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A Brief History of the Washington Monument and Grounds, 1783- 1978.

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The Washington Monument at Washington, D.C.

A. Significance:

This towering 555-foot-high white marble obelisk, built between 1848 and 1884 with funds from public subscriptions and Federal appropriations and modelled after ancient Egyptian monuments, commemorates the achievements and unselfish devotion to public service of George Washington, Commander-in-Chief of the Continental Army during the War for American Independence, 1775-1783, and the first President of the United States under the Constitution, 1789-1797. Architectually, the shaft is the most grandoise and beautiful of the heroic-sized historical memorials erected in the United States during the 19th century.[1]

The construction of the first 150 feet of the obelisk followed a plan that was prepared by the noted architect Robert Mills and that of the remaining two-thirds of the shaft was built on the basis of data provided by the famous scholar George Perkins Marsh. Superintendents of construction of the Washington Monument were: Robert Mills, 1848-1855, and Lieutenant Colonel Thomas Lincoln Casey, Corps of Engineers, U.S. Army, 1878-1888. The cost of construction of the obelisk from 1848 to 1884 was $ 1,187,710.31 and the total cost of construction of the monument and improvement of its grounds from 1848 to 1888 was $ 1,409,500.[2] Of this latter sum, about $ 300,000 was provided by private contributions to the the Washington National Monument Society and $ 1,109,500 by the appropriations of Congress. The Washington Monument was first opened to visitors on October 9, 1888 and by March 7, 1969, 50,000,000 visitors had visited the top of the monument.

1. For a checklist of the chief memorials erected in the 19th century to commemorate historical events in the United States, see Appendix No. 1. The Washington Monument was the third major monument to be constructed in the U.S., being proceeded by the Washington Monument at Baltimore (1815-29) and the Bunker Hill Monument (1825-42).

2. See Appendix No. 2 for Annual Cost of Construction of Washington Monument and also for Federal Appropriations.

B. History of the Washington Monument, 1833-1878:

1. Early Efforts to Memorialize George Washington, 1783-1860:

In recoginition of George Washington's great military services to his country during the War for American Independence, 1775 to 1783, the Continental Congress on August 7, 1783 resolved "that an equestrian statue of General Washington be erected at the place where the residence of Congress shall be established." The statue was to be of bronze and " the General[was] to be represented in a Roman dress, holding a truncheon in his right hand, and his head encircled with a laurel wreath." To be inscribed on the marble pedestal of the statue was the statement that this statue was built " in honor of George Washington, the illustrious Commander in Chief of the Armies of the United States of America during the war which vindicated and secured their liberty, sovereignty, and independence." The "principal events of the war in which General Washington commanded in person, viz: the evacuation of Boston, the capture of the Hessians at Trenton, the battle of Princeton, the action of Monmouth, and the surrender of York[town]" also were to be represented.[3]

In accordance with this resolution, the French engineer, Major Charles Pierre L'Enfant, in 1791, provided a location for this statue in his plan for the new Federal city of Washington which was prepared under the immediate direction of President George Washington. It was to stand on a reservation at the intersection of the lines west and south of the future Capitol and the President's House. No action, however, was taken in 1791 to actually erect the statue.

On December 23,1799, eight days after the death of Washington, U.S. Representative John Marshall of Virginia, later the distinguished Chief Justice

3. Tactfully, the Continental Congress did not include the great battles- at Long Island, Fort Washington, Brandywine, and Germantown- in which General Washington had also commanded but been defeated.

of the United States, proposed "that a marble monument be erected by the United States in the Capitol, at the city of Washington, and that the family of General Washington be requested to permit his body to be deposited under it." No action was taken at that time.

On May 9,1800, the Congress recommended that instead of the equestrian statue contemplated in the resolution of 1783 a " mausoleum of American granite and marble, in pyramidal form, one hundred feet square at the base and of a proportionate height should be erected in Washington. Although the House of Representatives on January 1,1801, passed a bill appropriating $ 200,000 for the construction of the proposed mausoleum, the Senate did not concur and the plan came to naught.

Not until 1816 was the subject of a memorial to Washington again seriously considered. In that year, as a result of the efforts of the State of Virginia to have the remains of Washington buried in Richmond, a Congressional committee proposed that a tomb be placed in the foundations of the Capitol and that a monument be erected in his memory. Bushrod Washington, nephew of the Revolutionary Commander-in-Chief and then proprietor of Mount Vernon, refused to consent to the removal of the remains, because Washington had expressly requested that he be buried at Mount Vernon. Congress therefore indefinitely postponed consideration of the bill. In 1832, another Congressional request, vigorously supported by Henry Clay, the great Whig leader, that the remains be brought to Washington for burial in the Capitol, was again refused, this time by John A. Washington, who had come into possession of Mount Vernon.

In 1832 a marble mausoleum was constructed under the Capitol's Rotunda as the last resting place for the bodies of both George and Martha Washington, but this catafalque has remained vacant from 1832 to this day.

In July 1832, the Congress next authorized the then large sum of $ 5,000 for a marble statue of Washington to be executed by " a suitable artist" and displayed in the Rotunda of the Capitol. Horatio Greenough, a noted Boston sculptor then working in Italy, won the commission. He worked on it for eight years. His neoclassic 20-ton statue portrayed Whashington(twice life size) in a Roman toga, seated, with bare chest and loosely draped. The Victorian public was shocked when the statue was unveiled in the Rotunda in 1841. The dignified general appeared, it was said as if "entering or leaving a bath." Shortly after this Congress found it inappropriate for the Rotunda floor and it was removed to the grounds, where it suffered the whims of the weather until 1908, when Congress finally transferred the statue to the Smithsonian Institution for preservation and exhibit.

In 1853, Congress finally provided for the erection of an bronze equestrian statue of General Washington in the District of Columbia, appropriating $ 50,000 to carry out the Continental Congress resolution of 1783. Clark Mills, an able young sculptor from Syracuse,N.Y., who had just completed the celebrated statue of Andrew Jackson which still stands in Lafayette Square in the National Capital, was selected to undertake the work. Seven years later, the Mills statue was erected in Washington Circle at the joint intersections of Pennsylvania and New Hampshire Avenues with K and Twenty-Third Streets, Northwest, and was unveiled on February 22,1860, with impressive ceremonies in the presence of a distinguished gathering. The face of the statue was modeled from Houdon's celebrated bust of the General and the revolutionary uniform(and not the Roman toga specified in the resolution of 1783) was copied from a revolutionary one known to have been worn by Washington.

Thus after a lapse of 87 years from the first proposals to memorialize Washington in the District of Columbia, Congress had provided for the creation

of two statues and one empty tomb for this purpose.

2. The Washington National Monument Society, 1833-1876 :

Following the failure of Henry Clay's efforts to secure Federal appropriations for a national monument in 1832, the Washington National Monument Society was formed in the District of Columbia by 20 interested gentlemen in September 1833.[4] The association was largely the result of the energetic efforts of George Watterston, FIRST Librarian of Congress, and the membership included Col. George Bomford, Chief of Ordnance, Peter Force, historian and archivist, Col. James Kearney, of the Topographical Engineers, John Rogers of the U.S. Navy, several journalists, bankers, public officers, and businessmen.

Chief Justice John Marshall, then 78, was erected its first president. Upon his death two years later in 1835, former President James Madison was erected to succeed him. The Society's other first officers were William Cranch, Chief Justice of the District Court, First Vice President; Peter Force, Second Vice-President; Thomas Carberry, former Mayor of Washington, Third Vice-President; Samuel Harrison Smith, founder and editor of the National Intelligencer, Treasurer; and George Watterston, First Secretary.

During the period of Madison's leadership, the systematic collection of funds began. As the Society wished the enterprise to be really popular and national in scope, contributions were initially limited to one dollar a year from any person.

4. This Society was probably modeled after the Bunker Hill Monument Association, which had been founded by 50 interested gentlemen in 1823 to acquire and preserve the Bunker Hill Battlefield at Charlestown, Mass., and to erect a monument to commemorate that event of June 17, 1775. The Association had held an architectural contest for the design of the monument in 1825. Public fund drives were conducted throughout New England in 1825-26 and in the 1830's to raise the $ 156,000 necessary to erect the obelisk and improve the grounds. The Bunker Hill Monument was completed in 1842. Except for $ 7,000 provided by the State of Massachusetts, the money came entirely from private contributions.

Agents for the collection of contributions were appointed for each State and Territory. In addition to individual contributions, money was collected on special occasions at public gatherings. The economic distress that spread over the nation for several years after the Panic of 1837, however, greatly interfered with the initial efforts of the Society to collect funds, and five years later, by the end of 1838, only slightly more than $ 30,000 had been raised.[5]

Meanwhile, however, in 1836 the Society had advertised a competition for designs of the proposed monument. Of those submitted, that of Robert Mills of South Carolina, architect of the recently (1829) completed Washington Monument in Baltimore, was chosen.[6] "This design," Mills explained," embraces the idea of a grand circular colonnaded building, 250 feet in diameter and 100 feet high, from which springs an obelisk shaft 70 feet [square] at the base and 500 feet high, making a total elevation of 600 feet. This vast rotunda [a circular Greek temple], forming the grand base of the Monument, surrounded by 30 columns of massive proportions, being 12 feet in diameter and 45 feet high, elevated upon on lofty base... of 20 feet elevation and 300 feet square, surmounted by an entablature of 20 feet high and crowned by a massive balustrade 15 feet in height."

Above the roof of the central portico was to stand a colossal toga-clad figure of Washington driving a battle chariot drawn by four Arabian steeds. Around the rotunda, which Mills called the "National Pantheon," were to be placed the statues of the 56 Signers of the

5. The Bunker Hill Monument Association was also experiencing difficulties in rising funds. Two funds drives, one in 1833 and the other in 1840, however, collected a total of $ 72,000, enough to complete the Bunker Hill project in 1842.

6. Mills had also entered the architectural competition for the design of the Bunker Hill Monument in 1825 and submitted a plan for an obelisk. No prize, however, was awarded and none of the entries were used in the actual design of the obelisk.

Signers of the Declaration of Independence. Space was also allotted for statues of other leaders of the American Revolution and for paintings of battles and other scenes of that period.

In the center of the proposed monument provision was to be made for a tomb of Washington, in order that his remains might be received should it ever be desired to bury them in the National Capital. "A railway" was to transport visitors to an circular observatory 20 feet in diameter to be located atop the square shaft. Mills estimated the cost of constructing his design at one million dollars.

With only $ 30,000 in hand, additional funds was the most pressing problem of the Society. In 1839, therefore the original limitation of contributions to one dollar a person was temporarily removed so that the takers of the national census in 1840 could freely solicit donations. Contributions, however, were still woefully inadequate, and in 1845, the Society definitely removed the limitation on gifts to one dollar. In order to encourage donations, large numbers of lithographs of the proposed monument and of Gilbert Stuart's portrait of Washington in Faneuil Hall, Boston, were made for distribution to contributors. Entertainments, fairs, and social gatherings were held in many communities by groups of interested women to augment the funds raised by direct contribution. As a result of these efforts over a 14 year period, a grand total of about $ 87,000 was gathered by 1847.

The Society now believed that it had collected enough money to begin construction, but it as yet had no site for the structure. In 1838, and again in 1844, Congress had discussed the proposal of the Society that the Federal Government authorize the erection of the monument on public land in the City of Washington, but no action had been taken. In early 1848,

the Congress passed a resolution authorizing the Washington National Monument Society to erect the proposed monument upon such portion of the public grounds in the city of Washington as might be selected by the President of the United States and by the Society. The site selected consisted of 37 acres and was the same site, Reservation No. 2, on which L'Enfant had planned in 1791 to locate the equestrian statue of Washington that the Continental Congress had voted to erect in 1783 at some future date.[7] Soil tests, however, revealed that the intended site due south of the White House and due west of the Capitol was too marshy to support the weight of the monument. A site about 100 feet to the southwest was chosen and this altered the monument's north-south alignment with the White House and also its east-west alignment with the Capitol.

Despite the compromise with the originally planned symmetry, the final site offered an excellent view of the Capitol and afforded ready access to building materials brought into the city by river barges on the Potomac or by the new Baltimore and Ohio Railroad, which entered the city just 10 blocks from the site of the monument near 14th and B Street, South. The fine-grained white marble was to come from quarry of Thomas Symington, known as the Beaver Dam Quarry, in Baltimore County, Md.. The stone and sand were to come from nearby quarries in Maryland and Virginia.

3. Construction of the Washington Monument, First Phase, 1848-1860:

On July 4,1848, Benjamin B. French, Grand Master of the Washington, D.C, Masonic Lodge, laid the corner stone. He used the silver trowel Washington had employed at the Capitol in 1793. The occasion was a national celebration

7. The deed granting the land to the Society was executed April 12,1849 and the site is described as Reservation No. 3.

and between 15,000 and 20,000 people were present. Robert C. Winthrop, Speaker of the House of Representatives, delivered the two-hour keynote address. Also in attendance were President James K. Polk, future Chief Executives, James Buchanan, Abraham Lincoln, and Andrew Johnson; George Washington Parke Custis, the foster grandchild of George Washington, Mrs. Alexander Hamilton, and Mrs. Dolley (James) Madison were also present. New attention was focused upon the project by the cornerstone ceremony and "give a penny" appeals went out to the Nation's 3,000,000 school children. These efforts raised the total of donations to about $ 230,000, a substantial sum but still far short of the estimated $ 1,000,000 needed to construct the 600 foot tall memorial.

In the interest of economy, and shortly after the beginning of work, the original height of the obelisk was reduced from 600 to 500 feet, and the construction of the 100 foot high and 250 feet circular "National Pantheon" was deferred to some future date. The original foundation of the obelisk, as constructed in 1848, was 80 feet square at the bed of the foundation, and this bed was placed seven feet eight inches below the general level of the ground about the structure. The foundation was 23 feet 4 inches thick, and was 58 feet 6 inches square at its top. It was built of large pieces of bluestone gneiss, the rubblestone put in the masonry as it came from the quarry, the interstices between the masses being filled with spawls and a mortar composed largely of pure lime and sand. The foundation was projected 15 feet 8 inches above ground level.[8]

Construction proceeded under the supervision of architect Robert Mills, who was also creating the U.S. Treasury, Patent Office, and Post Office

8. In 1878, engineers studying the foundation discovered that it was inadequate to support the projected height and weight of the monument. The foundations therefore had to be modified and strengthened.

buildings in Washington during this period. The shaft of the obelisk was commenced 55 feet 1½ inches square at the base. The walls were 15 feet thick and faced with large-grained white marble, in blocks of two feet height and from 15 to 18 inches in thickness. The marble was sawed without reference to the quarry bed, and rubbed smooth. The marble face was backed by walls of blue gneiss-stone rubble construction.

By 1854, after six years of work, the obelisk had been built to a height of 152 feet, slightly less than one-third of its projected height and the Society had expended about $ 230,000 for this work, thus exhausting its funds. In an effort to raise more funds, the Society had invited all the States, Territories, counties, cities, patriotic citizens, and even foreign countries to contribute stone blocks to embellish the interior walls. These stones, which were to be provided by contributing localities, were to be approximately 4 feet long and 2 feet high, and were to bear patriotic inscriptions. Among the first presented were stones from Maine, Delaware, and the Franklin Fire Company of Washington, D.C, The first went into place at the 30 foot level in 1849. Eventually, all the States and more than a score of cities, and countries such as Greece, Turkey, China and Japan contributed a total of 190 memorial blocks that were set at 10 foot intervals along the stairs.

Pope Pius IX also donated a marble slab from the Temple of Concord in Rome but this stone never reached its intended place in the monument. The acceptence of this stone was objected to by the American Party, a secret antialien and anti-Catholic political organization often called the "Know-Nothing Party", so named because when asked about their activities its members replied," I don't know." On the night of March 5, 1854 a group of masked men attacked the watchman at the monument and stole "the marble block

from Rome." It was never seen again and is believed to have been shattered and dropped into the Potomac River.

Its treasury exhausted, the Monument Society appealed to Congress for assistance, Plans had been made to pass a resolution on February 22,1855, appropriating $ 200,000 to continue construction. Its adoption seemed assured, when word was received that on the previous night member of the American Party had seized the Monument Society's offical records and called a meeting to elect new officers. On receipt of this news, the proposed appropriation was laid on the table and never acted on. Meanwhile, adherents of the American Party who held certificates of membership in the Society met, ousted the old officers, and chose their own representatives. From 1855 to 1858 there were, in effect, two Washington National Monument Societies, the American Party body, which controlled the records and the monument, and the disposed old body which refused to recognize the legality of the action of the rival organization. To further complicate matters, Architect Robert Mills, who had been supervising construction since 1848, died on March 7, 1855.

The American Party now attempted to complete the monument and during the period 1855 to 1858 they succeeded in raising the obelisk by four feet, from the 152 to the 156 feet 4 1/8 inch level, by using marble on the grounds that had been rejected by the master mason. These four feet of inferior stone plus two additional feet of badly weathered stone later had to be removed. The efforts of the American Party to raise funds also failed. The Know-Nothing Party collapsed politically in 1857 and on October 20,1858 they finally surrendered control of the old Society's records to the former officers. In an effort to prevent a repetition of this . . . . debacle, an Act of Congress approved February 26, 1859, incorporated the Washington National Monument Society " for the purpose of completing the erection now in progress of a

great National Monument to the memory of Washington at the seat of the Federal Government." A new national fund drive in 1860 netted only $ 88.52. After the expenditure of about $ 300,000 from 1833 to 1860, private efforts to complete the great monument to Washington had failed and the outbreak of the Civil War in 1861 made the continued existence of Washington's united nation equally doubtful.[9]

4. The Unfinished Monument, 1860-1876:

When construction on the monument ceased in 1856, the obelisk had obtained a total height of 156 feet 4 1/8 inches. The shaft at its base was 55 feet 1½ inches square and at its top the sides averaged 48 feet 9 5/8 inches in length. The interior well was 25 feet 1 inch square. The axis of the shaft leaned one and 3/4 inches to the north. The thickness of the walls at the base were 15 feet and at the top 11 feet 5/16 inches. The weight of the obelisk and its foundation was about 32,113 tons.[10]

During the Civil War(1861-65) this unfinished stub stood untouched. The 37 acres of grounds surrounding was turned into an open grazing pen for cattle, sheep , and pigs that were used to supply meat for the Union Army. A slaughter house, stables, and storehouses stood on the property and the area was known as the "Washington Monument Cattle Yard." The grounds also served as a remount depot, as a camp ground, and as a drill ground for Union troops.

For 20 years, from 1856 to 1876, this "hollow-over sized chimney" stood in its unfinished state. Many did not admire its design. An editor of the New York Tribune commented on July 1,1875:

9. The Washington National Monument Society,however, was more successfull in raising funds than were similar associations formed prior to the Civil War for the purpose of erecting great commemorative Monuments in the United States. Societies formed at Trenton in 1843, at Bennington,Vt., in 1853, at Saratoga(Old Schuylerville),N.Y. in 1859 to construct heroic-scaled battle monuments were unable to rise even enough money to start construction prior to 1861.

10. Weight of the shaft, 23,794 tons, weight of the foundation, 8,139 tons, Weight of earth on foundation, 243 tons, Total* 32,176 tons.

"The appeal for a Fourth of July contribution to the Washington Monument will not amount to much. Public judgement on that abortion has been made up. The country has failed in many ways to honor the memory of its first President, but the neglect to finish this Monument is not to be reckoned among them. A wretched design, a wretched location, and an insecure foundation match well with its empty treasury."

The centennial observation of the 100th birthday of the United States was to once again revive public interest in the Washington Monument project and to give its supporters one more opportunity to convert a disaster into a brilliant success.

5. The National Government Completes the Monument on a New Plan, 1876-1888:

A committee was appointed by the House of Representatives to confer with the Washington National Monument Society and the Chief of Engineers, U.S. Army, in January 1873 to study the problems related to completing the obelisk. Lieutenant W. L. Marshall, Corps of Engineers, submitted a report on the subject in May 1874. He recommended that the height of the shaft be reduced from 500 feet to 485 feet, due to the fact that the area covered by the foundation was insufficient to carry the load without causing excessive pressures on the marshy soil. On July 5, 1876, Senator John Sherman, of Ohio, introduced a concurrent resolution for the purpose of completing the monument. This resolution read in part: "We, the Senate and House of Representatives in Congress assembled, in the name name of the people of the United States, at this, the beginning of the second century of national existence, do assume and direct the completion of the Washington Monument in the City of Washington and instruct the committees on appropriations of the respective Houses to propose suitable provisions of law to carry this resolution into effect."

The resolution was passed unanimously in two days by both Houses and in obedience to its instructions a bill for the completion of the Washington Monument was at once reported into the House of Representatives and was signed into law by President Ulysses S. Grant on August 2, 1876. This statute appropriated $ 200,000 to continue construction on the monument, to be expended in four equal installments. It also provided for the transfer to the United States of the ownership of the 156 foot portion of the shaft already built by the Washington National Monument Society, and finally, it created a Joint Commission to direct and supervise the construction of the monument. The Commission, which was to report annually to Congress on the progress of the work and the expenditures, was established on September 2, 1876 and consisted of President Grant, Edward Clark, Architect of the Capitol, James G. Hill, Supervising Architect of the Treasury, Brig. Gen. Andrew A. Humphrey, Chief of Engineers, (of the US Army) and William W. Corcoran, First Vice-President of the Washington National Monument Society. To handle the details of construction, the Joint Commission established a Building Commission that consisted of the Architect of the Capitol, the Supervising Architect of the Treasury, the Chief of Engineers, and the First Vice President of the Society. On June 25,1878, General Humphreys delegated his authority to Lieutenant Colonel Thomas Lincoln Casey, Corps of Engineers, who became the Army engineer in charge of the project. Prior to this, on January 19, 1877, the Washington National Monument Society formally deeded the uncompleted obelisk and its grounds back to the the United States Government.

Since the early days of its construction, apprehension had been felt about the foundation of the shaft. The Act of August 2,1876 directed that a thoroggh study be made of this subject. After careful boring, examinations, and tests of the earth of the site, a board of Army Engineers, in reports dated April 10 and June 15,1877, concluded that the existing foundation was of

insufficient spread and depth to sustain the weight of the proposed structure. It was also stated that it was feasible to bring the foundation to the required stability by "hooping in" the earth upon which it stood.[11] As a result of this study, a Joint Resolution of Congress on June 14,1878, authorized the Joint Committee to expend $ 36,000 to give greater stability to the obelisk, so that the height could be safely carried to 525 feet.[12]

Construction on stablizing the foundation began on January 28,1879 and continued until completed 16 months later on May 29,1880. Planned and supervised by Lt. Col. Thomas L. Casey, the cost of this project was $ 94,473.92. This work consisted in enlarging the area of the foundation by digging away 70% of the earth under the old foundation, and to a depth of 13 feet 6 inches beneath it, and replacing this earth with a mass of concrete extending 18 feet within the outer edges of the old foundation, and 23 feet 3 inches without the same line, thus giving a new foundation 126 feet 6 inches square, and enarging the area of the foundation from 6,400 square feet, to 16,000 square feet. To distribute the pressure of the shaft over this new foundation, the old rubble-stone base was torn away from under the walls of the shaft, and replaced by a concrete underpinning extending out into the new concrete slab. In this work 51% of the cubical contents of the old stone foundation was removed, and 48% of the area of the shaft undermined. As finished, the new foundation was 36 feet 10 inches deep. So skillfully was this substitution that the entire structure settled only about two inches.

While work on the foundations was underway, two plans to alter the original Mills' design of the obelisk were considered by the Joint Commission in 1878-79. The first was submitted by

11. The board consisted of Lt. Col. John D. Kurtz, Lt. Col. Quincy A. Gilmore, and Lt. Col. James C. Duane.

12. A joint resolution of June 27,1879 appropriated an additional $ 64,000 to complete the task of strengthening the foundation.

William Wetmore Story, a Boston sculptor who had done some work for the Bunker Hill Monument. Story proposed that the obelisk be converted in a giant and ornate "Lombardy Tower." In order to have constructed the shaft on the Story design some 41½ feet of the existing monument would have had to be taken down, in order to rebuilt it again with the windows located in the lower portion of the shaft just above the proposed loggia. After careful consideration, the Story plan was rejected in 1879.

The second plan, suggested by George Perkins Marsh, scholar and then U.S. Minister to Italy, was adopted and greatly altered and improved both the original Mill's design, eliminating the proposed flat apex of the obelisk.[13] Marsh had studied the obelisks of ancient Egypt and he suggested in 1878: "Throw out all the gingerbread of the Mills design and keep only the obelisk." Based on his study of the best-known Egyptian obelisks he had also determined that their heights were almost precisely ten times their base dimensions. Thus if the base of the Washington shaft was 55 feet square at the base, the monument should raise to a height of 550 and not to 600 feet as proposed in the Mills design, or to only 500 feet as proposed in the money-saving plan. In February 1879, Marsh further suggested: "There will, no doubt, be people who will be foolish enough to insist on a peephole somewhere, and if they must be gratified, the window should be of the exact form and size of one of the stones, and provided with a close-fitting shutter colored exactly like the stone, so that when shut it would be nearly or

13. George Perkins Marsh, 1801-1882, lawyer, diplomat, brillant scholar, and the father of the Conservation Movement in the United States, was born at Woodstock, Vermont, in 1801. Graduating from Dartmouth College in 1820, he studied law and was admitted to the bar at Burlington, Vermont, in 1825. He entered politics as a Whig in 1834 and in 1849 was appointed Minister to Turkey, in which capacity he served until 1854. He became a Republican in 1856, and from 1860 until his death in 1882, was United States Minister to Italy. Marsh's great seminal work, Man and Nature, or Physical Geography as Modified by Human Action, was first published in New York City in 1864. This volume became both the opening gun and the intellectual bible of the subsequent leaders of the Conservation Movement in the United States during the 19th century.

quite imperceptible from below."

By April 19,1880, the Joint Commission for Completing the Monument, the Building Committee, and the Congress, had agreed to adopt Marsh's suggestions as to the height,- 555 feet, and that its form would be obelisk of the proportions and the windows of the size proposed by Marsh. Work on the foundations was completed on May 29,1880. On June 7, 1880,work began on covering a portion of the new foundation with the earth that had been excavated from around and beneath the original foundation. This embankment, completed on July 10, provided a terrace around the monument that was 30 feet wide and 17 feet higher than the level of the surrounding land. In 1881 this terrace was further enlarged to form a square that was 175 feet wide at the crest and 220 feet square at the foot of the slopes,

Investigation of the shaft revealed that the stones set by the American Party in 1855-56 atop of the shaft had disintgrated and that the marble facing had been displaced and spalled. Three courses of these stones, or six feet in height, were removed from the top of the obelisk between July 15 and August 2,1880, thus reducing the monument to a height of 150 feet. The task of setting new stone on the obelisk started on August 7,1880 and by the end of the year 26 feet had been added to the height of the monument, thus bringing the shaft up to the 176 foot level. The new fine-grained white marble was provided under contract by Hugh Sisson from the same Beaver Dam Quarry near Baltimore that had furnish the marble for the first 156 feet. From the 0 to the 150 feet level the marble was backed by bluestone gneiss, from the 150 feet level to the 452 foot level the marble facing was backed by New England granite, and the remaining 103 feet of the shaft, from the 452 to the 555 foot levels, was constructed entirely of marble.

The shaft reached the 250 foot level in 1881, the 340 foot level in 1882, the 410 foot level in 1883, and the cap stone was afixed at the 555 feet 5 1/8 inch level on December 6, 1884. The shaft of the obelisk was 500 feet 5 1/8 inches high and the pyramidion or apex was 55 feet tall. The shaft at the top is 34 feet 5½ inches square and its walls at this point are 1½ feet thick. The weight of the shaft is 81,120 tons and of the foundation 36,912 tons. The cost of construction from 1848 to 1884 was approximately $ 1,187,710.31. Of this sum, the Washington National Monument Society had provided about $ 300,000 and the U.S. Congress $ 887,710.31.[14]

On February 21, 1885, Washington's Birthday, the Monument was formally dedicated by President Chester A. Arthur in the presence of several descendants of the Washington family, and a vast throng of visitors from all over the nation. Thus 85 years after its original proposal in May 1800, Congress saw the completion of a monumental-sized memorial to George Washington.

Three more years of work, however, were required to complete the interior of the obelisk and improve the grounds, before visitors could be admitted to the monument. In 1885 the two original doorways in the shaft were redesigned and modified. In accordance with Robert Mills' original design, two large Egyptian doorways, each 15 feet high and 6 feet wide, had been built into the east and west elevations of the obelisk prior to 1854. Each door was surmounted by a heavy pediment and an entablature upon which was carved a winged ball and the asp. In 1885 the projecting jambs, --

14. Because of the Centennial and apparently because the monument associations had learned how to lobby effectively, Congress was also appropriating liberal sums of money to erect other great monuments in the 1880s. Congress provided $ 100,000 to erect the Yorktown Monument at Yorktown, Va., in 1880; $ 70,000 to built the Saratoga Battle Monument at Schuylerville, N.Y. in 1881 and 1884; $ 40,000 to help erect the Benmington Battle Monument at Bennington, Vt. in 1886; and $ 30,000 towards the construction of the Trenton Battle Monument at Trenton, N.J. in 1884. State legislatures also voted considerable sums of money to help construct all of these mounments, with the exception of the one at Yorktown.

entablature, and pediments were dressed down to the planes of the faces of the shaft, and the west doorway was walled up with large grained marble, such as was used in the facing the lower part of the walls. The east entrance, now the only doorway to the obelisk, was reduced in height from 15 to 8 feet, and was closed by two marble doors or slabs, revolving upon heavy bronze hinges, the weight of each leaf, over half a ton, being supported upon a steel friction roller.

Also installed in 1885 was a electric lighting plant to light the interior of the monument with 75 incandescent electric lamps, lightning conductors or rods, and marble shutters on the nine windows in the pyramidion. In 1886 the interior iron staircase with 898 steps was completed in April; Otis Brothers & Co. of New York City also installed a steam-operatered passenger elevator in the shaft; and the floor inside the monument was paved with blue stone flagging.[15]

A stone one-story boiler house, constructed of refuse granite and marble, was built at a point located 750 feet southwest of the monment under contract with William Bradley of Washington, D.C. at a cost of $ 6,994.58. A pipe tunnel, located beneath the surface of the ground, connecting the boiler house and engine house by an brick arched passageway three feet wide and 4 feet 3 inches high with the monument was also completed in 1886. This tunnel carried on its floor the steam pipe to and the exhaust-pipe from, the engines at the foot of the monument. The engine house, which accommodated the dynmano and engine used for lighting the interior of the shaft, was rebuilt and enlarged in 1886. This structure, located on the terrace at the foot of the monument, was built of iron and masonry and has a copper covered roof. The total cost of the heating

15. The cost of this interior work in 1885-86 was as follows: electric light plant, $ 1,872.00; Iron work for interior stairs and platforms, $ 20,591.00; Lightning rods, $ 1,271.00; marble for doorway, $ 1,375.00; inserting 53 memorial blocks or stones in interior wall, $ 1,825.00; and installing passenger steam elevator, $ 2,740.00. Total, $ 29,674.

plant, including the boiler house, two new boilers, the pipe tunnel, steam pipes, and the rebuilt engine house, was $ 16,598.58.

In 1887 11 more memorial stones were inserted in the interior walls and an apron of granolithic pavement 10 feet wide was laid about the foot of the shaft to prevent the washing out of earth by storm waters. The chief project from 1887 to 1889, however, was the placing of some 250,000 cubic yards of earth about the base of the monument and in Babcock Lake, which was located just to the north of it, at a cost of $ 97,500.00.[16] The purpose of this fill was to blend the terrace of the mounment with the surrounding land so as to give the whole area a natural appearance.

The monument was offically opened to visitors on October 9,1888. Total cost of construction of the monument and improvement of the grounds from 1848 to 1889, was approximately $ 1,409,500. Of this total, the Washington National Monument Society had contributed about $ 300,000 and the U.S. Congress $ 1,109,500.[17]

In 1888-89, the Washington National Monument Society had a one-story marble lodge house constructed at their own expense at a point about 480 feet to the east of the monument. Designed by architects William M. Poindexter & Company of Washington, D.C. and erected at a cost of $ 11,650, the lodge house was transferred by the Society to the jurisdiction of the United States in 1889. Visitors to the monument were assembled at the lodge and when a sufficient number had congregated, they were escorted by a guide to the monument.

17. See Appendix No. 2, for annual appropriations, and expenditures, 1848-1888, and progress of construction and total costs.

16. Lieut. Col. John M. Wilson, Corps of Engineers, was in charge of work on the monument and grounds after April 4,1888, when Lieut. Col. Thomas L. Casey was relieved of his duties as engineer-in-charge of the project at his own request.

All work on the monument and grounds was completed by December 1888. The Joint Commission for the Completion of the Monument was dissolved at its own request by Act of Congress approved October 2,1888, and the Secretary of War was charged with the custody, care, and protection of the monument thereafter. From October 9,1888 to 1932 a total of 3,734,419 people visited the top of the monument, averaging about 155,600 persons a year. The 50th millionth visitor visited the obelisk on March 7,1969.

6.Alterations to the Monument, 1889-1978:

In 1888, when the monument was opened to visitors, it took passengers riding on the steam elevators 12 minutes to reach the top. The electric elevator installed in 1901 reduced this riding time to five minutes. Improved electric elevators were used in 1926 and 1959. The present riding time to the top is one minute.

The first exterior searchlights were placed in use in 1929. Later red aircraft-warning signals began flashing from the observation windows, and, in 1958, from holes cut just above the windows for better visibility. In 1959 new floodlights of more than 92-million candlepower were installed. Also in 1959, a giant dehumidifier was installed in the basement of the monument and this ended an old Monument phenomenon - the moisture condensation that had long precipitated as indoor rain.

Twice in its life time (1934 and 1964) the great white marble shell of the obelisk has been repaired and scrubbed from base to tip.

Bars were first installed in the observation windows in 1926 to prevent suicides (of which there have been five) and in 1961 safety glass was also placed in these windows at the 504 foot level to prevent thoughtless visitors from tossing objects out of these opening.

7. The Monuments Grounds: a. Reclaiming Land, 1882-1901:

From 1848 to 1901, the Washington Monument stood in what the editor of the New York Tribune accurately decribed in 1875 as " a wretched location," - on low marshy land, with the waters of the Potomac River to the west and of Lake Babcock to the north almost reaching the foundations of the obelisk. In 1882 the Congress made the first of a series of appropriations to provide for the reclamation of these Potomac tidal flats marshes that lay immediately to the west and south of the monument.

From August 1882 to July 1912 the Corps of Engineers expended a total of $ 3,388,500 to create 739 acres of new land. The tidal basin was completed in March 1890; 412 acres of what is now known as West Potomac Park was finished in 1901 and the 327-acre area now known as East Potomac Park was reclaimed in August 1911.

The 412 acres of new land in what is now West Potomac Park made it possible by 1901 to greatly improve the setting of the Washington Monument by landscaping and developing the area as a public park. Consideration of improvements began in 1900.

b. The McMillian Plan, 1900-1932

On December 12, 1900, commemorative exercises celebrating the 100th anniversary of the removal the seat of the Federal Government from Philadelphia to Washington, D.C. opened at the White House and Capitol. The keynote of the celebration was the improvement of the District of Columbia in a manner commensurate with the dignity and resources of the United States, which was then beginning to emerge as a world power.

The American Institute of Architects worked with the Senate Committee on the District of Columbia to prepare a general plan for the development of a public park system for the District. A Senate sub-committee was appointed to handle this task and it became known as the McMillan Commission, so named after Senator James B. McMillan. Experts recommended by the American Institute of Architects were engaged by the McMillan Commission to help prepared a master plan.

Four noted Americans- Architect Daniel H. Burnham of Chicago, Frederick Law Omstead, J.r., landscape architect of Brooklin, Mass., Architect Charles F. McKim of New York City, and Sculptor Augustus Saint-Gaudens, also of New York City, made up this Park or Burnham Commission.

After extensive study here and in Europe, the Park Commission proposed the restoration of L. 'Enfant's Grand Avenue on a direct line connecting the Capitol and the Washington Monument with the great greensward and four rows of elms bordering it. Burnham wrote:

"We propose a great open vista and that vista is the great architectural feature, if we may speak of landscape work as architectural. The center is to be grass, like a green carpet, with roadways on each side, overhung by trees. The width of the Mall from building to building is a little greater than the length of the Capitol, as it should be. The Mall buildings form the architectural lines which lead up to the Capitol."

Accepted by Senator McMillan, Chairman of the Senate Committee on the District of Columbia, he presented his report, based on the Burnham study, to the Senate on January 15, 1902. This became known as the McMillian plan for 1902 for the "improvement of the Park System of the District of Columbia."

With regards to the Washington Monument, the McMillian plan noted:

> In 1901 the immediate surroundings of the Monument were so inadequate as to cause the beholder near at hand to lose that very sense of grandeur which it inspired from a distance. The lack of harmonious relationship between it and the great structures with which it came into juxtaposition disturbed one's sense of fitness. No portion of the task before the Commission required more study and extended consideration than had the solution of the problem of devising an appropriate setting for the Monument. The treatment here proposed was the one which seemed best adapted to enhance the value of the Monument itself. Taken by itself, the Monument stands not only as one of the most stupendous works of man, but also as one of the most beautiful of human creations. It is at once so great and so simple that it seems to be almost a work of nature. Dominating the entire District of Columbia, it has taken its place with the Capitol and the White House as one of the three foremost national structures..

As to the proposed treatment of the Monument grounds, the McMillan plan recommended:

> b. The Washington Monument.--From this cross axis the carpet of greensward of the Mall stretches westward. The bordering columns of elms march to the Monument grounds, climb the slope and spread themselves to right and left on extended terraces to form a great body of green, strengthening the broad platform from which the obelisk rises in majestic serenity. The groves on the terraces would become places of rest, from which one would get wide views of the busy city: of the White House, surrounded by its ample grounds; of the Capitol, crowning the heights at the end of the broad vista; of sunny stretches of river winding at the foot of the Virginia hills.
>
> Axial relations between the White House and the Monument were created by the construction of a sunken garden on the western side of the great shaft, the true line passing through the center of a great round pool to which marble steps lead down forty feet from the Monument platform. Surrounded by terraces bearing elms, laid out with formal paths lined by hedges and adorned with small trees, enriched by fountains and temple-like structures, the Monument Gardens would become the gem of the Mall system.
>
> Seen from the lower level, the Monument would gain an additional height of nearly 45 feet, while at the same time nothing would be allowed to come so near as to disturb the isolation which the Monument demands.

The formal garden, which was to be located between the Monument and 17th Street, was to serve three architectural purposes :

1. It was to be the connecting link between the Mall development on the east and the proposed Lincoln Memorial development on the west, which due to the configuration of the ground were placed on different levels, the Mall being some 23 feet higher.

2. It was to open and accentuate the North-South Axis through the White House along the Meridan of Washington.

3. It was to furnish a setting at the base of the Monument, which when viewed from the west (small type) WOULD HAVE A FORMality commensurate with the surroundings of the Lincoln Memorial.

As the execution of this part of the project involved a very heavy fill east of the Monument together with extensive and deep excavation to the west thereof, the question arose as to the possible hazard to the stability of the Monument that might result from the unbalancing of subsoil pressures arising from such substantial changes. In 1930 a committee of engineers was appointed to investigate and report on these problems.[18] A number of borings were sunk to bedrock in the vicinity of the Monument, with samples of earth taken at four-foot intervals.

These borings disclosed the existence of a suspected but hitherto unknown stratum of blue clay, averaging 40 feet in thickness, underlying the bed of sand and gravel upon which the Monument rests, and after an exhaustive analysis of conditions, the engineers in 1931 reported unfavorably as to the execution of the proposed sunken garden plan.

The formal garden plan was thus never carried into effect. The Monument's surroundings, however, have been vastly improved since 1900, when the Mall area was an unsightly clutter of railroad tracks, haphazard buildings, marshes, and tidal flats.

The Washington Monument was administered by the Office of Public Buildings and Grounds to 1925 and then by the Office of Public Buildings

18. This committee of Army Engineers was comprised of: Lieut.Col. Ulysses S. Grant, III; Major Douglas H. Gillette; Mr. J. Vipond Davies, Mr. Lazarus White, and Mr. John L. Hagle, the last three being civil engineers.

and Public Parks of the National Capital until August 10,1933, when the obelisk and its 106.01 acres of Federally owned land were transferred to the National Park Service.

c. Existing Conditions:

The granite boiler house, completed in 1886 and located about 750 feet southwest of the monument, now serves as headquarters for the National Park Service Mall Operations Office. The brick tunnel, built in 1886 to carry the steam pipes from the boiler house to the monument, has been blocked off at both ends. The marble Washington Monument Lodge, finished in 1889, is now used as a souvenir store and an addition made to the rear serves as a snack bar; both of these facilities are operated by concessionaires.

The Jefferson Pier which Thomas Jefferson had erected as a marker at the intersection of lines due south of the White House and due west from the Capitol stands about 100 feet northwest of the monument. First set in place in 1810, the pier was removed subsequently but was reinstalled in 1925.

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(Serial No. 4436)

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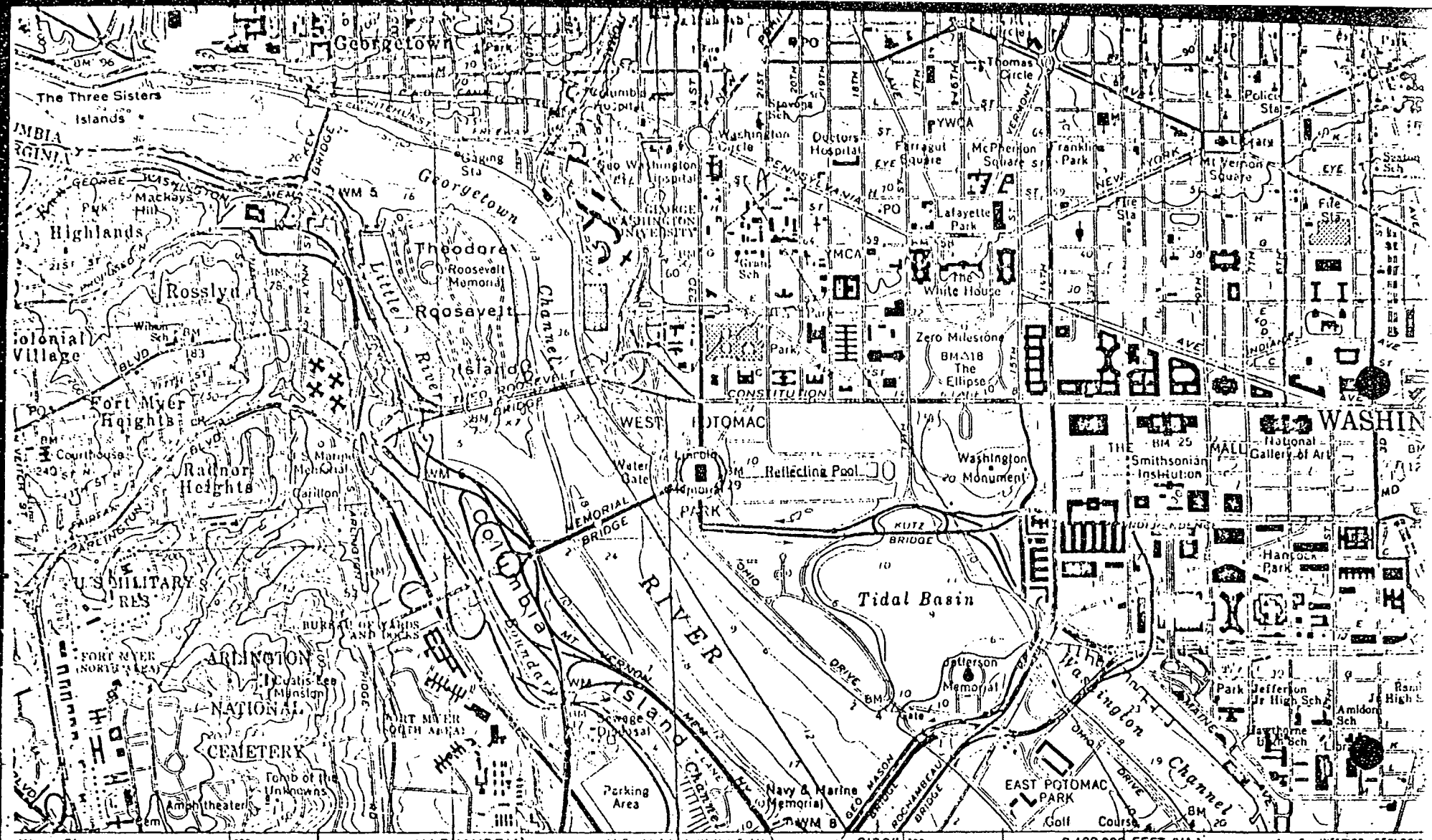
APPENDIX NO. 1- Checklist of chief 19th Century memorial monuments of heroic scale

Name of Monument	Location	Events Commemorated	Designer	Dates of Construction	Cost of Construction	Description
1. Washington Monument	Baltimore, Md.	George Washington's services as General, 1775-1783.	Robert Mills	1815-1829	$ 203,764.08	Marble Doric column 165 feet high on a rectangular base, 17' statue of Wash.
2. Bunker Hill Monument	Charlestown, Mass.	Battle of Bunker Hill, June 17, 1775.	Loamdi Baldwin & Solomon Willard	1825-1842	$ 156,218.14	Granite obelisk 221' 5" high and 30 feet square at base.
3. Washington Monument	Washington, D.C.	Washington's services as general and first President	Robert Mills & George Perkins Marsh	1848-1888	$1,409,500.00	White marble obelisk, 555' 5 1/8" high and 55 feet square at the base.
4. Saratoga Battle Monument	Schuylerville (Old Saratoga), N.Y.	Two Battles of Saratoga, September 19 and October 7, 1777 & Surrender, Oct. 17, 1777.	J.C. Markham	Cornerstone, 1877. Shaft, 1881-1882. 1890	$ 125,000	Granite obelisk 154 feet high, adorned with Ruskinian Gothic revival ornaments. 20 ft. square at base.
5. Yorktown Victory Monument	Yorktown, Va.	French Alliance of 1778-83 and Victory at Yorktown, October 19, 1781.	Richard Morris Hunt, J.Q.A. Ward, Van Brunt.	1881-85	By Congress $100,000	white marble column 95 feet tall, topped by female statue of "Liberty".
6. Bennington Battle Monument	Bennington, Vt.	Victory at Battle of Bennington, N.Y., August 16, 1777.	J. Philipp Rimm	1887-1889, 1891.	$90,000	Limestone obelisk 306 feet high. 37 ft. square at base.
7. Trenton Battle Monument:	Trenton, N.J.	Battle of Trenton, December 26, 1776.	James H. Duncan	1891- 189	$ 60,000	granite 150-foot fluted column topped by heroic size statue of Washington.

COSTS OF CONSTRUCTION AND FEDERAL APPROPRIATIONS FOR THE WASHINGTON MONUMENT, 1848-1888

Year	Expended by	Amount Expended	Federal Approp.	Feet added	Height of Shaft
1848-1876	Washington National Monument Society	$ 300,000	0	156' 4 1/8"	156' 4 1/8"
1876-88	U.S. Government Date of Approp.				
1873-80	August 2,1876	$ 94,473.92	$ 200,000	-6' Strengthened foundations	150'
1880	July 16, 1880	154,929.57	150,000	26	176
1881	March 3,1881	150,285.67	150,000	74	250
1882	April 17,1882	153,585.56	150,000	90	340
1883	March 3,1883	119,871.53	250,000	70	410
1884	-	214,564.31	0	145	555' 5 1/8"
For shaft:	Subtotal: 1848-1884	$ 1,187,710.31	900,000	405	555' 5 1/8"
1885	March 3,1885	39,717.14	75,000	0	To complete structure
1886	August 4,1886	46,106.68	57,000	0	interior & grounds
1887	March 3,1887	42,538.26	50,000	0	" "
1888	October 8,1888	44,853.94	27,500	0	grounds
Total,1848-1888		$ 1,409,500.00	$ 1,109,500	0	Open Oct. 9,1888



MI MI. 5' 320 (ALEXANDRIA) 5561 I SE ALEXANDRIA (P.O.) 5 MI MOUNT VERNON 14 MI. 2'30" 323 ALEXANDRIA, VA. 5 MI FREDERICKSBURG, VA. 53 MI. 2 420 000 FEET (VA.) INTERIOR—GEOLOGIC DOUGLASS BR

SCALE 1:24 000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET

DATUM IS MEAN SEA LEVEL

DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOW WATER

SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER

THE MEAN RANGE OF TIDE IS APPROXIMATELY 2.8 FEET

ROA

Heavy-duty

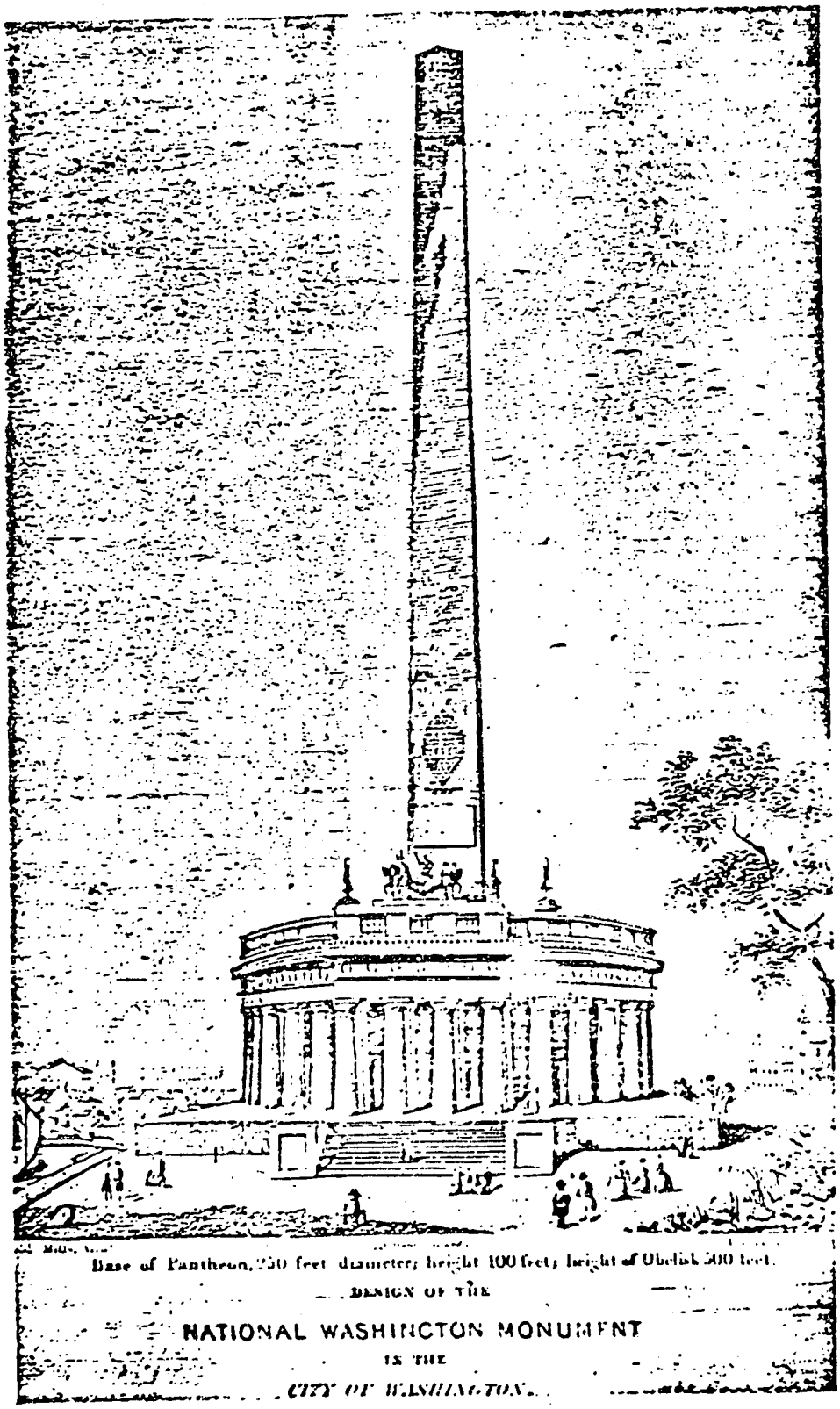
Medium-duty

Interstate Route

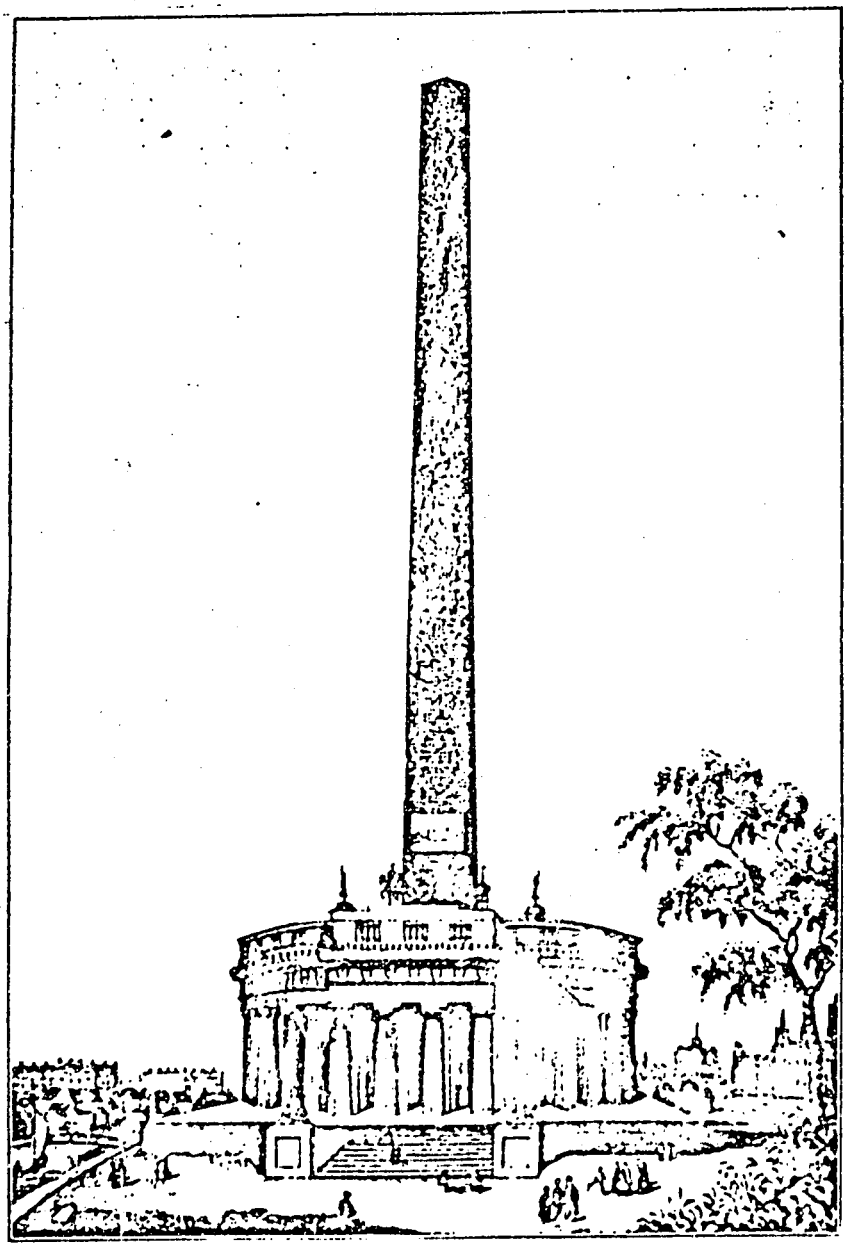
MARYLAND

QUADRANGLE LOCATION

WASHINGTON

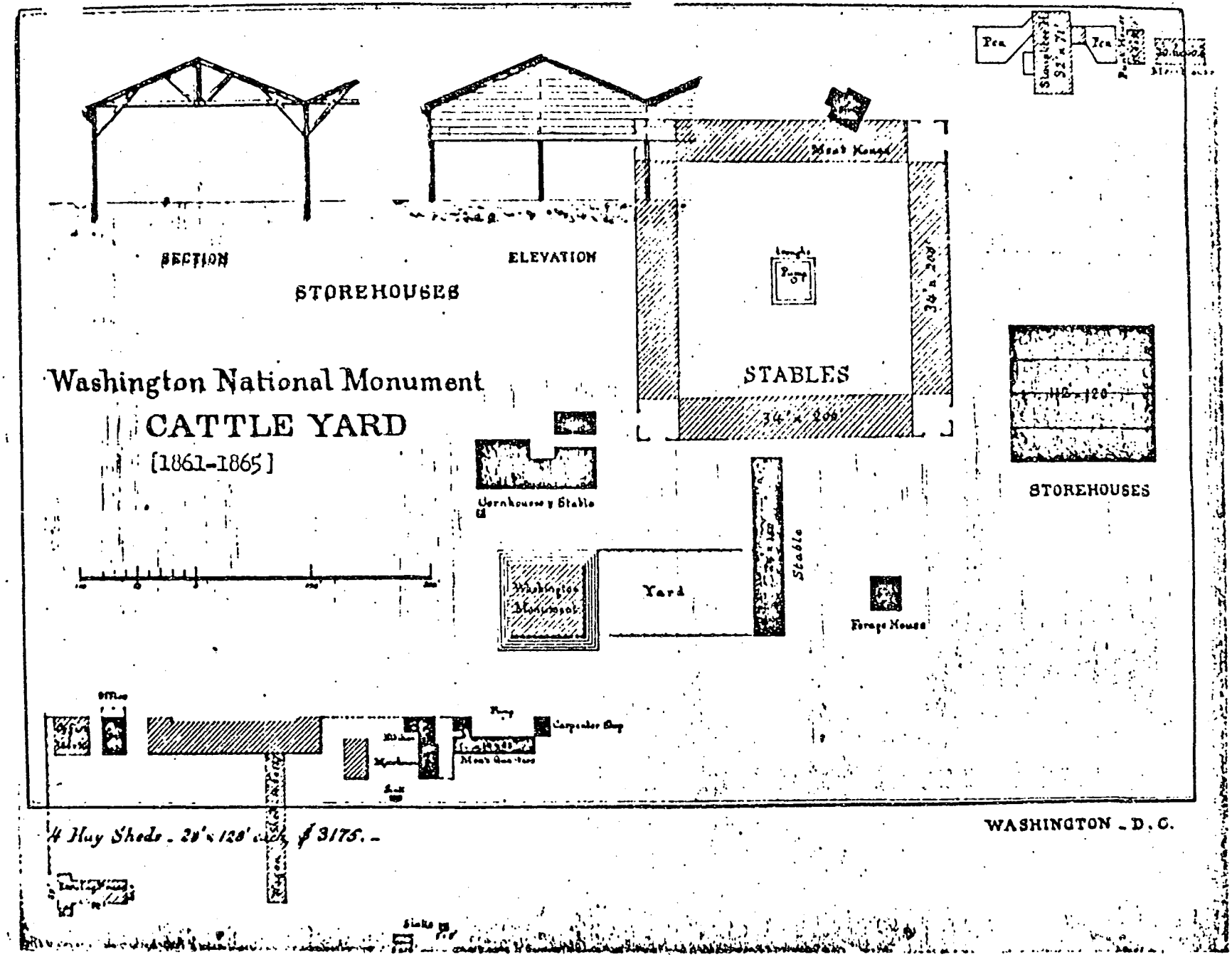


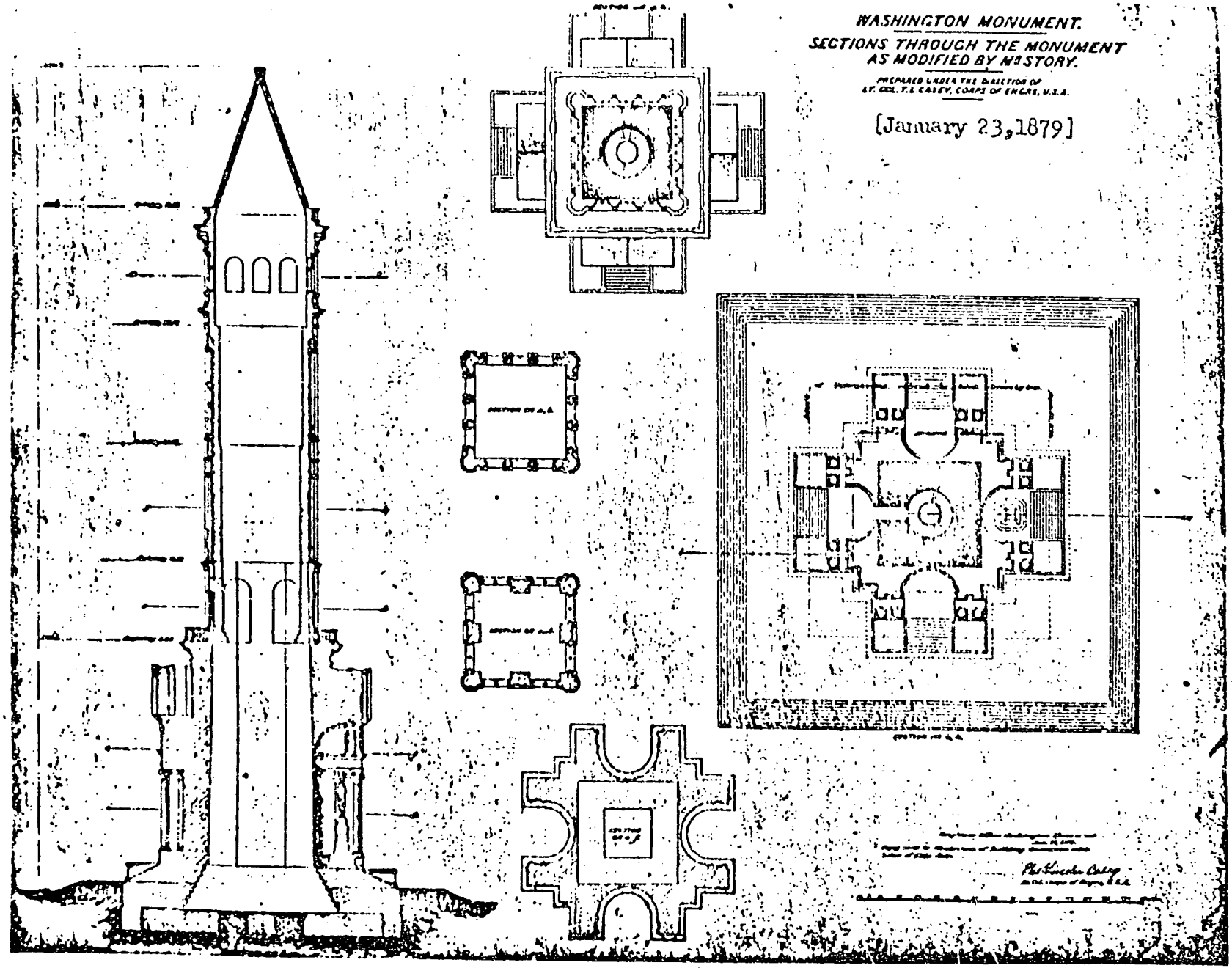
Robert Mills' Original Design- 1836.



WASHINGTON NATIONAL MONUMENT

(original design by Robert Mills.)


SECTION
ELEVATION
STOREHOUSES
Washington National Monument
CATTLE YARD
[1861-1865]
Meat Range
STABLES
34' x 200'
Yard
Stable
Forage House
STOREHOUSES
WASHINGTON - D. C.
4 Hay Sheds - 20' x 120' each @ $175. -

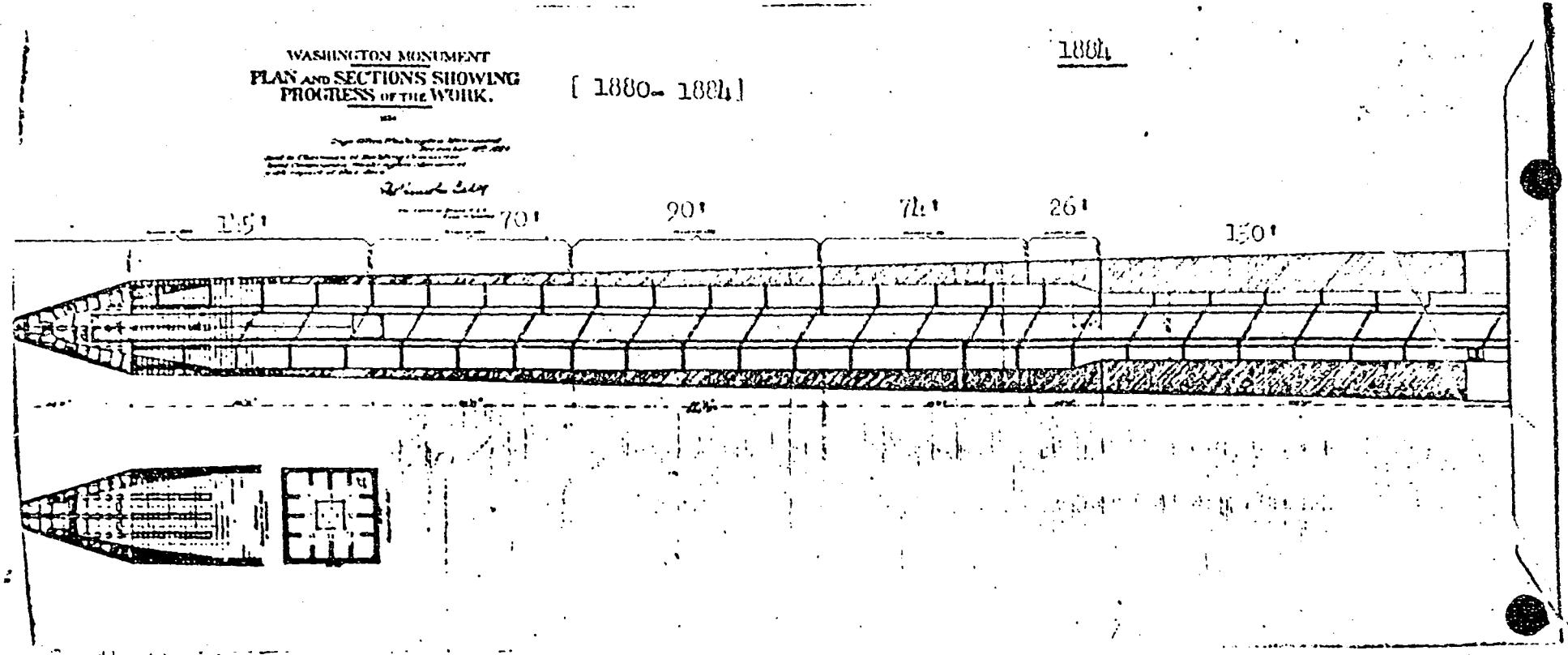

WASHINGTON MONUMENT.
SECTIONS THROUGH THE MONUMENT
AS MODIFIED BY M^R STORY.
PREPARED UNDER THE DIRECTION OF
LT. COL. T.L. CASEY, CORPS OF ENGRS, U.S.A.
[January 23,1879]

WASHINGTON MONUMENT

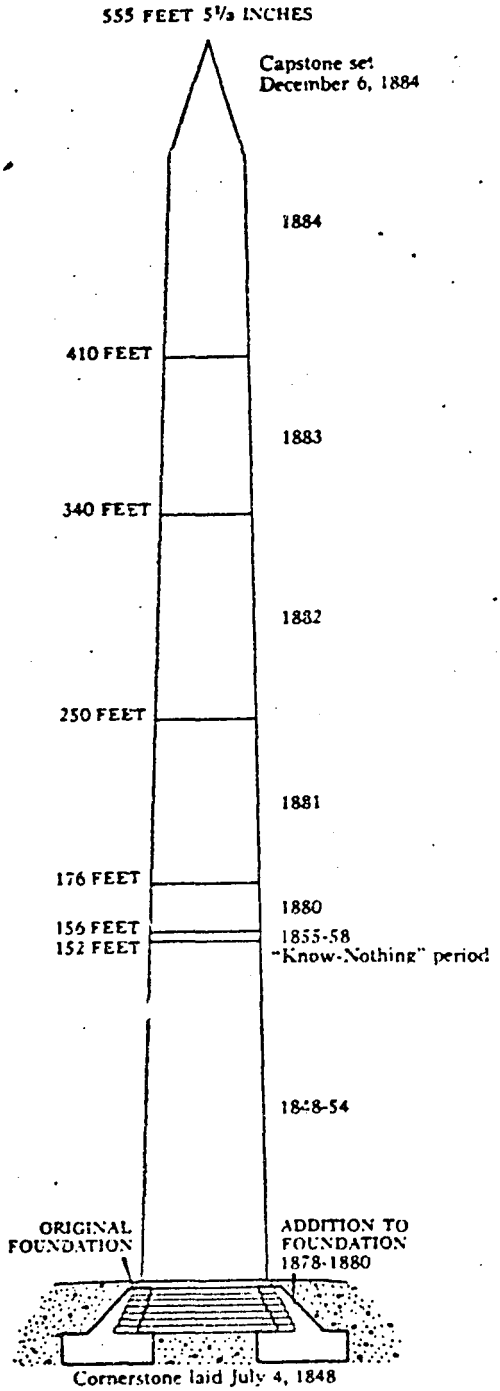
PLAN AND SECTIONS SHOWING PROGRESS OF THE WORK.

[1880- 1884]

1884



GROWTH OF THE MONUMENT



Memorandum

Sept. 15, 1978

To: Marc Malik, Team Captain,
National Capital Team, DSC

From: Charles W. Snell, Historian, DSC

Subject: History data section for Washington Monument.

Enclosed is a "Brief History of the Washington Monument and Grounds, 1783-1978," 29 pages- in double spaced final draft form, which you requested for use in the Washington Monument project you are working on. If you need any more information on any aspect of this subject, please let me know and I will be happy to provide it.

With best regards

Charlie Snell

Charles W. Snell

PSA 10/27

Copy: Richard G. Huber - For your information.

Will begin work on Kenilworth Aquatic Gardens project next.