volumes on these ventures are to be found under titles such as "Forestry" and "Tule land." Tule land is found in the delta of California's Sacramento and San Joaquin Rivers. Freeman was instrumental in the agricultural development of this land.

Separations

While doing research on land subsidence along the Massachusetts coast, JRF acquired manuscripts of the early nineteenth century civil engineer Loammi Baldwin from the family home in Woburn, Massachusetts. (See material on Charles River Dam and Boston coastal subsidence in boxes 91-92.) These materials dated 1824-29 and 1845 included correspondence, data on tide marks, briefs, and sketches. They have been separated from the JRF Papers and cataloged as a separate collection (Loammi Baldwin Papers, MC 69).

Memorabilia found in the Freeman Papers was transferred to the M.I.T. Historical Collections. It includes awards, diplomas, and medals, a few family portraits, and other items. Duplicate copies of reports and reprints and various equipment catalogs and technical reprints bearing no direct relationship to Freeman's projects were also removed from the collection.

Related Collections

Several manuscript collections at the Institute Archives contain Freeman correspondence. The M.I.T. Office of the President, Records, 1897-1932 (AC 13), contain letters between JRF and Presidents Richard C. Maclaurin and Samuel W. Stratton. Also, the Dugald C. Jackson Papers (MC 5) contain a few Freeman letters. A third collection of interest is the William Otis Crosby Papers (MC 68). The Crosby Papers have materials on various hydraulic projects and mining investments of JRF. For other collections related to the John Ripley Freeman Papers, consult the Institute Archivist.

Freeman was Secretary of the M.I.T. Class of 1876. Class notes were published in Technology Review, and JRF frequently contributed to these notes between 1899 and 1930. Technology Review is available in the Archives.

ACQUISITION AND ARRANGEMENT:

The bulk of the Freeman Papers was received by the Institute Archives in June 1974. Prior to its transfer, the collection was in the custody of Associated Factory Mutual Fire Insurance Companies, who had received it from the Freeman home in Providence. Processing of the Papers began in October 1979. The family gave additional papers to the Institute Archives in January 1980, and at that time the family granted their copyrights to M.I.T.

The material was found in good order. Most papers were enclosed in notebooks and packets with Freeman's labels still on them. When a notebook was in poor physical condition, it was taken apart and the items within were placed in acid free folders. The item's original order was preserved and Freeman's title was used as the folder heading. Series descriptions follow this note and explain the arrangement within the five series.

Series I, II, and V are listed by folder title, beginning on page 20. The folders were numbered from I in each box. For Series III and IV, however, box lists were prepared that show the subject files or project records contained in each box. The box list also lists the types and amount (in folders and volumes) of material for each subject or project. Oversize items are noted in the left hand column of the box list and are in box 121.

Many volumes in Series III and IV are in their original covers. The items within these volumes, as with those transferred to acid free folders, are brittle from acidification and require careful handling. Some items are too brittle to be photocopied.

An inventory of the Freeman Papers prepared while they were still at the family home in Providence, Rhode Island, was found amongst other personal and biographical materials (2/5 and 2/6). Only a few items mentioned in the inventory are not in this collection. Missing items include correspondence between JRF and the American Society of Civil Engineers and bound volumes of M.I.T. examinations and correspondence. Also, some correspondence between JRF and his M.I.T. classmates was transferred to the M.I.T. Libraries by his son Clarke in 1944, before the Institute Archives had been established. This material has not yet been located.

SERIES DESCRIPTIONS:**I. Personal, Biographical, and Family Papers.**

Boxes 1-5 (5.5 linear feet)

Family correspondence, diaries, and biographical materials which portray both the professional activity and the family life of JRF. Included are personal diaries, 1873-1932, and letters of JRF's ancestors and children.

A. Autobiography and related papers.

Included are correspondence and clippings that JRF gathered for the autobiography. Many of these letters pertain to appointments or awards JRF received throughout his career. Correspondents include Hiram F. Mills and Woodrow Wilson. This section also includes typewritten excerpts from JRF's diaries.

B. General personal and biographical material.

Included are bibliographies, genealogical notes, congratulatory letters, medical records, obituaries, correspondence concerning the disposition of JRF's engineering library, and a detailed inventory of JRF's papers as they were kept at his home in Providence, R.I.

C. Diaries, 1873-1932.

The earliest diaries contain entries for intermittent periods and do not provide the daily record typical of the diaries of JRF's last thirty years.

D. Two sketchbooks.

E. Family correspondence.

Folders 4/5 to 4/16 contain general family correspondence, arranged chronologically. Correspondence between JRF and various relatives from 1891 to 1919 is included, as well as letters written by JRF's widow and children after his death in 1932. The remainder of the family correspondence is arranged alphabetically, by name of family member. The genealogy on page 8 serves as a guide to family names. The names "Ford and Morse families" appear in the folder list of family correspondence, but are not in the family tree. Both families were related to JRF, but the collection does not define the relationship. Other letters written by JRF's sons appear in series III, in subject files that concern business JRF conducted with his sons or business unfinished at the time of his death.

F. Deeds, correspondence, and lot area computations relating to property owned by the Freeman family.

II. Correspondence

Boxes 5-27 (35 linear feet)

Incoming and outgoing letters on topics ranging from insurance inspections and hydraulic projects to investment, government, educational, and family matters. Prominent correspondents include Edward Atkinson, William O. Crosby, Allen Hazen, Clemens Herschel, Hiram F. Mills, and Henry S. Pritchett. Note that correspondence also appears in other series in the collection, especially series III and IV.

A. Letterpress copybooks of outgoing letters, 1881-1895, 1896-1910.

Letters dated October 1895 to February 1896 are apparently missing. All but six of the thirty-nine copybooks have indexes prepared by Freeman or his secretaries. Three of the

copybooks are water damaged, and their pages are only partially legible: November 1892-June 1893, June 1893-? March 1894, and November 1894-September 1895.

B. Incoming letters, 1879-1907.

Originally these letters were glued into letterbooks. They have been removed from the letterbooks and placed in folders in the order in which they were found. JRF kept these letterbooks distinct from his Factory Mutual papers, labeling them "Personal Correspondence," although letters usually concerned professional activities. The notebooks from 1889 to 1897 were indexed like the letterpress copybooks.

C. Incoming and outgoing letters, 1910-1928.

For outgoing letters, this file is continuous with the letterpress copybooks. There is, however, a gap of three years between the end of the previous file of incoming letters and the beginning of this correspondence file. In this file, JRF arranged letters alphabetically in blocks of several years. There are many gaps in this file. For several years, only half the alphabet is represented; for other years correspondence is missing altogether.

D. Incoming and outgoing letters, 1931-1932.

The letters in this section are arranged in strict chronological order.

III. Alphabetical Subject Files

Boxes 28-53 (27 linear feet)

Correspondence, photographs, reports, clippings, notes and technical reprints relating to individual people, institutions, companies, or general subjects, such as "photography."

Headings on these files are the same as Freeman's headings on the original folders and packets in which the material was found. Similar materials that pertained to JRF's consulting work in hydraulics were put into Series IV. Correspondents represented in series III include Charles W. Baker, Geroge K. Burgess, Morris L. Cooke, William O. Crosby, Silas W. Holman, Herbert Hoover, Miller R. Hutchinson, Richard C. Maclaurin, Henry S. Pritchett, Samuel W. Stratton, and Kyoji Suyehiro.

Freeman labeled his files consistently and in most cases unambiguously. The following exceptions are noteworthy. Material created in JRF's capacity as inspector and executive with the Factory Mutuals was labeled in a variety of ways, but the processor has brought all of it together into an alphabetical sequence under the company name "Associated Factory Mutual Fire Insurance Companies" (boxes 28-31). Information on the World Engineering Conferences is contained in volumes on JRF's 1924 and 1930 European Tours (box 35). Also, folders on recipients of the Freeman Fund Scholarships are filed alphabetically under "Freeman Fund" by each scholar's name (boxes 36-37). Similarly, the various subject files concerning the Massachusetts Institute of Technology were brought together in an alphabetical arrangement under "M.I.T." (boxes 41-42). Some of Freeman's notes on M.I.T. classes can be found in a notebook that describes work he did with the Essex Company of Lawrence, Massachusetts (box 35).

The arrangement of Series III is alphabetical, and within each subject file it is roughly chronological. In some cases, volumes pertaining to the same subject overlap in date. Often one volume or folder contains correspondence, another typescript copies of reports, and a third photographs or technical reprints. When volumes of correspondence were found, they were placed first in the sequence of material within the subject file.

IV. Hydraulic Project Files

Boxes 54-119 (81.5 linear feet)

Correspondence, photographs, draft reports, published reports, briefs, transcripts of testimony, maps, clippings, audit reports, computations, notes, sketches, blueprints, technical reprints, and databooks on borings, average rainfall and runoff, and lake levels. Arranged by the place where the project was conducted, with the locations in the United States first (boxes 54-112), then the Canadian provinces (boxes 112-117), then other foreign countries (boxes 117-118).

The project files document JRF's work at over 100 locations, including sites in 35 states and provinces in the United States and Canada, as well as China, Colombia, Mexico, and Panama. JRF served as a civil engineering consultant in planning hydraulic structures and hydraulic systems.

All material concerning hydraulics projects has been filed according to JRF's labels. In some cases, however, more than one state was involved, although the label only referred to one. For example, material on Nevada's Lahontan Dam is contained in the volume of material listed for the Excataada Dam in Oregon. Similarly, material on Pittsburgh, Pennsylvania, is contained in volumes listed for the Cheat River, West Virginia, project. Material on JRF's work for the Southern Water Power Company under Muscle Shoals, Alabama, includes reports on Tallulah Falls, Georgia. Likewise, data and reports on Michigan's St. Clair River can be found in the study of lake level variation commissioned by the Chicago Sanitary District. When a project was located in more than one state, its records were filed under the city from which the project took its name. For example, the Keokuk Dam spans the Mississippi River from Iowa to Illinois. The town of Keokuk is on the Iowa bank, and therefore, the material for the project is under Keokuk, Iowa. Similarly, the Blackstone River Reservoir material is listed under Blackstone, Rhode Island, though much of the material relates to southern Massachusetts.

Freeman worked on eight projects in central California between 1905 and 1932. Most of these involved large watershed and river system studies. They have been placed alphabetically under the heading "San Francisco Bay Area and Sacramento Valley Water Supply and Water Power Projects." In upstate New York, JRF worked on several projects for the Aluminum Company of America and the St. Lawrence River Power Company. These materials were difficult to subdivide by location and were left in one large group (boxes 106-108). The locations included are Massena, New York; Niagara Falls; and the Long Sault Rapids in the St. Lawrence River.

For each of his largest consulting projects, JRF created a chronological correspondence file. These files have been placed first in the sequence of folders and volumes for the project. They consist primarily of incoming and outgoing correspondence, but often include clippings and reprints. Prominent correspondents include William O. Crosby, Benjamin F. Groat, Allen Hazen, Frederick L. Olmsted, Theodore Roosevelt, William Howard Taft, and Sanford E. Thompson.

V. Reprints and Book

Box 120 (1 linear foot)

Reprints of articles published in engineering journals and popular magazines, printed reports, and a book, The Flow of Water in Pipes and Pipe Fittings. Arranged chronologically by date of publication.

This series is not a complete set of JRF's writings. For bibliographies of his publications, see folder 1/34. Two of JRF's books, Hydraulic Laboratory Practice (1929) and Earthquake Damage and Earthquake Insurance (1930), are in Series III, along with manuscript material pertaining to each book.

<u>Box</u>	<u>Folder</u>	
		Series I. PERSONAL, BIOGRAPHICAL, AND FAMILY PAPERS
1	1-7	Autobiography
	8-12	Illustrations
	13-18	Correspondence gathered for autobiography, 1886-1930
	19	Clippings gathered for autobiography, ca. 1883-1932
	20	Correspondence concerning a biography, 1932-1938
	21	Chronology, notes on diaries, 1872-1932
	22-33	Excerpts from diaries, 1873-1926
		General personal and biographical material
	34	Bibliographies
	34A	Student notes, 1872-1873
	35	Biographical sketches, 1923, 1931-35
	36	Biographical and genealogical notes
	37	Personal investment notes
	38	Seventieth birthday, congratulations, 1925
2	1	Medical records, 1931
	2-3	Testimonial dinner, acknowledgements, 1931
131		Testimonial dinner, scrapbook, 1931
2	4	Obituaries, October - November, 1932
	5-6	Inventory of papers at home in Providence, R.I., ca. 1932
	7-8	Disposition of library, correspondence, ca. 1942-1959
		Diaries
	9	1873-1874
	10	1877-1878, Vacations to White Mountains, N.H., and Narragansett Bay, R.I.
	11	1879-1883

<u>Box</u>	<u>Folder</u>	
2	12	1885-1886
	13	1887-1889
	14	1889, Vacation with visits to hydraulics sites in Switzerland, Germany, Holland, and England
	15-27	1890-1905
3	1-24	1906-1929
4	1-3	1930-1932
	4	Sketchbooks, ca. 1875-1876
		Family correspondence
	5-16	General, 1891-1919, 1932-1952
	17	Hovey C. Clarke, testimonial, 1902
	18-21	Ford family, 1926-1932
	22-23	Clarke Freeman, 1905-1917
	24-30	Everet W. Freeman, 1909-1932
	31-34	Hovey T. Freeman, ca. 1905-1920
5	1-8	John R. Freeman, Jr., (Jack), ca. 1909-1932
	9	Mary E. Freeman, 1849-1860
	10	Nat Freeman, ca. 1910
	11	Nathan Freeman, 1827
	12	Nathanial D. Freeman and Mary E. Freeman, 1885-1903
	13-15	Roger M. Freeman, 1907-1925
	16	Ellen R. Morse, diary of Texas journey, 1883
	17	Sarah and John Morse, 1928-1932

<u>Box</u>	<u>Folder</u>	
5		Family property
	18	Mary E. Freeman, deeds, 1879, 1882
	19	Sale of Kansas farm, May 1888
	20	House lot plans, 1892-1901
	21	Lot areas, computations, 1919
	22	Bridgeton, Maine real estate, correspondence, 1929-1930
	23-24	Home on Freeman Parkway, Providence, R.I., bills, notes, and receipts, 1929-1931

Series II. CORRESPONDENCE

A. Letterpress copybooks of outgoing correspondence

	25	Aug. 1881 - March 1884
	26	May 1886 - May 1889
	27	June 1887 - Feb. 1892
	28	Aug. 1889 - July 1891, with index
6	1	Aug. - Dec. 1890, with index
	2	July 1891 - Nov. 1892, with index
	3	Nov. 1892 - June 1893
	4	June 1893 - ?, with index
	5	March - Nov. 1894, with index
	6	Nov. 1894 - Sept. 1895, with index
	7	March 1896 - March 1897
	8	April - Nov. 1897, with index
	9	Dec. 1897 - July 1898, with index
	10	July 1898 - Jan. 1899, with index

<u>Box</u>	<u>Folder</u>	
7	1	Feb. - Oct. 1899, with index
	2	Oct. 1899 - Jan. 1900, with index
	3	Feb. - June 1900, with index
	4	June - Oct. 1900, with index
	5	Oct. 1900 - April 1901, with index
	6	April - Oct, 1901, with index
	7	Oct. 1901 - April 1902, with index
	8	April - Dec. 1902, with index
	9	Dec. 1902 - May 1903, with index
8	1	May - Sept. 1903, with index
	2	Sept. 1903 - Jan. 1904, with index
	3	Jan. - May 1904, with index
	4	May - Oct. 1904, with index
	5	Oct. 1904 - Feb. 1905, with index
	6	Feb. - June 1905, with index
	7	June - Oct. 1905, with index
	8	Oct. 1905 - Feb. 1906, with index
	9	Feb. - May 1906, with index
	10	May 1906 - Feb. 1907, with index
	11	Dec. 1906 - May 1907, with index
9	1	May - Sept. 1907, with index
	2	Sept. 1907 - March 1908, with index
	3	March - Nov. 1908, with index
	4	Nov. 1908 - May 1909, with index
	5	May 1909 - July 1910

<u>Box</u>	<u>Folder</u>	
9		<u>B. Incoming correspondence</u>
	6-35	1879-1886
10	1-22	1881-1895
	23-38	Dec. 1889 - Nov. 1890, with index
	39-55	Oct. 1891 - March 1892, with index
	56-67	Feb. - July 1892, with index
11	1-17	July - Dec. 1892, with index
	18-33	Nov. 1892 - June 1893, with index
	34-50	Jan. - Sept. 1893, with index
12	1-17	Sept. 1893 - Jan. 1894, with index
	18-34	Dec. 1893 - April 1894, with index
	35-50	April - Aug. 1894, with index
13	1-17	Aug. 1894 - March 1895, with index
	18-34	March - July 1895, with index
	35-51	June 1895 - Jan. 1896, with index
14	1-16	Dec. 1895 - Sept. 1896
	17-32	March 18967 - Sept. 1897
	33-49	May - Sept. 1897, with index
	50-66	Sept. - Dec. 1897, with index
15	1-16	Dec. 1897 - March 1898
	17-32	March - Aug. 1898
	33-48	Aug. - Dec. 1898
	49-64	Nov. 1898 - May 1899
16	1-16	May - Sept. 1899
	17-32	Sept. - Dec. 1899

<u>Box</u>	<u>Folder</u>	
16	33-48	Dec. 1899 - March 1900
	49-65	Feb. - July 1900
17	1-16	July - Nov. 1900
	17-30	April - June 1901
	31-46	July - Nov. 1901
	47-52	Nov. 1901 - March 1902
18	1-4	March - July 1902
	5-9	April - Nov. 1902
	10-23	Nov. 1902 - March 1903
	24-39	Feb. - July 1903
19	1-15	May - Sept. 1903
	16-31	Aug. - Dec. 1903
	32-47	Oct. 1903 - March 1904
	48-63	May - Sept. 1904
20	1-16	Aug. - Nov. 1904
	17-32	Oct. 1904 - March 1905
	33-48	March - June 1905
	49-64	April - Nov. 1905
21	1-16	Oct. 1905 - Feb. 1906
	17-32	Jan. - April 1906
	33-48	July - Oct. 1906
	49-64	Oct. 1906 - Feb. 1907
22	1-16	March - May 1907
	17-23	June 1907

<u>Box</u>	<u>Folder</u>	
22		<u>C. Incoming and outgoing correspondence arranged alphabetically by JRF</u>
	24-34	1910-1913, A - H
23	1-14	1910-1913, I - Z
	15-23	1914-1915, A - F
24	1-15	1914-1915, G - S
	16-22	1916-1918, C - H
25	1-11	1916-1918, I - V
	12-13	1920, J - Z
	14-18	1921, A - Z
26	1-5	1922, A - Z
	6-9	1923, A - Z
	10-13	1924, A - Z
	14-17	1925, A - Z
27	1-3	1926, A - M
	4-8	1927, A - Z
	9-13	1928, A - Z
		<u>D. Incoming and outgoing correspondence arranged chronologically by JRF</u>
	14-17	1931-1932

Box

Series III. ALPHABETICAL SUBJECT FILES

- 28 Alaska Galena Company, 1907-1909, correspondence. 2f
- American Bettini Corporation, n.d., report. 1f.
- American Engineering Council, 1930-1932, correspondence. 1v.
- American Society of Civil Engineers, 1895-1896, 1922 pamphlets. 3f. [See also Engineering Building Committee, the Freeman Fund, and John Fritz Medal Board.]
- American Society of Mechanical Engineers, 1904-05, 1931-32, correspondence. 2f., 1v. [See also Engineering Building Committee, the Freeman Fund, and John Fritz Medal Board.]
- American Society for Testing Materials, 1913-1914, correspondence. 1v.
- American Telephone and Telegraph Company, 1911-1929, correspondence. 1f.
- Applications for engineering positions with JRF, 1911-1932, correspondence. 3v.
- Assay Commission, U.S. Treasury Department, 1922-1924, proceedings and photograph. 1f.
- Associated Factory Mutual Fire Insurance Companies:
- Automatic sprinkler experiments, 1892-1899, data, photographs, and reports. 6f.
 - Baltimore fire, n.d., notes. 1f
 - Branch pipe experiments, ca. 1895, data and report. 2f.
 - B. G. Buttolph, 1888-1892, 1905, 1912-1929, correspondence and memoir on the Inspection Department. 1f., 1v.
 - Canadian Pulp Mills, 1916, inspection reports. 1f.
 - Companies insured, Oct. 1886, list. 1f.
- 29 Computation books, 1888-1890. 1f.
- Correspondence, 1894-1908. 1f.
- Efficiency study, 1919, correspondence and reprints. 1v.
- Expense accounts, 1886-1894. 1f.

Box

- 29 Financial statistics, 11912-1913. 1f.
- "Fire Losses in Storehouses," 1897, report. 1f.
- Fire-proofing items for mills, ca. 1886-1896, notes. 1f.
- Fire protection, ca. 1888-1891, notes. 2f.
- "Fire Resisting Construction...," ca. 1894, manuscript. 5f.
- Founding of the company, 1835, photocopies of charter and correspondence. 1f.
- Hose experiments, ca. 1888-1889, data, notes, and report. 1f.
- Hydraulics of fire protection, 1888-1889, notes. 1f.
- Insurance notes and computations, 1886-1889. 1f
- Investment statistics, 1884-1912. 1f.
- Lowell experiments, pump valves and nozzle gages, 1894-1895. 4f.
- Mill machinery, ca. 1898, price book. 1f.
- 29-30, 121,
Oversize item Nashua experiments on flow of water in pipes, 1889-1893, computations, data, sketches, and report. 18f. See also Box 132.
- 30 New England Storm and Flood, 1927, correspondence, report, and reprints. 1v.
- Nozzle meter, 1889, 1897, 1904, blueprints. 1f.
- Notes, 1888-1932. 2f.
- Petroleum report, H. O. LaCount, 1898. 1f.
- Philadelphia Manufacturers Mutual Fire Insurance Company, 1887-1888, telegrams. 1f.
- Albert E. Pillsbury, 1896-1900, correspondence. 1v.
- Pump Governor Springs, 1893, data 1f.
- Pump Valves, 1894, data. 1f.
- 31 Risk evaluations for New York and Maine mills, 1886. 1f.
- Rules and Regulations for Executive Officers, 1889. 1f.
- San Francisco Earthquake and Fire, 1906, report and photographs. 1f.

Box

- 31 "Setting Up Steam Fire Pumps," 1893, report. 1f.
- Steam Fire Pumps, 1893-1894, reprints. 1f.
- Storehouse Construction, 1898, correspondence, notes, and report. 1f.
- Survey rules and forms, 1890. 1f.
- Washington Mills Company, Lawrence, Mass., 1887, inspection report. 1f.
- Water meter, 1900-1905, report. 1f.
- Windsor Cotton Mills, Burlington, N.C., 1893, inspection report. 1f.
- Atlas Imperial Diesel Engine Company, 1929-1930, clippings and correspondence. 1v.
- Auditorium architecture, ca. 1911, blueprints, photographs, and reprints. 1v.
- Automobile accident, 1911-1913, correspondence and photographs. 1f.
- Avery, Donald, 1932-1939, correspondence. 1v.
- Baker, Charles Whiting, 1920-1924, 1931-1933, correspondence. 2v.
- Barnes, Howard T., 1926-1929, correspondence. 1v.
- Blickensderfer Typewriter, 1916, correspondence and reports. 1v.
- Boston Society of Civil Engineers. *Constitution, Bylaws and List of Members*, 1894
- Boyden, Uriah A., 1923-1924, correspondence. 1f.
- Branner, Susan K., 1922-1924, correspondence. 1v.
- Brass and Bronze, Engineering Data, 1914-1921, correspondence and data. 3f.
- British Guiana Gold Concessions Company, 1907-1908, correspondence. 1f.
- Brown School, Providence, R.I., buildings, 1904, correspondence. 1f. [See also, Morris Heights School]
- Bureau of Standards, 1922-1931, correspondence. 1f.
- Burr, William H., Mechanics Course at Rensselaer Polytechnic Institute, 1879, notes. 1f.
- Button Steam Fire Engine, 1892, report. 1f.

Box

- 32 Cattle investment, Texas, 1884-1892, correspondence. 1f.
- California climate, 1924, correspondence. 1f.
- California, cross country auto trip, n.d. photographs. 1f.
- California Stove Pipe Well, 1906, report. 1f.
- Caron Engine, 1926-1927, correspondence, letters patent copies, and reprints. 3v.
- Carpenter, Eugene, 1917, correspondence. 1f.
- Cement and Concrete file, 1923-1927, correspondence and reprints. 1v.
- Centrifugal Casting, 1918, letters patent copies. 1v.
- 32-33 Chicago Theater Fire Study (Iroquois Theatre fire, dec. 30, 1903), 1904-1913, accounts, clippings, correspondence, data, inspection forms, photographs, reports and reprints. 28f., 3v.
- 33 Columbia Spinning Company, 1893, stock certificates. 1f.
- Cooke, Morris Llewellyn, and the United Engineering Society, 1915, correspondence and reprints. 1v.
- Crosby, William O., Report on Centennial Mining Company of Georgetown, Colorado, 1901-1903, correspondence, and report. 4f.
- DaVinci and hydraulic work in Italy, 1924-1932, bibliography, clippings, and correspondence. 1v.
- Davis, Arthur Powell, and the U.S. Reclamation Service, 1923, clippings and correspondence. 1v.
- Diesel Engines, 1926, catalogs, notes, and reprints. 3v.
- 34 Dorset Wollen Company, 1928-1945, correspondence and reports. 1f., 2v.
- Dunbar, William Lewis, 1911-1919, correspondence. 1v.
- Earthquakes and Volcanoes File, including material for Earthquake Damage and Earthquake Insurance, 1923-1932, 1940, bibliography, correspondence, data, photographs, reports, and reprints. 7f., 9v.
- 35 Eisner, Franz, 1932, correspondence. 1v.
- Electrolytic Steel, 1924-1925, correspondence and reprints. 1v.

Box

- 35 Ends of the Earth Club, 1920-1931, correspondence and membership lists. 1v.
- Engineering Building Committee, joint facility for the American Institute of Electrical Engineers, American Institute of Mining Engineers, American Society of Civil Engineers, and American Society of Mechanical Engineers, 1904-1905, correspondence. 1f.
- Engineering Foundation, 1920-1931, correspondence, reports, and reprints. 2v.
- Essex Company, 1872, 1881-1884, notes, time account; also, 1872, class notes from M.I.T. 2f.
- European Tours:
- 1908, itinerary and letters of introduction. 1f.
- 1910, correspondence. 1v.
- 1921, correspondence, programs, and reprints. 1v.
- 1924, clippings. correspondence, programs, and reprints from World Engineering Conference. 7f.
- 1930, correspondence, photographs, programs, and reprints from Second World Engineering Conference. 5v.
- 36 Fairlie, John W., 1920-1923, correspondence. 1v.
- Federal Telegraph Company, correspondence and report. 1v.
- 36, 121 (Oversize) Flow of Water in Pipes, 1934-1956, correspondence and illustrations. 1f., 1v.
- 36 Forestry, 1920-1931, correspondence, maps, reports, and reprints. 1v.
- Francis, James B., Lowell Water Power, 1864, and experiment notes, 1877. 2f.
- Franzius, Otto, 1931, correspondence. 1v.

Box

36 Freeman Fund, Travelling Scholarships, administered by the American Society of Civil Engineers, American Society of Mechanical Engineers, and the Boston Society of Civil Engineers:

Acknowledgement from American Society of Mechanical Engineers, 1926, certificate. 1f.

Applications, 1932, correspondence, iv.

General correspondence, 1930-1932. 1v.

Investment file, 1924-1930, correspondence, stock transaction memoranda. 1v.

List of recipients, 1938. 1f.

Student reports and correspondence. 1f., 13v.

Barnes, Donald P., 1932

DeFabritis, Laurence, 1932

Drisko, John B., 1927-1932

Kittredge, Clifford P., 1930-1932

Knapp, Robert, 1929-1932

Kramer, Hans, 1930-1932

O'Brien, Morrrough P., 1927-1932

37 Reynolds, Kenneth C., 1927-1932

Rouse, Hunter, 1929-1932

Straub, Lorenz G., 1927-1932

VanLeer, Blake R., 1927-1928

Wheaton, Herbert H., 1932

Witaker, R.W., 1930-1932

Woodburn, James G., 1929-1932

John Fritz Medal Board, 1913-1929, clippings, correspondence, and reprints. 1f., 3v.

Box

- 37 Fuel Oil Engine Company, 1909-1922, correspondence. 1v.
- General Electric Company, Legal Opinion offered on Revenue Act., H.R. 1438, 1909. 1v.
- German Club, Lawrence, Mass. 1883, manuscript booklet. 1f.
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	36	Taming the Mississippi, June 1927
	37	Needed: More Science in Flood Control, December 1927.
	38	National Hydraulic Laboratory, Hearings before the Committee on Rivers and Harbors, U.S. House of Representatives, S. 1710, April 1928.

<u>Box</u>	<u>Folder</u>	
120	39	Frederick Kent Copeland, December 1928.
	40	The Engineering Accomplishments of Mr. Hoover, April 1929.
	41	The Historical Development of Hydraulic Researches and Some Noteworthy Hydraulic Laboratories in America, 1929.
	42	Progress in Hydraulic Laboratory Research, 1929.
	43	Mastering Rivers in the Laboratory, January 1930.
	44	Engineering Data Needed on Earthquake Motion, April 1930.
	45	Design of a National Hydraulic Laboratory, June 1930.
	46	Engineering Data Needed on Earthquake Motion for Use in the Design of Earthquake-Resisting Structures, June 1930.
	47	The Italian Earthquake of July 23, 1930, December 1930.
	48	Flood Control on the River Po in Italy, 1930.
	49	National Hydraulic Laboratory, Progress Report, February 1931.
	50	Earthquake Engineering, December 1931.
	51	<u>Flow of Water in Pipes and Pipe Fittings</u> , 1941, (posthumously).

Addendum to John Ripley Freeman, 1855-1932, Papers, 1827-1952

SCOPE AND CONTENT NOTE:

The papers were received in May 1983. The materials have not been physically integrated into the original collection, but were arranged in a parallel manner and placed at the end of the collection.

The materials support the documentation contained in Series II, III, and IV, and consist of correspondence on water conservation and project notebooks for hydraulics projects in Rochester, New York; Pittsburgh, Pennsylvania; Providence, Rhode Island; and the panama Canal.

The addendum comprises the following series:

Series II. Correspondence

Series III. Alphabetical Subject Files

Series IV. Hydraulic Projects Records

Box

Series II. CORRESPONDENCE

122

April - July 1909

Series III. ALPHABETICAL SUBJECT FILES

Conservation of Resources, 1908-1911

Series IV. HYDRAULIC PROJECTS RECORDS

UNITED STATES

New York

Rochester City Planning Bureau, 1924-1929, correspondence, newsclippings, and blueprints.

Pennsylvania

Pittsburgh Civic Commission, 1909-1913, correspondence, newsclippings.

Rhode Island

Providence Engineering Works, 1899-1904, correspondence.

PANAMA

Panama Canal Project, 1895-1916, correspondence, photographs, reports on landslides, notes, newsclippings, and blueprints.

Addendum to John Ripley Freeman, 1855-1932, Papers, 1827-1952

SCOPE AND CONTENT NOTE:

These papers were received in August 1984. The materials were not physically integrated into the original collection, but were arranged in a parallel manner and placed at the end of the collection.

The materials complement the documentation contained in Series III and IV. The three folders of Series III material relate to an address given by JRF to the M.I.T. Alumni Association in 1922. The remainder and bulk of the addendum, Series IV material, relates to JRF's surveys in the early twentieth century of navigation and flood problems in China, primarily along the China Grand Canal and Yellow River and along the Hwai River System in the Kiang-su Province.

In November 1917 the Chinese Government's China Grand Canal Improvement Board (CGCIB) contracted with JRF's employer, the American International Corporation, to conduct surveys to improve navigation and flood control on the Grand Canal and Yellow River. These surveys were conducted from 1918 to 1921 by the engineers of the CGCIB under the direction of JRF as consulting engineer, with Joseph Ripley and Thomas Wiggins as chief engineers. During his survey of the Grand Canal/Yellow River, JRF became interested in the flood problems of the Hwai River system. Later, in 1921 to 1923, in a separate project, JRF investigated this river system.

The project files are arranged in two groups reflecting the separate projects, and within each group the files are arranged alphabetically by type of material. The accession came to the Archives in bound, labeled volumes which JRF created. During processing, the volumes were unbound and foldered; JRF's titles were maintained when possible. Duplicate copies of reports were kept when they included annotations. One cubic foot of unannotated duplicates was removed from the collection.

For summaries of JRF's China projects, see the reprints in box 120: "The Grand Canal of China," 1919 (folder 28) and "Flood Problems in China," 1922 (folder 30).

Box Folder

Series III. ALPHABETICAL SUBJECT FILE

123 1-3 M.I.T. Alumni Association - J. R. Freeman Remarks at the Tech Alumni Banquet, Washington, D.C., 2 February 1922

Series IV. HYDRAULIC PROJECTS RECORDS

CHINA (see also box 117)

I. China Grand Canal and Yellow River

Administrative Records

4-5 Auditor's expense accounts, 1918-1919

6-8 Auditor's expense accounts, 1919-1920

9-10 Correspondence, contracts re: agreement between the government of China and the American International Corporation, 1917-1920

11-13 Employment file, 1917-1920

14-16 Selection of Chief Engineer, 1917-1918

Background readings and research notes

17 Background reports by C. M. Bishop, 1916; J. H. Wilson, 1906; and S. Morrison, n.d.

18-22 China Canal Studies - Notes Upon Improvement of Rivers by Professor Cross - 3 volumes

123-124 23-24 China Canal Studies - Notes Upon Mississippi River by Professor Cross

124 25 China Flood Data

26 Data on the Training of Rivers

27 Grand Canal China Library Notes

28-30 Miscellaneous Reports - Yellow River - Conservancy - Reclamation

31-32 Photostats of Papers - Royal Geographic Society

33-35 Previous Engineering Studies

36 River Data Photostats

<u>Box</u>	<u>Folder</u>	
124	37	Chihli River Commission, Annual Reports, Blueprints, 1918-1922
	38-39	China Famine Fund - American Committee, 1921
		<u>Correspondence</u>
		Correspondence with J. R. Freeman
	40-42	From the American International Corporation, May 1918- November 1921
	43	To the American International Corporation, May 1918 - January 1922
	44-45	To and from Charles A. Stone (A.I.C.), December 1918 - November 1922
		From Joseph Ripley
	46	June - November 1918
125	47-48	July 1918 - March 1919
	49-50	March - June 1919
	51-52	July - December 1919
	53	To Joseph Ripley, September 1918 - July 1919
	54-55	To and from O. J. Todd, November 1921 - December 1932
		From Thomas Wiggins
	56	July 1919 - November 1921
	57-61	January - November 1920
	62	November 1920 - February 1922
	63	To Thomas Wiggins, June 1919 - February 1922
	64	From engineering assistants, March - July 1919
	65-66	To and from engineering assistants, 1918-1922

<u>Box</u>	<u>Folder</u>	
125		Emergency copies of outgoing letters
	67-68	1918-1922
126	69	March - October 1920
		Correspondence with Thomas Wiggins
	70	To the Grand Canal Improvement Board, February 1920 - February 1921
	71	To P. W. Henry (A.I.C.), January - April 1920
		Data Files
	72	Data sheets - miscellaneous, n.d
	73	Estimates for concrete in South Yellow River Lock, 1920
	74-76	Grand Canal Data, 1919
	77-78	Hydrographs, 1920
	79	Rainfall and discharge records
		Reports and writings
	80	January - July 1918 - Grand Canal Preliminary Programs by J. R. Freeman and J. Ripley
	81	February 1919 - China Grand Canal Surveys - Progress Report by J. R. Freeman. Revised by J. Ripley
	82	March 1919 - Final report of the Hydrographic Division of the GCIB. By R. D. Goodrich
	83	January 1920 - China Grand Canal Investigations of 1918. Reports of J. Ripley and J.R. Freeman
	83	Volume 1
	84-87	Volume 2 (Appendices A-E)
126-127	88-90	Volume 3 (Appendices F-M)
127	91-92	Volume 4 (Appendices N-V)
	93	May 1920 - Notes by J. R. Freeman

<u>Box</u>	<u>Folder</u>	
127	94	October 1920 - Irrigation and Fertilization Along the Yellow River, by J. R. Freeman
	95-96	December 1920 - First draft of the final report - Report of Preliminary Surveys for the Improvement of the China Grand Canal, by T. Wiggins. Submitted to the Grand Canal Improvement Board
		January 1921 - Final Report
	97-99	Volume 1
	100	Appendices 2 and 3
	101-103	Volume 2
	104-107	January 1921 - A Narrative Concerning Investigations on the China Grand Canal in 1918-1920, by J. R. Freeman. Submitted to the American International Corporation
	108	September 1921 - Review and Conclusions, by J. R. Freeman to the Grand Canal Improvement Board
	109	November 1921 - A New Yellow River Menace and the Remedy Proposed, by J. R. Freeman
		Trips to China
	110-111	1916-1917, China Tour
128	112-115	1916-1917, Japan and China
	116-118	1919-1920, Letters of introduction, newsclippings, invitations
		Working files
	119-120	October 1917 - June 1919
	121-122	January - December 1918
	123-125	December 1918 - July 1919
	126-128	July - December 1919
	129-132	January 1920 - February 1924
129	133-137	May 1922 - November 1923
	138-142	January 1926 - December 1929
	143-144	January 1930 - November 1932

<u>Box</u>	<u>Folder</u>	
129	145	Yangtse River Commission Technical Committee - First Annual Report, January 1923
		Yellow River Bridge Related Records
	146-148	Background readings and research notes
	149	Cost estimates
	150	Report - Proposal and argument, by J.R. Freeman, May 1921
		Working files
	151-154	Volume 1, March - September 1921
130	155-157	Volume 2, September 1921 - April 1924
		<u>II. Hwai River System - Hiang-su Province</u>
	158	Background readings - American Red Cross Report of the Board of Engineers of the Hwai River Conservancy Project, 1914
		Data files
	159-161	Blueprints of Hwai River Region, by M.T. Yu
		Reports
		September 1920 - A New project for Flood Relief in the Hwai River and other Districts in the Kiang-su Province by J. R. Freeman
	162-163	Copy 1
	164-165	Copy 2
	166	Copy 3
	167-168	Blueprints and data sheets
		May 1930 - Chinese Government Hwai River Commission Report
		Working files
	171-172	1920-1922
	173-174	1922-1925

